Review of Essex Minerals Local Plan 2014

Assessment of Candidate Sand and Gravel Sites

Appendix C

Biodiversity Detailed RAG Assessment Methodology and Results

Introduction

The technical RAG assessment is a high-level ecological assessment based upon a combination of spatial data and site assessments for each proposed site. It includes regard to the potential for effects upon statutory and non-statutory designated sites, as well as irreplaceable and Priority habitats using a relative grading system where impacts to International statutory designated sites are provided the highest rating in line with the NPPF. It also considers the strategic context of the Site within the local area including with respect to its position within ecological networks.

Methodology

This high-level plan assessment is based upon a combination of desk-based data and ground truthing during on-site assessments at each proposed mineral site. The sensitive ecological features included, the spatial data and buffers used and rationale applied to establish the RAG (Red-Amber-Green) grades are set out below.

The RAG grading is set out in the Biodiversity RAG Sensitivity Grade Table (Table 2) below. This takes into account the need to protect and enhance valued biodiversity sites by identifying and mapping local wildlife-rich habitats and wider ecological networks in accordance with the National Planning Policy Framework[1] (NPPF). This includes the hierarchy of international, national, and locally designated sites. It also considers the relative importance and the contribution that the existing habitats on the proposed mineral site make to wider ecological networks.

Condition and distinctiveness of habitats are not considered as this assessment is concerned with the potential for impacts on the habitat type, irrespective of its condition or distinctiveness. Protected and Priority species are not systematically considered in the grading as habitats are used as a proxy for species. Incidental records of species are mentioned where seen on-site or local knowledge is available.

Restoration proposals have not been taken into account as this stage of the Site assessment process is focussed upon potential ecological impacts.

International statutory designations (i.e., Special Areas of Conservation (SAC), Special Protection Areas (SPA), and Ramsar sites) and national statutory designations (i.e., Site of Special Scientific Interest (SSSI) and National Nature Reserves (NNR)) have been identified within the relevant Impact Risk Zones (IRZ) relating to minerals workings through the Natural England Open-Source datasets, using the most up-to-date data available. The greatest weight has been attributed to the international designations, followed by national and then local designations including Local Nature Reserves. As well as use of IRZs, additional consideration is given to potential impacts to water quality and water quantity via watercourses, which may extend the potential length of the pollution pathways to beyond the standard Impact Risk Zone buffers.

[1] NPPF National Planning Policy Framework - 15. Conserving and enhancing the natural environment - Guidance - GOV.UK (www.gov.uk)

SPAs, SACs and Ramsar sites are collectively known as 'Habitats sites' within the NPPF and all Habitats sites are additionally designated as SSSIs. Effects on the Habitats sites, alone and in combination with other plans and projects, are also required to be determined through a separate plan-level Habitats Regulations Assessment for the Essex Minerals Local Plan.

Marine Conservation Zones (MCZ) are not included within Impact Risk Zones and so a 2km buffer has been used, as well as proximity of a proposed minerals Site to watercourses leading into a MCZ, thereby creating a potential pollution pathway (for water quality and water quantity) between the MCZ and proposed minerals Site.

The RAG assessment also considers the scale of potential impacts using knowledge of other potential pollution pathways (e.g., air quality and disturbance) between the mineral Site and sensitive features, using the Source-Pathway-Receptor concept, as well as the potential for functionally linked land[2] and prevailing wind direction. In addition, it uses professional judgement, experience, and local knowledge. The potential for impacts on groundwater dependent habitats have been afforded particular consideration due to the nature of minerals extraction. It is anticipated that air quality will also be considered in greater detail in the above-mentioned Habitats Regulations Assessment for this MLP.

Ancient woodlands can be adversely affected by quarrying such as changes to groundwater, noise, lighting, and the smothering of leaves by dust. Ancient Woodland, ancient trees and veteran trees have a high level of local and national protection and are 'irreplaceable' habitats. The NPPF at paragraph 180 states that, *'c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists.'*

Therefore, irreplaceable' habitats are graded higher than locally designated and other non-designated habitats.

The Government Standing Advice for Ancient woodland, ancient trees, and veteran trees: advice for making planning decisions sets out minimum distances for development which ensures protection of tree roots. However, ancient woodlands are ground water dependent. Hence, ancient woodlands within 500m metres of proposed sites were obtained from the Ancient Woodland Inventory Natural England dataset to ensure that all potential impacts, including hydrological impacts, could be

[2] Functionally linked land' (FLL) is a term often used to describe areas of land or sea occurring outside a designated site which is considered to be critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying feature for which a Special Areas of Conservation (SAC)/ Special Protection Area (SPA)/ Ramsar site has been designated. These habitats are frequently used by SPA species and supports the functionality and integrity of the designated sites for these features. There is a requirement for competent authorities to consider the importance of functionally linked habitats in Habitats Regulation Assessments (HRAs) when assessing new plans or projects to ensure the Conservation Objectives for the site can still be delivered. The impact of the loss of functionally linked land on European sites can be difficult to determine as there is often limited information available:
Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North West of England - NECR361 (naturalengland.org.uk)

taken into account[3]. Potential remnant ancient woodlands that were accessible on-site or close by that were too small to be included in the national dataset (less than 2ha) were identified, based upon the presence of potential indicator species and historic maps (Ordnance Survey First Edition and Chapman and Andre 1777).

A simplified site assessment for veteran trees was devised, based upon the Veteran Trees Initiative Specialist Survey Method. Ecological site assessors identified and recorded the species and location of potential veteran and ancient trees on-site and their on-site descriptions and photographic evidence was reviewed by qualified arboriculturists. A veteran tree was defined as containing four of the following five elements:

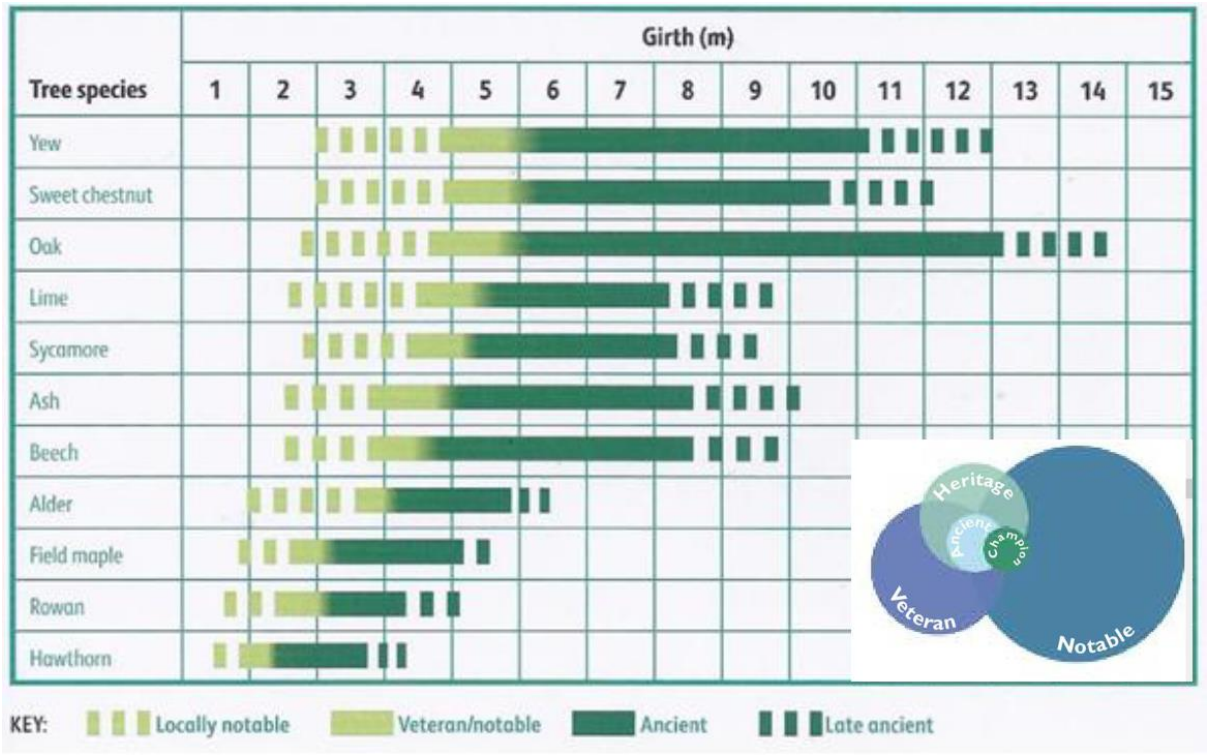
- Deadwood
- Rot sites
- Rot holes
- Fungi
- Hollowing

The presence of three features indicates a candidate veteran, which if surveyed at a different time of year might be considered a veteran tree. Candidate veterans are given the same weight as veterans, on the basis that they are likely to become the next generation of veterans.

With respect to ancient trees, the girth of the tree was measured at 1.3m above ground level, in line with the veteran tree methodology. The image below in Table 1 (Girth in relation to age and developmental classification of trees (Lonsdale, D. (ed.) (2013)) provides guidance as to which girth size is required for the different tree species to be considered ancient. Other trees not identified as veterans or candidate veterans by the ecologists may still have value relevant to planning applications. They may still be considered of material value in the planning process.

[3] Practical Guidance -Planning for Ancient Woodland -Planners' Manual for Ancient Woodland and Veteran Trees July 2019 (Woodland Trust): *https://www.woodlandtrust.org.uk/media/51656/planners-manual-for-ancient-woodland.pdf*

Table 1: Girth in relation to age and developmental classification of trees (Lonsdale, D. (ed.) (2013). Ancient and other veteran trees: further guidance on management. The Tree Council, London 212pp.)



Proximity to locally designated sites, e.g. Local Wildlife Sites and Special Roadside Verges, was also assessed. Local Wildlife Sites and Special Roadside Verges are identified against a set of habitat and species criteria. The desk search included all Local Wildlife Sites and Special Roadside Verges within 1km from the proposed mineral sites, using a scaled approach, with the greatest impacts considered likely to be where the proposed site was on or adjacent to one of more of these locally designated sites, as well as consideration of the sensitivity of the habitat type.

In addition, proximity to Priority habitats, as listed under the Natural Environment and Rural Communities Act 2006 and set out within the NPPF, was considered. Hedgerows, lakes, and ponds mapped using OS Mastermap were 'ground-truthed' on site and Priority habitats recorded.

The setting of the proposed minerals sites in the context of the surrounding landscape and connectivity to existing habitats is an important consideration for site assessments. Information about the importance of the proposed site's ecological setting was gathered using all of the ecological datasets listed within the Table 3 below -including use of aerial imagery- as well as the on-site assessment. This includes context within 'Risk Zones' for Great Crested Newts.

A Local Nature Recovery Network is currently being developed for Essex and is likely to be in place as the Essex Minerals Local Plan review unfolds. While it is

anticipated it may be available during consideration of Preferred Sites, it is not currently at the stage where it can be used.

The impacts of minerals workings upon all of the above have been considered and a RAG sensitivity grade attributed to each proposed mineral site in accordance with the Biodiversity RAG Sensitivity Grade Table (Table 2) below.

Table 2: Biodiversity RAG Sensitivity Grade Table

RAG Sensitivity Grade				
RED	***RED-AMBER***	***AMBER***	***AMBER-GREEN***	***GREEN***
Ecological impacts are likely to be serious and mitigation to make the Site acceptable would be difficult. The Site is within/ or adjacent to an internationally or nationally designated habitat and mitigation to make the Site acceptable would be difficult. Subject to plan-level Habitats Regulations Assessment, the adverse effects to the integrity of internationally important wildlife sites would be unavoidable and mitigation to make the Site acceptable would be difficult. The Site could have serious impacts upon irreplaceable habitats.	Ecological impacts are likely to be major and is likely to require high levels of mitigation to make the Site acceptable. The Site could have a major impact upon international or national designations and is likely to require high levels of mitigation to make the Site acceptable. Subject to plan-level Habitats Regulations Assessment, the adverse effects on the integrity of internationally important wildlife sites could be avoidable with significant levels of appropriate mitigation. The Site could have major impacts upon irreplaceable habitats.	Ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon international or national designations and is likely to require medium levels of mitigation to make the Site acceptable. Subject to plan-level Habitats Regulations Assessment, the adverse effects on the integrity of internationally important wildlife sites could be avoidable with appropriate mitigation. The Site could have moderate impacts upon irreplaceable habitats.	Ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. The Site could have a minor impact upon international or national designations and is likely to require low levels of mitigation to make the Site acceptable. Subject to plan-level Habitats Regulations Assessment, the adverse effects on the integrity of internationally important wildlife sites are likely to avoidable. The Site could have minor impacts upon irreplaceable habitats.	There is likely to be no ecological impact that requires mitigation. The Site is not likely to have any impact upon international or national designations that requires mitigation. Subject to plan-level Habitats Regulations Assessment, there are no predicted adverse effects on the integrity of internationally important wildlife sites. The Site would have no impacts upon irreplaceable habitats.

RAG Sensitivity Grade				
RED	***RED-AMBER***	***AMBER***	***AMBER-GREEN***	***GREEN***
	The Site could have a serious impact upon the natural environment including local designations and Priority habitats and species.	The Site could have a major impact upon the natural environment including local designations and Priority habitats and species.	The Site could have a moderate impact upon the natural environment including local designations and Priority habitats and species.	The Site is 'likely' to have no impacts on upon the natural environment, including local designations and Priority habitats and species that requires mitigation.

Table 3: Ecological Datasets and Buffers used with Summary of Rationales

Dataset	Source	Version Date	Rationale for use in RAG Sensitivity Grade	Buffer	Rationale for Buffer
Sites of Special Scientific Interest	Natural England	15/09/2022	Nationally important site with statutory protection.	Natural England Impact Risk Zone SSSI buffer for minerals developments. Additional consideration of potential impact pathway via water courses.	Natural England Impact Risk Zones[4] for SSSIs. Potential for impacts on groundwater dependent habitats. Potential pollution pathway between the mineral site and SSSI.
Special Protection Area	Natural England	29/06/2021	Internationally important site with statutory protection.	See SSSI	See SSSI
Special Areas of Conservation	Natural England	28/02/2022	Internationally important site with statutory protection	See SSSI	See SSSI
Ramsar	Natural England	02/10/2020	Internationally important site with statutory protection	See SSSI	See SSSI
National Nature Reserve	Natural England	15/09/2022	National designation	See SSSI	See SSSI

[4] [4] Natural England's Impact Risk Zones for Sites of Special Scientific Interest, User Guidance, V4.0 (27/04/2021)

Dataset	Source	Version Date	Rationale for use in RAG Sensitivity Grade	Buffer	Rationale for Buffer
Marine Conservation Zones	Natural England	31/05/19	National designation with statutory protection.	2,000 metres. Proximity to a watercourse that feeds into a Marine Conservation Zone.	Potential pollution pathway between the mineral site and MCZ.
Local Nature Reserve	Natural England	16/09/2022	Local designation with statutory protection.	500 metres	Professional judgement
Ancient Woodland	Natural England	15/09/2022	Irreplaceable habitat. Robust protection in national policy and via local planning system.	500 metres	Ancient woodland, ancient trees, and veteran trees: advice for making planning decisions (Government Standing Advice). Professional judgement.
Local Wildlife Site (LoWS)	District authorities and Essex Field Club	Various.	County-level important site with non-statutory protection via the local planning system. Typically underpinned by Section 41 habitats.	1km	Professional judgment and proximity to Local Wildlife Sites, using a scaled approach based upon distance from site. Consideration of potential pollution pathways and prevailing wind direction. Potential for impacts on groundwater dependent habitats. On or adjacent to LoWS most likely to create an impact.
Special Roadside Verges (SRV)	Essex County Council	August 2022	County-level important site with non-statutory protection via the local planning system. Often contains rare plant species. Many overlap with LoWS.	1km	Professional judgment and proximity to Local Wildlife Sites, using a scaled approach based upon distance from site. Consideration of potential pollution pathways and prevailing wind direction. Potential for impacts on groundwater dependent habitats.
Priority Habitat	Natural England		Section 41 habitats. These also typically	1km	Quality and coverage of this national dataset in Essex is highly variable

Dataset	Source	Version Date	Rationale for use in RAG Sensitivity Grade	Buffer	Rationale for Buffer
Inventory for England			underpin Local Wildlife Sites.		so it was ground-truthed during site assessments. Professional judgment and proximity to Local Wildlife Sites, using a scaled approach based upon distance from site. Consideration of potential pollution pathways and prevailing wind direction. Potential for impacts on groundwater dependent habitats. On or adjacent to Priority habitats most likely to create an impact.
Great Crested Newt Risk Zones	Natural England		Nationally agreed strategic approach to a European Protected Species. Used to view proposed sites within the context of landscape and connectivity of existing habitat.	None. Within or not within Amber Zone.	Highlighted if within Amber Zone but not if within Green Zone. There are no red zones within the study area.
OS Mastermap Water Network Layer	Ordnance Survey	01/2022	Used to enable consideration of potential pollution pathways for water quality and quantity.		N/A
Aerial photography	Google imagery	Various. Most recent available	Used to view proposed sites within the context of landscape and connectivity of existing habitat.	N/A	N/A
Ordnance Survey First Edition (6 inch)	Ordnance Survey	1880	Used to as indication as to whether woodlands might be ancient	N/A	N/A this

Dataset	Source	Version Date	Rationale for use in RAG Sensitivity Grade	Buffer	Rationale for Buffer
			but are too small to have been included on the Natural England maps.		
Map of the County of Essex 1777 by John Chapman and Peter Andre	https://map-of-essex.uk/map_of_essex_v2/	1777	Used as an indication as to whether woodlands might be ancient but are too small to have been included on the Natural England maps.	N/A	N/A
Environment Agency Operational Water Management Catchment	Essex Combined Management Catchment | Catchment Data Explorer		Used when considering cumulative impacts (not included in RAG Sensitivity Grade)	N/A	N/A

Cumulative impact

The potential for greater impacts to habitats and species resulting from more than one quarry, based upon the ecological mitigation hierarchy (set out in paragraph 175 of the NPPF) are identified in this section. "*Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location*"[5]. Consideration is given to the potential for minerals sites to give rise to effects due to their proximity in time and space which might create additive or incremental effects when added together with other existing, allocated and proposed quarries. The scale of potential impacts may depend upon the size of the individual quarries in the vicinity and the number of years that they have been operating. Cumulative impacts are not included within the RAG grade.

The greater potential to alter the water table in the long-term through large or multiple minerals sites could particularly affect ground water dependent habitats. Greater impacts to statutory sites and ancient woodlands will be considered to be likely where quarrying would ultimately result in extraction on more than one boundary, even if this is not at the same time, as there is a greater likelihood of permanent or long-term changes to the water table in the area as a result of the quarrying.

[5] CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland, Version 1.2 - Updated April 2022 ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf (cieem.net)

Cumulative impacts may also occur through the simultaneous extensive loss of habitats, including farmland, and by reducing networks of habitats, preventing the ability of species to move across the landscape.

Where more than one mineral site is situated along the same watercourse, or in the same Operational Water Management Catchment, the potential for effects on water-sensitive habitats and species resulting from changes to water quality and quantity nearby and downstream is considered likely to be greater. Lowering the water table over a wider area could be compounded and/or longer lasting with phasing of sites.

The working of minerals sites should be phased to control impacts, and sites progressively restored in accordance with a masterplan covering all parcels of land that are eventually allocated. Due to the potential for an expected exponential rise in impacts, the operation of more than one minerals site within an area of the County may require a greater consideration for the Essex Minerals Local Plan such as use of a coordinated phased approach of working across different minerals sites and operators, with greater levels of mitigation and enhancement during operations and through restoration schemes. The greatest impacts are likely to be located where there are a large amount of designated sites or irreplaceable habitats (by geographical size or number) in close proximity, or within the same water catchment area. However, dewatering of a single designated site which is water sensitive could result in irreversible impacts. Any development would need to be beyond scientific doubt that Adverse Effects on the Integrity of Habitats sites can be avoided, to the satisfaction of Natural England.

In addition, the potential for cumulative impacts with major developments and Nationally Significant Infrastructure Projects is considered in the assessment, for example, major roads, housing, or energy schemes (e.g. solar, wind and ports), many of which will be permanent or long-term. These schemes may be permitted by other authorities and therefore mitigation e.g. through sequencing may not be possible. Indeed, some of the mineral sites will be driven by the need for construction materials for these schemes. Impacts may be similar to those set out above and would vary according to the type and size of scheme. For example, smothering of vegetation by creation of dust, disturbance of species from noise and lights, particularly during construction phases of other schemes; direct loss of habitats, water quality and quantity impacts to surface water, groundwater, and watercourses; barriers to species movement, particularly when using habitat networks and loss of farmland habitats.

Where a minerals site is situated near to a sensitive receptor such as a statutory site, ancient woodland, along the same watercourse, or in the same valley as other proposed major development, the potential for impacts are considered likely to be greater.

As stated above, the potential for in combination effects with other plans and projects to Habitats sites will be considered in more detail within the stand-alone plan-level Habitats Regulations Assessment for the Essex Minerals Local Plan.

References

- Natural England Designated Sites information: https://designatedsites.naturalengland.org.uk/

- Maldon District Approved Local Development Plan 2014-2029: web_APPROVED_LDP_12_OCTOBER.pdf

- Braintree Local Plan 2013-2033 Local Plan S2 Maps 1 Braintree - 2 Witham Adopted 25th July 2022: https://www.braintree.gov.uk/downloads/file/3548/s2-maps-1-braintree-2-witham-adopted

- Colchester Borough Local Plan 2017 – 2033 Section 2 Adopted July 2022 Policies Maps: https://cbccrmdata.blob.core.windows.net/noteattachment/Policy%20Maps%20-%20August%202022-compressed.pdf

- Tendring District Local Plan 2013-2033 and Beyond Section 2, Adopted 25th January 2022: LOCAL PLAN SECTION 2 (tendringdc.gov.uk)

- Chelmsford Local Plan Adopted 27 May 2020 (2013 -2036): chelmsford-local-plan-may-2020-includes-a1-plans.pdf

- Epping Forest District Council Local Plan 2011-2033 Policies Map https://www.eppingforestdc.gov.uk/wp-content/uploads/2023/03/Policies-Map-200323.pdf

- Uttlesford District. The emerging Uttlesford Local Plan was not used as is not sufficiently progressed to have any site allocations.

- Place Services (2023) Tendring Colchester Borders Garden Community Development Plan Document Submission Version Plan Habitats Regulations Assessment including Appropriate Assessment: 03a17d7c5a1396c3f2b2804781945438_TCBGC_HRA_including_Appropriate_Assessment.pdf (amazonaws.com)

- A12 Chelmsford to A120 widening scheme (junctions 19 to 25) (National Highways): A12 Chelmsford to A120 widening scheme (junctions 19 to 25) - National Highways

- Essex County Council planning applications: Minerals and waste planning (essex.gov.uk)

- Chelmsford North East bypass (Essex County Council / Essex Highways): https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/chelmsford-schemes/chelmsford-north-east-bypass

Candidate Site Reference A6 - Bradwell Quarry (a)

Red/Amber

Key findings of the assessment are as follows:

- Storey's Wood (reference Bra178) Local Wildlife Sites LoWS is situated immediately beyond the southern boundary. This is an Ancient Woodland and is therefore classed as irreplaceable habitat. Upney Wood LoWS is c.216 to the east.

- The Site comprises arable fields. It contains boundary and internal hedgerows and lines of mature trees, which are Priority habitats, ditches, and ponds. There is a relatively large area of agricultural grassland in the east and there are areas of Lowland Mixed Deciduous Woodland Priority Habitat. To the south of the Wayfarers Site is an area of Lowland Mixed Deciduous Woodland Priority habitat, with a pond, and this area would be removed.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland which is an irreplaceable habitat, and a serious impact upon the LoWS and Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include changes to the hydrology of the veteran tree and ancient woodland, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in the direct loss Woodland and Hedgerow Priority habitats, loss of ponds and watercourses, grassland, and habitat for Priority farmland species.

- Any application would require demonstration that it would not affect the hydrology of the ancient and Priority habitat Woodlands, candidate veteran trees, retained Hedgerows, ditches and water bodies and appropriate buffers should be provided. It is likely that mitigation would require a substantial buffer from the ancient woodland in accordance with the Government's Advice on ancient woodlands. The water quality of the retained ponds and watercourses should not be allowed to deteriorate. Adequate and appropriate compensatory habitat should be provided for the loss of Hedgerow and Woodland Priority habitats, watercourses, ponds, other habitats and for farmland birds.

Results of the technical RAG assessment

- Site A6 is situated to the north-east of Silver End village and would be an extension to the existing Bradwell Quarry. It is currently allocated as a Reserve Site in the Essex Minerals Local Plan 2014. Minerals would be transported via existing haul roads to the existing processing facility at Bradwell Quarry.

- Storey's Wood (reference Bra178) Local Wildlife Sites LoWS is situated immediately beyond the southern boundary. This is an Ancient Woodland and is therefore classed as irreplaceable habitat. Upney Wood LoWS is c.216 to the east. Both of these woodlands are remnants of larger areas, according to the OS First Edition maps.

- The Site comprises arable fields and there is evidence of a former airfield. The Site contains boundary and internal hedgerows and lines of mature trees, which are Priority habitats, as well as ditches and ponds. There is a relatively large area of agricultural grassland in the east and there are areas of Lowland Mixed Deciduous Woodland Priority Habitat within and on the boundaries. Allshot's Farm and a car facility are within the Site boundary but would not be removed. There is a mature Oak tree to the east of Allshot's Farm, which has two confirmed veteran features therefore would not be considered a candidate veteran at this stage. There is a dilapidated house (Wayfarers Site) and this area would be lost due to the development. To the south of this building is an area of Lowland Mixed Deciduous Woodland Priority habitat, with a pond, and this area would be removed.

- Woodhouse Farm and Lowland Mixed Deciduous Woodland Priority habitat is situated between the Site and the Integrated Waste Management Facility to the west of the Site, which is currently under construction. Woodhouse Farm contains a surface water-fed moat. The extant Bradwell Quarry is situated beyond Woodhouse Farm, to the south-west, west and north of the Site. The Pro forma advises that the Site will require dewatering which will affect ground water during the extraction period. In other directions are predominately medium to large arable fields with small patches of Lowland Mixed Deciduous Woodland Priority habitat. The remaining Hedgerows are generally old and some of which contain mature trees. Most of the Site is within an Amber Great Crested Newt Risk Zone. Great Crested Newts (European Protected Species) have been found during previous developments at Bradwell Quarry. There are several ponds within the Site which would be affected.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is an irreplaceable habitat, and a serious impact upon the LoWS and Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include changes to the hydrology of the ancient woodland, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in the direct loss Woodland and Hedgerow Priority habitats, loss of ponds and watercourses, and habitat for Priority farmland species.

- Any application would require demonstration that it would not affect the hydrology of the ancient and Priority habitat Woodlands, candidate veteran trees, retained Hedgerows, ditches and water bodies and appropriate buffers should be provided. It is likely that mitigation would require a substantial buffer from the ancient woodland in accordance with the Government's Advice on ancient woodlands. The water quality of the retained ponds and watercourses should not be allowed to deteriorate. Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. Adequate and appropriate compensatory habitat should be provided for the loss of Hedgerow and Woodland Priority habitat, watercourses, ponds, other habitats and for farmland birds.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles,

should be located away from woodlands, veteran tree watercourses, and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A6 would be an extension to the existing Bradwell Quarry which covers an extensive area to the north, west and south-west of A6. In addition, other candidate sites are proposed for Bradwell Quarry including A47 and A48, as well as other proposed sites nearby, i.e. A47, A92 and A93.

Woodhouse Farm is situated to the west of the Site; between the extant Blackwater Quarry, the Integrated Waste Management Facility and Site A6. Woodhouse Farm contains a surface water-fed moat. The Pro forma advises that the Site will require dewatering which will affect ground water during the extraction period.

Site A6 could create additional cumulative hydrological and leaf smothering impacts upon the ancient woodlands and hedgerows and other local habitats, e.g. water bodies. It could create additional cumulative impacts to Priority Hedgerow and woodlands and protected Priority species through additional direct habitat loss and additional loss of connectivity, thereby further isolating the woodlands.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

All of these are the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality are possible, although it is recognised that this Site is over 1 km from the River Blackwater.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

Lowland Mixed Deciduous Woodland Priority habitat is situated between the Site and the Integrated Waste Management Facility to the west. There is currently a proposal (Nationally Significant Infrastructure Project) to increase the power output for the IWMF to up to 65MW. Site A6 could create additional air quality impacts – e.g. cumulative leaf smothering- and impacts upon the ancient woodlands, hedgerows and other local habitats, and water bodies. It could create additional cumulative impacts to Priority Hedgerow and woodlands and protected Priority species through

additional direct habitat loss and additional loss of connectivity, thereby further isolating the woodland.

Candidate Site Reference A22 – Little Bullocks Farm, (a)

Amber

Key findings of the assessment are as follows:

- Site A22 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for Hatfield Forest SSSI and National Nature Reserve (NNR), c.3.1 kilometres west and High Wood Dunmow SSSI, c.2.4 kilometres east. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Woodpasture and Parkland Priority habitat. High Woods, Dunmow SSSI which is an ancient woodland site, with sections which comprise ancient replanted woodland. Additionally, Flitch Way Local Nature Reserve (LNR) is c. 812 metres north and Elsenham Wood SSSI is c. 4.9 kilometres north. The Site is 115 metres south of an existing, active minerals site; Crump's Farm.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Canfield End Pastures LoWS is adjacent to the Site boundary on the east side. This LoWS comprises two pastures which represent a scarce Essex habitat, being damp, streamside grasslands with a diverse flora.

- Multiple mature trees are present on-Site, as are several Hedgerows Priority habitats.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. The proposals could have a moderate impact upon the natural environment including Priority habitats and species. This includes the direct impact to the nearby LoWS, River Roding watercourse, mature trees, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species. Any application would require demonstration that there would be no adverse effects and the operations would not affect the hydrology of water sensitive habitats e.g. the irreplaceable habitat and the River Roding.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Results of the technical RAG assessment

- Site A22 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for Hatfield Forest SSSI and National Nature Reserve (NNR), c.3.1 kilometres west and High Wood Dunmow SSSI, c.2.4 kilometres east. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Woodpasture and Parkland Priority habitat. High Woods, Dunmow SSSI which is

an ancient woodland site, with sections which comprise ancient replanted woodland. Additionally, Flitch Way Local Nature Reserve (LNR) is c. 812 metres north and Elsenham Wood SSSI is c. 4.9 kilometres north. The Site is 115 metres south of an existing, active minerals site; Crump's Farm.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Canfield End Pastures Ufd180 is adjacent to the Site boundary on the east side. Canfield End Pastures Ufd180 comprises two pastures which represent a scarce Essex habitat, being damp, streamside grasslands with a diverse flora. A small portion of rank grassland is present along the eastern side of the Site, adjacent to the LoWS.

- No veteran or ancient trees were identified on or adjacent to the Site. However, multiple mature trees are present, as are a number of Hedgerows Priority habitat.

- The Site comprises an irregularly shaped arable field, with a small corner of rank grassland present along the eastern boundary. The field is bordered by Hedgerows Priority habitats, mature trees and the eastern boundary borders the River Roding. Drainage ditches border the west and southern Site boundary.

- Directly north of the Site is the existing quarry, further north of the Site is the village of Little Canfield, Essex, directly east is the Canfield End Pastures Ufd180 and the River Roding. The remaining surrounding landscape is largely arable farmland. The Site falls within the Upper Roding (to Cripsey Brook) catchment.

- It is not clear from the information provided where the Site access will be located. It is considered most likely, as there are no access tracks present around the Site, that access would come via the north, through the existing quarry. A line of mature trees are present along the northern boundary.

- Within one kilometre of the Site there are several blocks of Lowland Mixed Deciduous Woodland and Traditional Orchard Priority habitats. The nearest block of Lowland Mixed Deciduous Woodland Priority habitat is located just south of the Site.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. The proposals could have a major impact upon the natural environment including Priority habitats and species. This includes the direct impact to the nearby LoWS, River Roding watercourse, mature trees, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species.

- The Site could have a moderate impact upon the adjacent Local Wildlife Site. A number of mature trees could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the adjacent Lowland Mixed Deciduous Woodland habitat, grassland, and river habitat e.g. bats, Hazel Dormouse, Otter, and Water Vole could be impacted. It

could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that the operations would not affect the hydrology of the River Roding.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the LoWS, and the nearby watercourse; prevention of deterioration of water quality to the River Roding and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the 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 may be required for the loss of any habitat within the LoWS, and loss of habitat for Priority farmland species.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

The Site would be worked as an extension to existing active mineral site of Crumps Farm Quarry with Highwood Quarry to the north east. Other candidate Sites (A77 and A23) would also be nearby.

The Site could create additional loss of, and disturbance to the nearby LoWS, River Roding watercourse, Lowland Mixed Deciduous Woodland Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The emerging Uttlesford Local Plan has not progressed sufficiently so no site allocations are known at this stage which could result in cumulative impacts on the natural environment.

Candidate Site Reference A23 – Little Bullocks Farm, (b)

Red/Amber

Key findings of the assessment are as follows:

- Site A23 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for Hatfield Forest SSSI and National Nature Reserve (NNR), c.2.7 kilometres west and High Wood Dunmow SSSI, c.2.5 kilometres east. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Woodpasture and Parkland Priority habitat. High Woods, Dunmow SSSI which is an ancient woodland site, with sections which comprise secondary woodland. Additionally, Flitch Way Local Nature Reserve (LNR) is c. 220 metres north and Elsenham Wood SSSI is c. 4.3 kilometres north.

- There are five Local Wildlife Sites (LoWS) within one kilometre. Runnel's Hey is adjacent to the Site boundary on the northwest side. This LoWS is listed as ancient woodland, which is classed as irreplaceable habitat. Multiple mature trees are present within the bordering line of trees along the southeast side.

- The Site comprises two fields, one which is arable in active crop rotation, whilst the other field, which is adjacent the ancient woodland, comprises modified grassland. Wet drainage ditches border the west and eastern boundaries. A line of mature broadleaved trees divides the Site in two centrally. Site access is not clear from the plans provided. However, the Site adjoins directly to the neighbouring active Crumps Farm quarry and waste site. The eastern boundary is partially bordered by a line of mature, broadleaved trees and a wet drainage ditch. The River Roding is 500 metres east of the Site, the bordering drainage ditches eventually lead in to the River Roding. There is a haul road proposed on the plan connecting A22 and A23, which would cross a ditch that feeds into the River Roding. Therefore, there are a number of potential pollution pathways between the Site and River Roding, for water quality.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. The Site could have a major impact upon the adjacent ancient woodland (irreplaceable habitat). The proposals could have a serious impact upon the natural environment including local designations and Priority habitats and species. This includes the direct and indirect impacts to the nearby LoWS, mature trees, as well as potential hydrological impacts to retained habitats. These trees could be affected directly and indirectly; e.g. through direct habitat loss, changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the adjacent band of scrub and grassland habitat e.g. bats, Hazel Dormouse and reptiles could be impacted. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse impacts to the adjacent ancient woodland (irreplaceable habitat) and that the operations would not affect the hydrology of the ancient woodland or the River

Roding. Mitigation may include - but not be limited to - substantial buffers between the Site and the LoWS and ancient woodland and the nearby watercourses; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the 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 may be required for the loss of any habitat within the LoWS, and loss of habitat for Priority farmland species.

Results of the technical RAG assessment

- Site A23 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for Hatfield Forest SSSI and National Nature Reserve (NNR), c.2.7 kilometres west and High Wood Dunmow SSSI, c.2.5 kilometres east. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Wood-pasture and Parkland Priority habitat. High Woods, Dunmow SSSI which is an ancient woodland site, with sections which comprise secondary woodland. Additionally, Flitch Way Local Nature Reserve (LNR) is c. 220 metres north and Elsenham Wood SSSI is c. 4.3 kilometres north.

- There are five Local Wildlife Sites (LoWS) within one kilometre. Runnel's Hey Ufd172 is adjacent to the Site boundary on the northwest side. Runnel's Hey LoWS is listed as ancient woodland, which is classed as irreplaceable habitat. Multiple mature trees are present within the bordering line of trees along the southeast side.

- The Site comprises two fields, one which is arable in active crop rotation, whilst the other field, which is adjacent the ancient woodland comprises modified grassland. Wet drainage ditches border the west and eastern boundaries. A line of mature broadleaved trees divides the Site in two centrally. The Site is adjacent to an existing, active minerals and waste site, Crumps Farm. Restoration would include inert waste. Site access is not clear from the plan provided (Indicative Site Details) and so is not assessed. However, the eastern boundary with the extant Crumps Farm site is partially bordered by a line of mature, broadleaved trees and a wet drainage ditch. There is a haul road proposed on the plan connecting A22 and A23, which would cross farmland not believed to be within any extant planning permission. This would require crossing a ditch that feeds into the River Roding.

- North of the Site is the village of Little Canfield; directly east is the existing quarry site and south is largely arable landscape. The River Roding is 500 metres east of the Site, the bordering drainage ditches eventually lead in to the River Roding, thereby creating further potential pollution pathways to the River, for water quality. The Site falls within the Upper Roding (to Cripsey Brook) catchment. Within one kilometre of the Site there are several small blocks of Lowland Mixed Deciduous Woodland and Traditional Orchard Priority habitats. The nearest block of Mixed Deciduous Woodland Priority habitat is located just north of the Site, this woodland is listed as Runnel's Hey Ufd172 LoWS and ancient woodland,

irreplaceable habitat. The Site is partly within an Amber Risk Zone for Great Crested Newts.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. The Site could have a major impact upon the adjacent ancient woodland (irreplaceable habitat). The proposals could have a serious impact upon the natural environment including local designations and Priority habitats and species. This includes the direct and indirect impacts to the nearby LoWS, mature trees, as well as potential hydrological impacts to retained habitats. These trees could be affected directly and indirectly; e.g. through direct habitat loss, changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the adjacent band of scrub and grassland habitat e.g. bats, Hazel Dormouse and reptiles could be impacted. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse impacts to the adjacent ancient woodland (irreplaceable habitat) and that the operations would not affect the hydrology of the ancient woodland or the River Roding.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the LoWS and ancient woodland -in accordance with the Government's Advice on ancient woodlands -and the nearby watercourses; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses. Surface water run-off from the Site should not be allowed to enter directly into the 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 may be required for the loss of any habitat within the LoWS, and loss of habitat for Priority farmland species.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would be an extension to existing active mineral site of Crumps Farm Quarry and waste site, with Highwood Quarry 2km to the northeast. Other candidate Sites (A77 and A22) would also be nearby.

The Site could create additional loss of, and disturbance to, ancient woodland/ irreplaceable habitat, Lowland Mixed Deciduous Woodland Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

There would be a greater potential to alter the water table of Runnel's Hey LoWS woodland in the long-term which is a ground water dependent habitat. There would be a greater potential to adversely affect the water quality and quantity of the River Roding and its associated habitats.

Advanced habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The emerging Uttlesford Local Plan has not progressed sufficiently so no site allocations are known at this stage which could result in cumulative impacts on the natural environment.

Candidate Site Reference A31 – Maldon Road

Amber

Key findings of the assessment are as follows:

- The Site is within the Site of Special Scientific Interest Impact Risk Zone for Abberton Reservoir Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. There are also potential pollution pathways – e.g. water quality - between the proposed mineral Site and international wildlife sites that would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- A number of Priority habitat hedgerows and three Lowland Mixed Deciduous Woodland Priority habitat adjacent to the boundary could be affected directly and indirectly. Two of these woodlands may be partly ancient. The internal Hedgerow Priority habitat may be lost, as well as a watercourse and associated Lowland Mixed Deciduous Woodland Priority habitat.

- The Site is graded Amber because ecological impacts are likely to be moderate and likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon international and national designations and would be likely to require medium levels of mitigation. Moderate impacts are anticipated upon Priority habitats due to the loss of several Hedgerows, the internal water course and associated woodland and potential impacts to adjacent woodland Priority habitat. The Site could have major impacts upon irreplaceable habitats if the adjacent woodlands are found to be ancient; in which case the Site would classified as Red/Amber.

- Key mitigation is likely to include prevention of hydrological changes to Woodlands; substantial buffers between the Quarry and the Woodlands and Hedgerows; and prevention of deterioration of water quality to the watercourse. Adequate and appropriate compensation may be required for the loss of Hedgerows, the watercourse, and losses of habitat for Priority farmland species.

Results of the technical RAG assessment

- Site A31 is within the Impact Risk Zone of Abberton Reservoir Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site which is located approximately 2.5 km south-east of the Site. Intervening land use is predominantly arable fields with hedgerows and the village of Birch. A small watercourse dissects the Site, which joins the Roman River; there are several statutory and non-statutory sites adjacent to the Roman River downstream. It eventually feeds into the Colne Estuary c.14km downstream which contains the Colne Estuary SSSI, SPA and Ramsar site and Essex Estuaries Special Area of Conservation (SAC). The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the Roman River and is c. 8km at its closest point. The watercourse on-site creates a potential pollution pathway between A31 and these statutory sites, with respect to water quality and water quantity.

- The Site itself comprises arable fields with boundary and internal hedgerows and a watercourse running through it. The hedgerows are Priority habitat. Hedgerows and Lowland Mixed Deciduous Woodland Priority habitats are also found next to the watercourse, including some mature trees (Oak and Willow) as well as some plantation woodland. There is a mature Oak located in the north of the Site along the watercourse which couldn't be properly accessed and so there is insufficient evidence to class it as a veteran or candidate specimen; however, there is potential for other features to be present if full access is obtained. It is anticipated, using details from the Proforma, information from the current Essex Minerals Local Plan and the longitudinal shape of the Site that the watercourse on-site and internal habitats – including mature trees- would require removal to facilitate extraction.

- Three small Lowland Mixed Deciduous Woodland Priority habitats border the southern boundary. The whole of one of these and part of the other is found on the First Edition OS map indicating that they are old and possibly ancient. This would require further investigation at Development Management stage. The semi-mature Ash tree, located on the south-eastern boundary of the Site (on the northern edge of the eastern most woodland) is a candidate veteran tree, although it is likely that this tree will degrade further and lose these features and therefore not become a future veteran.

- This Site would be an extension to the extant Birch Quarry -which is partly active and partly restored – located to the north of the Site and which is separated from the Site by Maldon Road. Processing would continue on the extant Birch Quarry site and would be served by a conveyor which would be located beneath Maldon Road which follows its northern boundary.

- There are six Local Wildlife Sites within one kilometre. Hedgerows continue off-site bordering predominantly medium-size arable fields and part of a wider network of habitat connectivity. Deciduous Woodland Priority habitat can also be found at 150m to 400m from the Site. The Site is partly within the Amber Great Crested Newt Risk Zone.

- The Site is graded Amber because ecological impacts are likely to be moderate and likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon international and national designations and is likely to require medium levels of mitigation. The Site could have moderate impacts upon irreplaceable habitats. Furthermore, moderate impacts are anticipated upon Priority habitats due to the loss of Hedgerow Priority habitat and watercourse running through the Site. It could result in loss of habitat for Priority farmland species. Nearby off-site habitats – particularly the Lowland Mixed Deciduous Woodland Priority habitats (and possibly ancient woodland) could also be affected through changes to the hydrology; smothering of leaves by dust; and disturbance e.g. by noise and lighting.

- The Site could have major impacts upon irreplaceable habitats if the adjacent woodlands are found to be ancient. In which case the Site would re-classified as Red/Amber.

- Any application would require demonstration that it would not affect the hydrology of the woodlands, particularly any that may be ancient woodland (irreplaceable habitat), and tributaries of the Roman River Mitigation may include – but not be limited to – appropriate and potentially substantial buffers between the Site and the woodlands and hedgerows; prevention of deterioration of water quality to the River and its tributary watercourse; Appropriate compensatory habitat for the watercourse; ecological improvements to the re-placed watercourse post extraction; and compensation for loss of Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into the watercourse.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

There is potential for cumulative impacts as there are a number of candidate and existing quarries within 3km of Site A31. The extant Birch Quarry is located to the north-west immediately the other side of Maldon Road. Proposed sites A61 and A62 are less than 1km to the north. Site A95 is c.2.8km and the existing Colchester Quarry complex is c.2.5km to the north. Cumulatively this creates a large expanse of quarrying, though some areas are already known to be restored. Inclusion of all of these candidate sites may require consideration such as coordinated sequenced approach of working across the Sites and greater levels of mitigation and enhancement during operations and through restoration schemes.

There are many potential cumulative impacts to the water quality of the Roman River and associated habitats and species.

The Site could create additional loss of, and disturbance to, Priority species farmland birds in the area.

Advanced habitat creation, working the nearby candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to Abberton Reservoir SPA and Ramsar site; Colne Estuary SPA and Ramsar site and Essex Estuaries SAC, will need to be considered through a plan level Habitats Regulations Assessment for the MLP.

Other cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is potential for in combination impacts for water quality and quantity from housing development within the Roman River Catchment Area predicted from the Colchester Section 2 Local Plan (Adopted July 2022)

There is also potential for in combination impacts for water quality and quantity from existing Waste sites within the Roman River Catchment Area as approved under the Essex and Southend-on-Sea Waste Local Plan (2017).

Candidate Site Reference A47 – Bradwell – Monk's Farm

Amber/Green

Key findings of the assessment are as follows:

- Site A47 comprises a number of arable fields with numerous boundary and internal Hedgerows and lines of mature trees and associated ditches, which are Priority habitats. There are two small areas of woodlands adjacent to the boundaries- one of which is mixed plantation- and some ponds on the boundaries. Pantling's Lane border of the Site is an historic lane bordered by Hedgerows and Lowland Mixed Deciduous Woodland Priority habitat.

- There are two Local Wildlife Sites (LoWS) within 500 m of the Site. Upney Wood LoWS is c.355 metres to the west and is an ancient woodland, and therefore irreplaceable habitat. Coggeshall Hall Farm LoWS is c.425m metres east of the Site; this LoWS is a river valley site and the adjacent sections of the River Blackwater are also included.

- 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.

- 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.

- 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.

Results of the technical RAG assessment

- Site A47 would be an extension to the existing Bradwell Quarry. It is currently allocated as a Reserve Site (Site 8) in the Essex Minerals Local Plan 2014.

- This Site comprises a number of arable fields with numerous boundary and internal Hedgerows and lines of mature trees and associated (predominantly dry) ditches, which are Priority habitats. There are two small areas of woodlands adjacent to the boundaries- one of which is mixed plantation- and some ponds on the boundaries. Parts of the Site are within Amber Great Crested Newt Risk Zones. Pantling's Lane is an historic lane bordered by Hedgerows and Lowland Mixed Deciduous Woodland Priority habitat. The eastern end of the Lane -with poorer quality hedgerows would be situated within the Site. At the western end of

the Site, the northern boundary follows Pantling's Lane. A Brown Hare was present, which is a Priority species.

- The Site is surrounded by predominantly arable fields with hedgerows and small patches of woodlands, with clusters of farm buildings and small hamlets. It is c.700 m west of the River Blackwater at its closest point. There is no visible surface water connection to the river.

- There are two Local Wildlife Sites (LoWS) within 500 m of the Site. Upney Wood LoWS (reference Bra 190) is c.355 metres to the west and is an ancient woodland, and therefore irreplaceable habitat. Coggeshall Hall Farm LoWS (reference Bra 225) is c.425m metres east of the Site; this LoWS is a river valley site. and the adjacent sections of the River Blackwater are also included.

- Minerals would be transported via an extension of a haul road to the existing processing facility at Bradwell Quarry. The access route 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. Access for private and support vehicles to the Site A8 contractors' compound would be via Pantlings Lane and Cuthedge Lane. Dewatering would be required which could have an impact on the surrounding habitats.

- 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 total loss of a number of Hedgerows 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 retained habitats, buffers between the Quarry and the Woodlands and Hedgerows; 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 may be required for the loss of Hedgerows, watercourses, and loss of habitat for Priority farmland species.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses, and other existing habitats, and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A47 would be an extension to the existing Bradwell Quarry which covers an extensive area to the north and west. This includes Site A7 which lies directly to the north; it is permitted under ESS/12/20/BTE but has not yet been implemented. In addition, other candidate sites are proposed for Bradwell Quarry including A6 and A48, as well as other proposed sites nearby, i.e. A89 (Covenbrooke Hall Farm), A92 (Land at Pattiswick Hall Farm - Small Site) and A93 (Land at Pattiswick Hall Farm - Full Site).

The loss of all internal hedgerows and watercourse would create additional impacts upon the old Hedgerow and ditch network of the area -and associated ponds -, including Pantling's Lane which is already due to be extracted on its northern side. It could also create additional cumulative hydrological changes to habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

All of the above listed sites are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Site is less than 900 metres from the Integrated Waste Management Facility to the southwest. Site A47 could create additional air quality impacts, e.g. cumulative leaf smothering, to ancient woodlands, hedgerows and other local habitats and water bodies in the surrounding area.

Candidate Site Reference A48 – Bradwell – Grange Farm

Red/Amber

Key findings of the assessment are as follows:

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

- 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.

- 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.

- 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.

Results of the technical RAG assessment

- There is a veteran Oak tree located just beyond the northern boundary. Veteran trees are irreplaceable habitat.

- The closest Local Wildlife Site (LoWS) is Blackwater Plantation LoWS (Bra186) which is 80m to the north, downhill in the Blackwater valley. This is an extensive

White Willow plantation which forms an important wildlife corridor along the Blackwater valley and comprises a variety of valuable of habitats. There are a number of other designated sites downriver, which are designated for their riparian/ valley habitats; the closest of which is Coggeshall Hall Farm LoWS (reference Bra 225). Upney Wood LoWS (reference Bra 190) is c.355 metres to the south and is an ancient woodland, and therefore irreplaceable habitat. Brockwell Meadows Local Nature Reserve is c.3 km downstream in Kelvedon.

- Site A48 would be an extension to the existing Bradwell Quarry. This Site comprises a number of arable fields with numerous boundary and internal Hedgerows and lines of mature trees and associated (predominantly dry) ditches, which are Priority habitats. There is a patch of deciduous plantation woodland and two small clusters of mature trees (one of which may have a pond) within the Site which could not be accessed. Seven scattered ponds are present that are mostly connected to field ditches. Brown Hare, Common Cuckoo, Skylark and Whitethroat are also present, which are Priority species. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is surrounded by predominantly arable fields with hedgerows and small patches of woodlands, with clusters of farm buildings, a small hamlet and Coggeshall to the northeast. The extant Blackwater Quarry is south-west and south of the Site. The northern boundary of the Site runs roughly parallel with the River Blackwater which is less than 200m from it at its closest point. The river also turns southwards and comes within 300 m of the Site's eastern boundary. There is hydrological and habitat connectivity with the River via watercourses and hedgerows. There is an area to the west of the Site which is identified as Open Mosaic Habitat on Previously Developed Land on the Natural England Priority habitat mapping information. However, this is a former quarry site which has now been restored to grassland, broadleaved woodland plantation, and a water body.

- Minerals would be transported via the extension of a haul road to the existing processing facility at Bradwell Quarry, the location of which is not provided. Dewatering would be required which could have an impact on the surrounding habitats.

- 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 associated its 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.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses, and other existing habitats, and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A48 would be an extension to the existing Bradwell Quarry which covers an extensive area to the west and south. This includes Site A7 which lies directly to the south; it is permitted under ESS/12/20/BTE but has not yet been implemented. In addition, other candidate sites are proposed for Bradwell Quarry including A47 and A6, as well as other proposed Sites nearby, i.e. A6, A92 and A93.

All of these are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Furthermore, a number of candidate sites associated with Colemans Quarry are proposed along the River Blackwater, further downriver. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

The loss of all internal hedgerows and watercourse would create additional impacts upon the old Hedgerow and ditch network of the area -and associated ponds. It could also create additional cumulative hydrological changes to habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Site is c.1.7km east of the Integrated Waste Management Facility. Site A48 could create additional air quality impacts, e.g. cumulative leaf smothering, to ancient

woodlands, hedgerows and other local habitats and water bodies in the surrounding area.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12 between Colchester and Chelmsford. This does not yet have consent. There is potential for the Site to create additional impacts to species using the river corridor and to water quality.

Candidate Site Reference A49 - Colemans Farm - Hill Broad Farm Full Site

Amber

Key findings of the assessment are as follows:

- The River Blackwater follows the length of the western boundary and there is another watercourse within the Site which feeds into the River which is likely to be removed. These create a potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on low-lying land and comprises several arable fields; an area of Lowland Mixed Deciduous Woodland Priority habitat is located within the Site, to the west of the River Blackwater.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect the hydrology of on-site and off-site habitats. The proposals are also just over 100 metres from Braxted Park Local Wildlife Site. Substantial buffers are likely to be required near to the Lowland Mixed Deciduous Woodland Priority habitat, River Blackwater and other watercourses and their water quality must not be affected by the proposals. Affected Hedgerows and watercourses should be adequately and appropriately compensated.

Results of the technical RAG assessment

- The Site is within the minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone for Tiptree Heath SSSI which is 2.8km northeast of the Site. In addition, the adjacent River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation approximately 12km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the River Blackwater and is c. 9.5km at its closest point. The Site is also c.2.2km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A51 and these designated sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.115m to the north of the Site on rising land. Braxted Park is an extensive mosaic of semi-improved meadows, broadleaved woodland, parkland, open water and beds of Common Reed and sedges with several veteran Oak trees and networks of good hedgerows. The

intervening land is predominantly arable. West Hall Wood Complex (Ma48) LoWS is 530m to the north.

- The Site includes the area of Site A51 and additional land to the east of this which is predominantly arable.

- The Site itself is situated on relatively flat low-lying land in the Blackwater Valley; the groundwater lies approximately 2m below existing surface levels and the Site will involve dewatering and filling with inert waste. The Site comprise several fields, mostly bounded by trees and hedgerows, with mature trees in places. The River Blackwater runs along the western boundary with a line of trees and scrub running along much of its edge, as well as riparian habitats, nettles and Common Reed, and floodplain grassland. There is a ditch with hedgerow in the centre of the Site, which feeds into the River Blackwater; these would be removed. There is another internal hedgerow (Priority habitat) which would also need to be removed. There is an area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, near the River, and an area of broadleaved deciduous plantation woodland both of which would be retained.

- Further areas of Lowland Mixed Deciduous Woodland Priority habitat are situated on the northern and southern boundaries and numerous other areas of this Priority habitat and broadleaved deciduous plantation woodlands are found in the vicinity and within 1km of the Site. Two small patches of Traditional Orchard Priority habitat also present within 1km. Nero Road is found in the centre of the Site and Lea Lane on part of the eastern boundary; these are minor roads. Stables and paddocks are also on this boundary. The extant site of Colemans Farm Quarry is on the other side of the River Blackwater. Some of the Quarry is active; the restored Colemans Reservoir is 65 metres to the east of the Site. The Site is within the Amber Great Crested Newt Risk Zone.

- The A12 is c.800 metres northeast of the Site. Braxted Road, industrial buildings and a residential property with a solar array are located just beyond the northern boundary, between the Site and Braxted Park LoWS. The materials would need to be transported across the River Blackwater in order to be processed, either by vehicles over a new bridge or on a field conveyor. Options for this would depend on whether or not the A12 widening project goes ahead, but the route options are not shown on a plan and so impacts are unclear.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the River Blackwater and Priority habitats and species and a moderate impact upon locally designated sites. This includes impacts to water quantity of the River Blackwater and woodlands; water quality of the River and other watercourses and disturbance to protected and Priority species using the River corridor e.g. otters and bats. The Site's groundwater may be affected, which in turn could affect on-site and off-site water dependent riparian and Lowland Mixed Deciduous Woodland Priority habitats. e.g. through changes to the hydrology. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the woodlands, the River Blackwater and its associated habitats, trees, and other boundary habitats. Mitigation may include - but not be limited to - substantial buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses. Affected hedgerows and watercourses should be compensated.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and south of A49 and extending on both sides of the River Blackwater.

The Site proposer has provided a spreadsheet entitled ‘Colemans Quarry working sequencing- extensions promoted under Essex MLP.’ This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for many years.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of

Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The proposed allocation has been promoted to Maldon District Council as part of their recent call for sites exercise, in the course of the review of the Council's Local Plan; the Local Plan process is at an early stage. Site A49 could be brought forward to align with developments in this area and this should be considered in scheduling the sequencing of the Colemans Quarry candidate sites.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at Colemans Quarry and the land the west of A49. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A50 - Colemans Farm - Eastern Extension (Appleford Farm)

Amber

Key findings of the assessment are as follows:

- The River Blackwater follows one boundary and its tributaries follow two other boundaries. There are potential pollution pathways – e.g. water quality - between the proposed mineral Site and international wildlife sites that would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site is situated on low-lying land and comprises two arable fields; an area of Lowland Mixed Deciduous Woodland Priority habitat is located in the centre of one of these fields. The woodland would be lost by these proposals.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect on-site and off-site habitats. Substantial buffers are likely to be required near to the River Blackwater, other watercourses and central Woodland and their water quality must not be affected by the proposals.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest Impact Risk Zone. However, the River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation about 13km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extend up the River Blackwater and is c.10.5km at its closest point. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A50 and these designated sites, with respect to water quality and water quantity.

- Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.220m to the east of the Site on rising land on the opposite side of the River Blackwater. Braxted Park is an extensive mosaic of semi-improved meadows, broadleaved woodland, parkland, open water and beds of Common Reed and sedges with several veteran Oak trees and networks of good hedgerows. The Site is also c.2.7km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site.

- The Site itself is situated on relatively flat low-lying land at the bottom of the Blackwater Valley; the groundwater lies approximately 2m below existing surface levels and the Site will involve dewatering and filling with inert waste. It comprises two arable fields mostly bounded by trees and hedgerows, with mature trees in places, and the River Blackwater runs along the south eastern boundary which has a line of trees and scrub running along most of its western edge. A tributary of the River Blackwater follows the northern boundary, which is also lined with

trees and scrub. A ditch also follows the southern boundary and feeds into the River Blackwater. There is an area of Lowland Mixed Deciduous Woodland Priority habitat with a pond in the centre of the southern field. Part of this woodland is on the OS First Edition maps and so is potentially partly ancient woodland, which is an irreplaceable habitat. This would require further investigation at Development Management stage.

- Braxted Road follows the southern boundary and beyond this to the south is Colemans Reservoir, arable fields and the extant Colemans Quarry. To the south-east and east of the Site is the River Blackwater and associated low-lying habitats including floodplain meadow and strips of broadleaved deciduous plantation woodlands. There are a few scattered houses and farm buildings. 350 metres to the west is the A12 which creates a substantial barrier to connectivity for species. To the north of the Site are arable fields and the River Blackwater and associated habitats continue. One patch of Traditional Orchard Priority habitat is also present within 1km. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the Broadleaved Deciduous Woodland Priority habitat in the centre of it by extracting minerals in this location. This Woodland may be ancient and therefore irreplaceable habitat. The Site could have a major impact upon the River Blackwater and moderate impacts upon locally designated sites and other Priority habitats and species. This includes impacts to water quantity of the River Blackwater and woodlands; water quality to the River and other watercourses; and disturbance to protected and Priority species using the River corridor e.g. Otters and bats. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Nearby off-site Lowland Mixed Deciduous Woodland Priority habitat and ‘Broadleaved deciduous plantation woodland and floodplain grassland Priority habitats could also be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the woodlands, the River Blackwater and its associated habitats, trees, and other boundary habitats. Mitigation may include - but not be limited to - substantial buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses. Additional consideration to the woodland is required and if it is irreplaceable habitat, losses are not permitted within the Government’s BNG Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

This Site is immediately to the north of the existing Colemans Quarry. In addition, a number of other Candidate sites are proposed along the river corridor to the north of A50 and to the south of it and extending on the other side of the River Blackwater. A single planning consent would be sought to facilitate the working of the sand and gravel from this Site and Site A84.

The Site proposer has provided a spreadsheet entitled 'Colemans Quarry working sequencing- extensions promoted under Essex MLP.' This shows how the candidate sites would be phased between 2027 to 2044.

There are a number potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for the lifetime of the Site.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at Colemans Quarry and land the west of A50. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A51 – Colemans Farm – North extension (Hill Broad Farm)

Amber

Key findings of the assessment are as follows:

- The River Blackwater follows the length of the western boundary and there is another watercourse within the Site which feeds into the River which is likely to be removed. These create a potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on low-lying land and comprises two arable fields; an area of Lowland Mixed Deciduous Woodland Priority habitat is located within the Site, to the west of the River Blackwater.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect the hydrology of on-site and off-site habitats. Substantial buffers are likely to be required near to the Lowland Mixed Deciduous Woodland Priority habitat, River Blackwater and other watercourses and their water quality must not be affected by the proposals. Affected Hedgerows and watercourses should be adequately and appropriately compensated.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone. However, the adjacent River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation approximately 12km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the River Blackwater and is c. 9.5km at its closest point. The Site is also c.2.2km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A51 and these designated sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.220m to the northeast of the Site on rising land. Braxted Park is an extensive mosaic of semi-improved meadows, broadleaved woodland, parkland, open water and beds of Common Reed and sedges with several veteran Oak trees and networks of good hedgerows. West Hall Wood Complex (Ma48) LoWS is 530m to the north.

- The Site itself is situated on relatively flat low-lying land in the Blackwater Valley; the groundwater lies approximately 2m below existing surface levels and the Site will involve dewatering and filling with inert waste. The Site comprise two fields, mostly bounded by trees and hedgerows, with mature trees in places. The River Blackwater runs along the western boundary with a line of trees, scrub and hedgerows running along much of its edge, as well as riparian habitats, nettles and Common Reed, and floodplain grassland. There is a ditch and hedgerow in the centre of the Site, which feeds into the River Blackwater; these would be removed. There is an area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, near the River, and an area of broadleaved deciduous plantation woodland both of which would be retained.

- Further areas of Lowland Mixed Deciduous Woodland Priority habitat are situated on the northern and southern boundaries and numerous other areas of this Priority habitat and broadleaved deciduous plantation woodlands are found in the vicinity and within 1km of the Site. Two small patches of Traditional Orchard Priority habitat also present within 1km. Nero Road is found on the eastern boundary; this is a minor road. The extant site of Colemans Farm Quarry is on the other side of the River Blackwater. Some of the Quarry is active; the restored Colemans Reservoir is 65 metres to the east of the Site. The Site is within the Amber Great Crested Newt Risk Zone.

- The A12 is c.800 metres northeast of the Site. Braxted Road, industrial buildings and a residential property with a solar array are located just beyond the northeast boundary, between the Site and Braxted Park LoWS. The materials would need to be transported across the River Blackwater in order to be processed, either by vehicles over a new bridge or on a field conveyor. Options for this would depend on whether or not the A12 widening project goes ahead, but the route options are not shown on a plan and so impacts are unclear.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the River Blackwater and upon local designations and other Priority habitats and species. This includes impacts to water quantity of the River Blackwater and woodlands; water quality of the River and other watercourses and disturbance to protected and Priority species using the River corridor e.g. otters and bats. The Site's groundwater may be affected, which in turn could affect on-site and off-site water dependent riparian and Lowland Mixed Deciduous Woodland Priority habitats. e.g. through changes to the hydrology. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the woodlands, the River Blackwater and its associated habitats, trees, and other boundary habitats. Mitigation may include - but not be limited to - substantial buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory

habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses. Affected hedgerows and watercourses should be compensated.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and south of A51 and extending on both sides of the River Blackwater.

The Site proposer has provided a spreadsheet entitled 'Colemans Quarry working sequencing- extensions promoted under Essex MLP.' This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for many years.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly on the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The proposed allocation has been promoted to Maldon District Council as part of their recent call for sites exercise, in the course of the review of the Council's Local Plan; the Local Plan process is at an early stage. Site A51 could be brought forward to align with developments in this area and this should be considered in scheduling the sequencing of the Colemans Quarry candidate sites.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at Colemans Quarry and the land the west of A51. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A52 – Colemans Farm – Southern Extension

Amber

Key findings of the assessment are as follows:

- The River Blackwater is close to the Site's eastern boundary creating a potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on low-lying land and comprises an arable field; an area of Lowland Mixed Deciduous Woodland Priority habitat is located immediately south of the Site.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect the hydrology of on-site and off-site habitats. Substantial buffers are likely to be required near to the Lowland Mixed Deciduous Woodland Priority habitat and River Blackwater and water quality must not be affected by the proposals. The affected hedgerows should be compensated.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone. However, the adjacent River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation approximately 12km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the River Blackwater and is c. 9.5km at its closest point. The Site is also c.2.2km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A52 and these statutory sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.680m to the northeast of the Site on rising land. Braxted Park is an extensive mosaic of semi-improved meadows, broadleaved woodland, parkland, open water and beds of Common Reed and sedges with several veteran Oak trees and networks of good hedgerows.

- The Site itself is situated on relatively flat low-lying land in the Blackwater Valley; it will require dewatering and filling with inert waste.

- The Site is relatively small, comprising one arable field. There is a hedgerow – which is Priority habitat - and line of non-native trees within the Site, near the northern boundary which would need to be removed to facilitate the development. There are areas of Lowland Mixed Deciduous Woodland Priority habitat south of the Site and east of the River, some of which is broadleaved deciduous plantation woodland. The Site is situated between the extant Colemans Farm Quarry and arable fields to the west and the River Blackwater near to the eastern boundary with a line of trees and scrub running along much of its edge, as well as riparian habitats, Common Reeds, and floodplain grassland with scattered plantation willow trees. The Proforma envisages that Site A52 would follow on straight after the last phase of the existing Quarry site.

- Further areas of Lowland Mixed Deciduous Woodland Priority habitat and broadleaved deciduous plantation woodlands are found in the vicinity and within 1km of the Site. Two small patches of Traditional Orchard Priority habitat also present within 1km.

- The A12 is c750 metres east of the Site. The materials would need to be transported in order to be processed either at the existing processing or plant or a new plant in Site A50 if the A12 widening project goes ahead. The route options are not shown on a plan and so impacts are unclear.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the River Blackwater and upon local designations and other Priority habitats and species. This includes impacts to water quantity of the River Blackwater and woodlands; water quality of the River and other watercourses and disturbance to protected and Priority species using the River corridor e.g. otters and bats. The Site's groundwater may be affected, which in turn could affect on-site and off-site water dependent riparian and Lowland Mixed Deciduous Woodland Priority habitats. e.g. through changes to the hydrology. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the woodlands, the River Blackwater and its associated habitats, trees, and other boundary habitats. Mitigation may include - but not be limited to - substantial buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds and removed hedgerows. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and south of A52 and extending on both sides of the River Blackwater.

The Site proposer has provided a spreadsheet entitled 'Colemans Quarry working sequencing- extensions promoted under Essex MLP.' This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for the lifetime of the Site.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at the existing Colemans Farm Quarry west of A52. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area

Candidate Site Reference A54 – Whiteheads

Amber

Key findings of the assessment are as follows:

- Site A54 comprises a single arable field bounded by hedgerows and is adjacent to a large farm reservoir. The haul road would pass between the reservoir and a narrow strip of Lowland Mixed Deciduous Woodland Priority habitat woodland with a boundary hedgerow, before joining the B1018. The Site's boundary hedgerows include standard mature trees and (dry) ditches and are Priority habitat. There is a strip of Lowland Mixed Deciduous Woodland Priority habitat on the southern boundary, some of which falls within the Site boundary including a pond and two trees protruding into the field.

- One of the trees protruding into the field is a candidate veteran tree because it has some of the required veteran features and could develop further features through the life cycle that were not captured at the time of the survey. There are at least two other candidate veteran trees on or near to the Site boundary. Veteran trees are an irreplaceable habitat.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have moderate impacts upon irreplaceable habitats due to the presence of candidate veteran trees. The Site could have a moderate impact upon the natural environment particularly the adjacent Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats, upon Priority species and the large adjacent waterbody.

- Any application would require demonstration that it would not affect the hydrology of the woodlands, candidate veteran trees, Hedgerows, ditches, and waterbody, and appropriate and buffers should be provided; the water quality of the waterbody should not be allowed to deteriorate. Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Results of the technical RAG assessment

- Site A54 comprises a single arable field bounded by hedgerows and is adjacent to a large farm reservoir. The haul road would pass between the reservoir and a narrow strip of Lowland Mixed Deciduous Woodland Priority habitat woodland, before joining the B1018.

- Tarecroft Wood (refence Bra172) Local Wildlife Site (LoWS) is c.550m east of the Site and Rivenhall Thicks (refence Bra169) LoWS is 570m to the north-east. The intervening landscape is arable and the LoWS are both connected to the Site via boundary hedgerows.

- The Site's boundary hedgerows include standard mature trees and (dry) ditches and are Priority habitat. There are two strips of Lowland Mixed Deciduous Woodland Priority habitat, with boundary Hedgerows, on the southern boundary,

some of which falls within the Site boundary. To the north of the eastern woodland -within the Site- is a pond and two trees protrude into the field.

- One of the trees protruding into the field is a candidate veteran tree because it has some of the required veteran features and could develop further features through the life cycle that were not captured at the time of the survey. Veteran trees are an irreplaceable habitat. There are at least two other candidate veteran trees on the Site.

- Brown hares are present in the field; these are a Priority species.

- The surrounding landscape is predominantly arable and there are several patches of Lowland Mixed Deciduous Woodland Priority habitat within one kilometre. The Site is approximately 500 m north-west of Witham. The River Brain is c. 500 m to the west of the haul road, on the other side of the B1018 and railway line. The Site is partly within the Amber Risk Zone for Great Crested Newts.

- The Site is graded Amber because ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats due to the presence of candidate veteran trees. The Site could have a moderate impact upon the natural environment including Priority habitats and species and the large adjacent waterbody. It could result in loss of habitat for Priority farmland species. Nearby off-site habitats – particularly the Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats could be affected through changes to the hydrology; smothering of leaves by dust; and disturbance e.g. by noise and lighting.

- Any application would require demonstration that it would not affect the hydrology of the woodlands, candidate veteran trees, Hedgerows, ditches, and waterbody, and appropriate and buffers should be provided; the water quality of the waterbody should not be allowed to deteriorate. Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

There are no perceived cumulative impacts with other existing and/or candidate mineral sites.

<u>Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.</u>

Residential site allocation (10 or more Dwellings) WITN 426 as set out in Braintree Local Plan Part Two is in the north-west of Witham c.520m to the south-west of Site A54. This allocation is already under construction. The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Candidate Site Reference A55 – Sheepcotes – Southern

Amber

Key findings of the assessment are as follows:

- Site A55 is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI), which is located approximately 2.2 km north-east of the Site. This is a geological SSSI and therefore potential ecological impacts are not considered further.

- The Site itself comprises three relatively large arable fields with boundary and internal hedgerows and some mature standard trees. Sheepcotes Wood is situated c.350 m north of the Site. This woodland is designated as a Local Wildlife Site; it is an ancient woodland which is therefore irreplaceable habitat.

- The Site is graded Amber because it could have major impacts upon the adjacent Lowland Mixed Deciduous Woodland and Orchard Priority habitats; involves the loss of Priority habitat Hedgerows and habitat for Priority farmland species. It could also have moderate impacts upon at least one significant Oak tree and several adjacent ponds. Impacts may include changes to the hydrology of the woodlands and Traditional orchard, smothering of leaves by dust, disturbance e.g. by noise and lighting and loss of habitat for Priority farmland species. Loss of Hedgerow Priority habitats and habitats for farmland Priority bird species should be compensated. The internal Hedgerows should be retained if at all possible.

Results of the technical RAG assessment

- Site A55 is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI), which is located approximately 2.2 km north-east of the Site. This is a geological SSSI and therefore potential ecological impacts are not considered further.

- Sheepcotes Wood Local Wildlife Site (reference Ch77) is situated 350 metres to the northwest of the Site. There are two other Local Wildlife Sites and a Special Roadside Verge within 1km. Sheepcotes Wood is ancient coppice woodland and therefore classed as irreplaceable habitat.

- The Site itself comprises three relatively large arable fields with boundary and internal hedgerows and some mature standard trees. The Hedgerows are mature and are Priority habitat; they would be removed as part of the scheme. There is a ditch along part of the northern boundary. There is a pond just beyond the northern boundary near the farm and adjacent to this is a significant Oak tree. There are at least three other ponds on the other boundaries.

- Two areas of Lowland Mixed Deciduous Woodland Priority habitat are adjacent. The area between the western boundary and the A130 appears to be relatively recent with developing scrub and willows and a water body in the centre (viewed from aerial imagery) which is not accessible. There is also a small patch of

Traditional Orchard Priority habitat on the northern boundary, near to the farm buildings.

- The Proforma proposes extraction of sand and gravel with processing and distribution from the adjacent Sheepcotes Quarry processing plant and restoration to original ground levels using inert waste. The existing active Sheepcotes Quarry is located to the north of the Site and is separated from Site A55 by an area of agricultural grassland, a watercourse, line of trees and scrub with ditch; access to the Site would be through this area may require removal of these part of these habitats. There is a potential veteran Oak tree nearby, on the southern boundary of Sheepcotes Quarry.

- The Site sits within an area of predominantly medium-sized arable fields, mostly bounded by hedgerows which are part of a wider network of habitat connectivity. There are some small and larger patches of Lowland Mixed Deciduous Woodland Priority habitat within one kilometre. There are also farm buildings and associated small parcels of land immediately to the north, along Sheepcotes Lane. The Essex Regiment Way (A130) is located c.100 metres to the west of the Site, which creates a substantial barrier to connectivity for species. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is graded Amber ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. It could have major impacts upon the adjacent Lowland Mixed Deciduous Woodland and Traditional Orchard Priority habitats; involve the loss of Priority habitat Hedgerows and habitat for Priority farmland species. It could also have moderate impacts upon at least one significant Oak tree and several adjacent ponds. Impacts may include changes to the hydrology of the woodlands and Traditional orchard, smothering of leaves by dust, disturbance e.g., by noise and lighting and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the woodlands and Traditional Orchard. Mitigation may include - but not be limited to - buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of small watercourses, and ecological improvements to the watercourses; compensatory habitat for loss of Hedgerow Priority habitats and habitats for farmland Priority bird species. The internal Hedgerows should be retained if at all possible. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A55 and A56 are both proposed as extensions of the extant quarry (Sheepcotes) and there is a history of quarrying in the area. Sheepcotes Wood Local Wildlife Site and ancient woodland is situated 350 metres to the northwest of the Site. The Site may result in cumulative impacts as there would be a greater potential to alter the hydrology in the long-term on this ground water dependent habitat.

The Site could result in additional impacts to the Hedgerows Priority habitats in the area and additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working this and the nearby A56 in sequence (as proposed by the Call for Sites Pro-forma) and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected at any one time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Sites A55, A56 and A59 are all situated within the Impact Risk Zone for the River Ter Site of Special Scientific Interest. However, Site A55 is located approximately 2.2 km north-east of the Site. There does not appear to be hydrological connectivity between the Site A55 or A56 and the SSSI.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Chelmsford North East bypass has planning permission but construction has not commenced. This new road will be situated approximately 400 metres to the northeast of the Site. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A56 – Sheepcotes – Western

Red/Amber

Key findings of the assessment are as follows:

- Site A56 is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI), which is located approximately 2.2 km north-east of the Site. This is a geological SSSI and therefore potential ecological impacts are not considered further.

- The Site is an arable field bounded by hedgerows which are Priority habitat. Sheepcotes Wood is situated immediately to the northern boundary. This designated as a Local Wildlife Site. It is an ancient woodland which is therefore irreplaceable habitat. The only existing gap in the Hedgerow between A56 and the adjacent Sheepcotes processing plant is immediately adjacent to the which could cause additional dust, disturbance, and potential damage to the soil adjacent to the woodland.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and could have a serious impact upon the LoWS and Priority habitats and species. Impacts may include changes to the hydrology of the ancient woodland, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in loss of habitat for Priority farmland species. Any extraction would require demonstration that it would not affect the hydrology of the ancient woodland to the north and it is likely that mitigation would require a substantial buffer from the ancient woodland. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from Sheepcotes Wood and the other existing habitats, and should be regularly dampened to minimise dust emissions.

Results of the technical RAG assessment

- The Site is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI), which is located approximately 2.2 km north-east of the Site. This is a geological SSSI and therefore potential ecological impacts are not considered further.

- Sheepcotes Wood Local Wildlife Site (code Ch77) is situated immediately beyond the northern boundary. There is another LoWS and three Special Roadside Verge within 300 metres. Sheepcotes Wood is ancient coppice woodland and therefore classed as irreplaceable habitat. There has is evidence of some more recent planting of non-native trees near the boundary.

- The Site itself comprises an arable field with boundary hedgerows. The Proforma proposes extraction of sand and gravel with processing and distribution from the adjacent Sheepcotes processing plant. Progressive restoration to original ground levels via the disposal of inert waste arisings. The Essex Regiment Way (A130) is located to the west of the Site which creates a substantial barrier to connectivity

for species and there is a more recent strip of woodland planting along the road in the south-western corner of the Site. The hedgerows are mature and are Priority habitat. The existing active Sheepcotes Quarry is located to the east of the Site and is separated from the Site by a mature hedgerow with ditch, standard trees, and a pond. This will be restored to an agricultural reservoir. Part of this permission is an associated irrigation pipeline from the River Chelmer running immediately to the south of Sheepcotes Wood. There is a field access gap in the hedgerow between the Site and extant quarry, but this is immediately adjacent to Sheepcotes Wood. Brown Hare (a Priority species) was seen in the field. The Site is within the Amber Great Crested Newt Risk Zone.

- Further afield, the landscape comprises predominantly medium-sized arable fields, mostly bounded by hedgerows which are part of a wider network of habitat connectivity. There are some small and larger areas of Lowland Mixed Deciduous Woodland Priority habitat. There are also farm buildings and associated small parcels of land to the south, along Sheepcotes Lane, and an inaccessible waterbody surrounded by scrub and willows.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent woodland, which is irreplaceable habitat, and a serious impact upon the LoWS and Priority habitats and species and likely to require high levels of mitigation to make the Site acceptable. Impacts may include changes to the hydrology of the ancient woodland, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in loss of habitat for Priority farmland species. Any extraction would require demonstration that it would not affect the hydrology of the ancient woodland to the north and it is likely that mitigation would require a substantial buffer from the ancient woodland in accordance with the Government's Advice on ancient woodlands. Dust prevention and general best practice pollution prevention would be likely.

- Processing and distribution would be from the adjacent Sheepcotes processing plant and to reach the Site will either require removal of part of the hedgerow – and therefore direct loss of Priority habitats- or use of the existing access gap located immediately adjacent to the woodland which could cause additional dust, disturbance, and potential damage to the soil adjacent to the woodland. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from Sheepcotes Wood and the other existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site is immediately south of Sheepcotes Wood. There is already a quarry to the east of the woodland and A56 and the area has a history of quarrying in the area. Candidate Site *A55 Sheepcotes Southern* would be located approximately 95 metres to the south of A56 at its closest point. The Site may result in cumulative impacts as there would be a greater potential to alter the water table in the long-term on this ground water dependent habitat. The Site could result in additional impacts to the ancient hedgerow that is situated between the extant and proposed Site.

The Site could create additional loss of, and disturbance to, farmland habitats and associated Priority species in the area.

Advanced habitat creation, working this and the nearby A55 in sequence (as proposed by the Call for Sites Pro-forma) and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Chelmsford North East bypass has planning permission but has not yet been implemented. This new road will be situated approximately 400 metres to the east of the Site. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A57 – Chalk End

Amber/Green

Key findings of the assessment are as follows:

- Site A57 comprises the south-eastern half of a large arable field, the outer edges of which are partially bounded by Hedgerows, which are Priority habitat. This Site would create an extension to a permitted quarry which has not yet commenced. Boundary ditches feed into Newland Brook which eventually feeds into the River Can.

- Roxwell Road Verge 9 Local Wildlife Site (reference Ch13) and Boyton SRV (SV-CHL9) are c.100m from the Site, on Roxwell Road. There is a strip of horse pasture beyond the western boundary Hedgerow. There are several areas of Lowland Mixed Deciduous Woodland within 1km, including an area located c.55m to the north-west of the Site, next to the horse pasture.

- The Site is graded Amber/Green because ecological impacts could be minor and are likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon Priority habitats and species. The Site could have moderate impacts upon the nearby Lowland Mixed Deciduous Woodland Priority habitat and to water quantity and quality of the nearby watercourses. Buffers are likely to be required near to Hedgerows and ditches and their water quality must not be affected by the proposals.

Results of the technical RAG assessment

- Site A57 comprises the southeastern half of a large arable field, the outer edges of which are partially bounded by Hedgerows, which are Priority habitat. The Site would create an extension to existing an allocated quarry which is permitted under planning application ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The same access to the A1060 would be used.

- The A1060 Roxwell Rd runs along the northern boundary and access would be from this road. This contains a good quality roadside verge with Cowslip, Woodrush, Yarrow, Glaucous Sedge, and there is a wide Hedgerow (Priority habitat) running along most of this boundary; the associated ditch is dry. A wet ditch runs along the eastern boundary. The boundary ditches feed into Newland Brook which in turn, joins Roxwell Brook which eventually feeds into the River Can.

- There are four Local Wildlife Sites and two Special Roadside Verges within 1km. Roxwell Road Verge 9 Local Wildlife Site (reference Ch13) and Boyton SRV (SV-CHL9) are found c.100m to the east of the Site on the north side of Roxwell Road. There is a strip of horse pasture beyond the western boundary Hedgerow. There are several areas of Lowland Mixed Deciduous Woodland within 1km, including an area located c.55m to the north-west of the Site, next to the horse pasture.

- The Site is set within a predominantly arable landscape; There are a few scattered dwellings; Newland Hall country estate is c. 150 m to the east and the small hamlet of Chalk End to the north-west. The ditches and hedgerows provide connectivity to surrounding small areas of woodland. A small part of the Site is within an Amber Risk Zone for Great Crested Newts.

- The Site is graded Amber/Green because ecological impacts could be minor and are likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon Priority habitats and species. The Site could have moderate impacts upon the nearby Lowland Mixed Deciduous Woodland Priority habitat. This includes impacts to water quantity and quality of the watercourses. The Lowland Mixed Deciduous Woodland Priority habitat could be affected through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the nearby woodland, Hedgerows, and watercourses. Mitigation may include - but not be limited to - buffers between the Site and Hedgerows; prevention of deterioration of water quality to watercourses, compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would create an extension to existing an allocated quarry which is permitted under planning application ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The same access to the A1060 would be used. The area of woodland and horse grazed pasture - and a watercourse - would be sandwiched between Site A57 and permitted site ESS/77/20/CHL. This could create additional disturbance to these areas e.g. through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Shellows Cross Farm (A60a) – Chelmsford and Shellows Cross Farm (A60b) – Chelmsford are situated to the southwest of Site A57 and Candidate Site Chalk End – Land at Chignal St James (A91) is situated approximately 2.5 km east of the haul

road at the closest point. These sites all fall within the Chelmer Operational Catchment and so cumulative impacts upon water quantity and quality are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A58 – Little Smiths

Red/Amber

Key findings of the assessment are as follows:

- There is a potential pollution pathway for water quality between the watercourse on the edge of Site A58 and a number of statutory wildlife sites. The potential for Likely Significant Effects to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- Site A58 is within the Impact Risk Zone for the Woodham Walter Common Site of Special Scientific Interest (SSSI), which is located approximately 1km north-west. The intervening land use is currently farmland with hedgerows and a golf course, creating habitat connectivity between Site A58 the SSSI.

- Thrift Wood Local Wildlife Site (Ma7) is immediately adjacent to the eastern boundary. It is Ancient Replanted Woodland and therefore classed as irreplaceable habitat. Warren Pit (Ma8) Local Wildlife Site (LoWS) is 10 metres to the north of the Site and there are two other LoWS within 1km.

- A candidate veteran Oak tree is located on the eastern boundary on the edge of the adjacent Thrift Wood, and another candidate is to the north of the Site on the western boundary. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran trees are classed as irreplaceable habitat.

- The Site is a relatively narrow field following along the north-western boundary of Thrift Wood LoWS. It is bordered by mature Hedgerow Priority habitat with mature standard trees on the north and western boundaries. The southern boundary comprises a partially wet stream valley and hedgerow with no mature trees. This watercourse runs eastwards into the adjacent ancient woodland.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and a serious impact upon the LoWS and Priority habitats and species and it is likely to require high levels of mitigation to make the Site acceptable. It could have a moderate impact upon the candidate veteran trees (irreplaceable habitat). Impacts may include changes to the hydrology of the ancient woodland, candidate veteran trees and Hedgerows and watercourse, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that it would not affect the hydrology of the ancient woodland and other habitats listed above. It is likely that mitigation would require a substantial buffer from the ancient woodland and candidate veteran trees in accordance with Government Advice. Water run-off from the Site should not be allowed to directly enter the watercourse.

Results of the technical RAG assessment

- The adjacent watercourse feeds into the River Chelmer which is approximately 3 km to the north of Site A58. The River Chelmer feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site, the Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone c. 5km further downstream. Although these are some distance from the Site, the adjacent watercourse creates a potential pollution pathway between A58 and these designated sites, with respect to water quality. Any potential for Likely Significant Effects to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- Site A58 is within the Impact Risk Zone for the Woodham Walter Common Site of Special Scientific Interest (SSSI), which is located approximately 1km north-west. The intervening land use is currently farmland with hedgerows and a golf course, creating habitat connectivity between Site A58 the SSSI. Danbury Common SSSI is 1.5km to the southeast and Blake's Wood & Lingwood Common SSSI is 1.8km to the east; urban areas of Danbury are situated between the Site and both of these SSSIs.

- Thrift Wood Local Wildlife Site (Ma7) is immediately adjacent to the eastern boundary. It is Ancient Replanted Woodland and therefore classed as irreplaceable habitat. Warren Pit (Ma8) Local Wildlife Site (LoWS) is 10 metres to the north of the Site; the largest part of the LoWS is a former sand and gravel pit with a varied mosaic of grassland, scrub and young woodland including Lowland Dry Acid Grassland, Lowland Mixed Deciduous Woodland, and Open Mosaic Habitats on Previously Developed Land Priority habitat. There are two other LoWS within 1km.

- A candidate veteran Oak tree is located on the eastern boundary on the edge of the adjacent Thrift Wood, and another candidate is to the north of the Site on the western boundary. A further mature Oak tree, located near to the latter is a prominent boundary feature, but has insufficient features to be considered a veteran specimen. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran trees are classed as irreplaceable habitat.

- The Site is a relatively narrow field following along the north-western boundary of Thrift Wood LoWS. It is bordered by mature Hedgerow Priority habitat with mature standard trees on the north and western boundaries. The southern boundary comprises a partially wet stream valley and hedgerow with no mature trees. This watercourse runs eastwards into the adjacent ancient woodland. Beyond the western boundary Hedgerow is a road called The Street and another mature Hedgerow bounds the western side of The Street. The Site is partly within an Amber Great Crested Newt Risk Zone. This would be an extension to the extant Royal Oak Quarry to the south, caried out in the same manner as the existing site operations. Inert waste would be used as part of the restoration.

- This is situated to the east of the Danbury Ridge between Danbury and Woodham Walter in a predominantly arable area with old hedgerows which are part of a wider network of habitat connectivity, and a golf course to the north-west on the Warren Estate. Priority habitats within 1km include large areas of Lowland Mixed Deciduous Woodland, scattered areas of Traditional Orchard, and two areas of Open Mosaic Habitat.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and a serious impact upon the LoWS and Priority habitats and species and it is likely to require high levels of mitigation to make the Site acceptable. It could have a moderate impact upon the candidate veteran trees (irreplaceable habitat). Impacts may include changes to the hydrology of the ancient woodland, candidate veteran trees and Hedgerows and watercourse, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that it would not affect the hydrology of the ancient woodland and other habitats listed above. It is likely that mitigation would require a substantial buffer from the ancient woodland and candidate veteran trees in accordance with Government Advice. The proposed 10 m buffer margin to the woodland would not provide a sufficient buffer. Dust prevention and general best practice pollution prevention would be likely. Water run-off from the Site should not be allowed to directly enter the watercourse.

- Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the Woodland and the other existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Thrift Wood Local Wildlife Site and ancient woodland is immediately east of the Site. There is already a quarry (Royal Oak Quarry) to the south of the ancient woodland, and there is permission for extraction immediately south of Site A58, which has not yet been implemented. The Site may result in cumulative impacts as there would be a greater potential to alter the water table in the long-term on the woodland which is a ground water dependent habitat.

The Site could create additional loss of, and disturbance to, farmland habitats.

Advance habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Site A58 is situated on the same watercourse as that near to A66 (White House Farm - Woodham Walter) and so cumulative effects are possible to the water quality

and quantity of the watercourse, which feeds into the River Chelmer and onwards to the Blackwater estuary.

Any potential for in combination effects particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A59 – Lowleys Farm

Red/Amber

Key findings of the assessment are as follows:

- Site A59 is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI) and the SSSI is located approximately 0.25 km from the Site. This is a geological SSSI and therefore potential ecological impacts are not considered further.

- Lyonshall Wood Local Wildlife Site (LoWS) is situated immediately adjacent to the eastern boundary. This is an ancient woodland which is therefore irreplaceable habitat.

- The Site comprises several arable fields bounded by mature hedgerows and mature trees which are Priority habitat. There are a number of candidate veteran trees on the northern boundary and near to Lyonshall Wood. The internal Hedgerow Priority habitats and associated trees, ditches and ponds would be removed to accommodate the development. Appropriate and adequate compensatory habitat would be required. The River Ter is situated less than 100 m from the northern boundary.

- The Site is graded Red-Amber because it could have major impacts upon the River Ter, adjacent ancient woodland, which is irreplaceable habitat, and could have a serious impact upon the LoWS and Priority habitats and species. Substantial buffers are likely to be required near to the adjacent Woodland. Appropriate and adequate compensatory habitat would be required for the loss of Hedgerow Priority habitat and associated trees, ditches, and ponds.

Results of the technical RAG assessment

- Site A59 is within the Impact Risk Zone for the River Ter Site of Special Scientific Interest (SSSI) and the SSSI is located approximately 0.25 km downstream of the Site. This SSSI is designated for its fluvio-geological interest, rather than its ecological importance, and therefore potential ecological impacts are not considered further.

- Lyonshall Wood Local Wildlife Site (reference Ch92) is situated immediately adjacent to the Site. Lyonshall Wood is ancient coppice woodland and therefore classed as irreplaceable habitat. Lowley's Farm Meadow, Little Leighs Local Wildlife Site (Ch89) (LoWS) is less than 50 metres away, just the other side of the River Ter. This unimproved grassland field is considered to perhaps be a small surviving remnant of a once more extensive floodplain grassland system. There are seven other LoWS within 1km of the Site.

- The Site itself is relatively large and comprises multiple arable fields separated by hedgerows. This would be a new Site and restoration would include reprofiling and the infilling with inert waste arisings. Braintree Road (A131) is located immediately to the west of the Site which creates a substantial barrier to

connectivity for species. The Hedgerows are mature and are Priority habitat and the internal Hedgerows would be removed to accommodate the mineral extraction, according to Illustrative Development Areas for Lowley's Farm Site (Drawing B CH1223-D5). This Site has a number of candidate veteran trees and mature boundary feature trees within the Hedgerows; these are predominantly along the northern boundary, and also north-east of Lyonshall Wood. Candidates are trees which, if surveyed at a different time of year might be considered a veteran tree. Veteran trees are classed as irreplaceable habitat. There are also ditches associated with some of the Hedgerows which would also be removed. One of these runs north-south across the Site and would feed into the River Ter. There are at least three ponds within the Site which would be lost. A Brown Hare (Priority species) was seen on-site. There are several areas of Lowland Mixed Deciduous Woodland Priority habitats to the north of the boundary.

- The Site gently slopes down toward the River Ter which is situated to the north of the Site c.95 metres from the north eastern boundary. This is classed as Main River by the Environment Agency and is part of the Ter Water Body, which is part of the Chelmer Operational Catchment (as defined by the Environment Agency). The riparian habitats of the River Ter valley include floodplain grassland, areas of Lowland Mixed Deciduous Woodland Priority habitat, broadleaved deciduous plantation woodland and an online farm reservoir. Mature hedgerows and trees, form part of a wider network of habitat connectivity and the general surrounding landscape comprises predominantly medium-sized fields, mostly bounded by hedgerows which are part of a wider network of habitat connectivity. There are some small and larger areas of Lowland Mixed Deciduous Woodland Priority habitat. There are also farm buildings and a church to the north. The Site is within the Amber Great Crested Newt Risk Zone.

- The Site is graded Red-Amber because ecological impacts could be major and are likely to require high levels of mitigation to make the Site acceptable. The Site could have a serious impact upon the River Ter and upon local designations and other Priority habitats and species. It could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and a serious impact upon Lyonshall Wood Local Wildlife Site. Impacts may include changes to the hydrology of the ancient woodland and the other areas of Lowland Mixed Deciduous Woodland Priority habitat; and impacts to water quantity and quality of the River Ter and other watercourses. The Site's surface and groundwater may be affected, which in turn could affect water dependent habitats. There would be direct loss of several Hedgerow Priority habitats -many of which are mature and some contain candidate veteran trees- as well as ditches and ponds. Other impacts include smothering of leaves by dust and disturbance e.g. by noise and lighting. In addition, it could result in loss of habitat for Priority farmland species, e.g. Brown Hare and Skylark.

- Any extraction would require demonstration that it would not affect the hydrology of the woodlands, particularly the adjacent ancient woodland, and it is likely that mitigation would require a substantial buffer from the ancient woodland in accordance with the Government's Advice on ancient woodlands. Mitigation may include - but not be limited to - buffers between the Site and any Veteran trees, Woodlands, and Hedgerows; prevention of deterioration of water quality to the

River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland Priority species. Water run-off from the Site should not be allowed to enter directly into watercourses, particularly where they feed directly into the River Ter. Adequate and appropriate compensatory habitat would be required for the loss of Hedgerow Priority habitat and associated trees, ditches, and ponds.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses and ancient woodland and Hedgerows.

- Veteran tree losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and, should detailed assessments identify any of the trees as veteran, compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations; bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

There is an extant quarry (Sheepcotes) approximately 1 km to the south and there are two more Candidate Sites (A55 Sheepcotes Southern and A56 Sheepcotes Western) which would be located adjacent to Sheepcotes Quarry. Sites A55 in A56 are not situated within the Ter Water Body but are part of the Chelmer Operational Catchment. The Site are therefore not likely to result in cumulative impacts due to being within different water bodies and there is minimal potential to alter the water table in the long-term on the ground water dependent habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated Priority species in the area.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time.

Sites A55, A56 and A59 are all situated within the Impact Risk Zone for the River Ter Site of Special Scientific Interest. However, this SSSI is designated for its fluvio-geological interest, rather than its ecological importance.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Chelmsford North East bypass has planning permission but has not yet been implemented. This new road will be situated within the western part of the Site and the road development boundary includes a small proportion of the Site next to the existing A131. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A60a - Shellow Cross Farm (A60a) – Chelmsford

Red/Amber

Key findings of the assessment are as follows:

- Site 60(a) comprises a number of arable fields situated between Screens Park Road and Roxwell Rd (A1060). A cross-country haul road links the southern sections of the Site to the northern areas and to Roxwell Rd (A1060). The boundary and internal Hedgerows are Priority habitats, they are historic and there are a number of significant boundary trees.

- Bushey-hays Spring Local Wildlife Sites (LoWS) is within the Site boundary and it is proposed that the extraction completely surrounds it. Rowes Wood LoWS is on the northern border and Skreens Wood LoWS is 125m from the Site. All of these LoWS are also ancient woodland and are therefore classed as irreplaceable habitat. Another area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring, is present on the First Edition OS maps and so it is possible that it could be ancient woodland and therefore classed as irreplaceable habitat. The woodland would be lost by these proposals. Additional consideration to this woodland is required and if it is irreplaceable habitat, losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations. The haul road appears to be situated within boundary habitat of Lowland Mixed Deciduous Woodland Priority habitat and Hedgerow Priority habitat which would therefore require some removal of the habitat.

- Several Hedgerow Priority habitats and mature trees would require removal, as well as several ditches. Other Hedgerows and ditches would need sections removing to create the haul road.

- The Site is graded Red-Amber because it could have major impacts upon Bushey-hays and Rowes Wood ancient woodlands, which are both irreplaceable habitat, and a serious impact upon these LoWS and other Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include direct habitat loss, significant changes to the hydrology of the ancient woodlands; smothering of leaves and disturbance. There would be a significant loss of habitat connectivity in the area through the loss of, and dissection of, numerous Hedgerows. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- The development must not affect the hydrology of the ancient woodlands, Hedgerows and watercourses and it is likely that mitigation would require a substantial buffer from the ancient woodlands in accordance with the Government's Advice on ancient woodlands. There may be less severe impacts if extraction is not on all sides of the ancient woodland. Ancient woodland losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric

and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement. Other mitigation may include buffers between the Site and Hedgerows; careful consideration to phasing to minimise impacts; rapid restoration and creation of new replacement habitats, prevention of deterioration of water quality to watercourses. Adequate and appropriate compensatory habitat should be provided for the loss of Woodland and Hedgerow Priority habitat, watercourses and for farmland birds.

Results of the technical RAG assessment

- Site 60(a) comprises a number of arable fields situated between Screens Park Road and Roxwell Rd (A1060). A cross-country haul road links the southern sections of the Site to the northern areas and Roxwell Rd (A1060).

- The northern area is already permitted under ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The Site also includes the remaining area of Site A40 allocated in the Essex Minerals Local Plan 2014. The only change to the Site allocation is the re-positioning of the access on to the A1060, approximately 400 metres to the east of its original location. The processing plant will be located on the northern field. It is proposed that the southern areas of the Site A60(a) are restored to low-level restoration and the northern areas would be infilled with inert waste.

- Bushey-hays Spring (Ep220/Ch2) Local Wildlife Site (LoWS) is within the Site boundary but would not form part of the extraction area. Rowes Wood (Ep220) LoWS is adjacent to the Site on the northern the border and Skreens Wood (Ch4) LoWS 125m from the Site. All of these LoWS are also ancient woodland and are therefore classed as irreplaceable habitat. There is another area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring which would be lost by these proposals. This is present on the First Edition OS maps and so it is possible that it could be ancient woodland which is an irreplaceable habitat. This would require further investigation at Development Management stage. There are twelve other Local Wildlife Sites and Special Roadside Verges (SRV) within one kilometre; some of these LoWS overlap with the SRVs.

- There are five internal Hedgerows within the southern section of the Site and more on the boundaries, all of which are Priority habitat, some of these contain mature trees and are evident on the First Edition OS maps There are also six internal ditches, some of which are associated with the Hedgerows and they also border each side of Bushey-hays Spring. There is a large mature tree in the middle of a field which was not accessed; future assessment is therefore required when the crops are removed. There is an ephemeral pond on the southern boundary. All of the internal habitats except for Bushey-hays Spring would be removed by the proposals.

- The A1060 Roxwell Rd runs along the northern boundary and access would be from this road. This contains a good quality roadside verge with Cowslip, Woodrush, Yarrow, Glaucous Sedge. Roxwell Road Verge 9 Local Wildlife Site (reference Ch13) and Boyton SRV (SV-CHL9) are found c.100m to the east of the Site on the north side of Roxwell Road. Candidate Site A57 (Chalk End – Roxwell) is adjacent to the proposed haul road. There is a strip of Lowland Mixed Deciduous Woodland Priority habitat and horse grazed pasture between the haul road and the Site. However, the haul road appears to be situated within boundary habitat of the Lowland Mixed Deciduous Woodland Priority habitat and Hedgerow Priority habitat which would therefore require some removal of the habitat.

- To the south of this, the Site comprises a large arable field bounded by hedgerows and ditches; the western boundary cuts through the middle of the field and so has no hedgerow. The ditches feed into Newland Brooke, which in turn, joins Roxwell Brook and eventually feeds into the River Can. The conveyor crosses several arable fields and would need to cut through at least six additional Hedgerows (at least one of which is a double Hedgerow) with ditches. The dissection of the Hedgerows could further reduce habitat connectivity in the area.

- A mature Oak tree located on the north-east boundary does not currently qualify for veteran classification. The tree appears to be retrenching, which is a veteranisation method and therefore it is likely that the tree could develop veteran features during this process and so could form a future veteran. There is a Significant mature Oak tree, located in the centre of the Site. Another mature Oak tree is a significant boundary feature on the north-west Site boundary which would not currently be identified as veteran but has the potential to develop future veteran as the tree ages.

- The surrounding landscape comprises predominantly arable fields, mostly bounded by Hedgerows and a network of watercourses, which form part of a wider network of habitat connectivity. There are some small patches of Lowland Mixed Deciduous Woodland Priority habitat. There are also clusters of agricultural buildings and cattle grazed fields to the south of the Site. There is some evidence remaining of Skreens Park which is located to the south of Screens Park Road and Shellow Road. The Site is partly within the Amber Great Crested Newt Risk Zone.

- The Site is graded Red-Amber because it could have major impacts upon Bushey-hays Spring and Rowes Wood ancient woodlands, which are both irreplaceable habitat, and a serious impact upon these LoWS and other Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include changes to the hydrology of the ancient woodlands, particularly as extraction is proposed around all sides of Bushey-hays Spring; smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site will require removal of an area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring -which could be ancient and some of the perimeter vegetation of a strip of Lowland Mixed Deciduous Woodland Priority habitat in the north of the Site, In addition, several Priority Hedgerow habitats would be removed as well as removal of sections through several more, creating direct loss of Priority habitats. Several ditches and

mature trees would also need to be removed. There would be a resultant loss of habitat connectivity in the area. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that it would not affect the hydrology of the ancient and Priority habitat woodlands, Hedgerows and watercourses and it is likely that mitigation would require a substantial buffer from the ancient woodlands in accordance with the Government's Advice on ancient woodlands. Additional consideration of the woodland next to Bushey-hays Spring is required and if it is irreplaceable habitat, losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations. Other mitigation may include - but not be limited to - buffers between the Site and Hedgerows; careful consideration to phasing to minimise impacts and rapid restoration and creation of new replacement habitats, prevention of deterioration of water quality to watercourses. Adequate and appropriate compensatory habitat should be provided for the loss of Hedgerow Priority habitat, watercourses, other habitats and for farmland birds.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the ancient woodlands and the other existing habitats, and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site will include the remaining area of Site A40 allocated in the Essex Minerals Local Plan 2014 which is permitted under planning application ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The same revised access to the A1060 would be used. Chalk End – Roxwell (Site A57) is adjacent to this Site.

Shellows Cross Farm (A60b) – Chelmsford (A60b) overlaps with Site A60(a) but proposes a different location for a conveyor, instead of a haul road. The haul road for Site A68(a) and conveyor for Site A60(b) follow different lines differ and if both were created, would create additional cumulative impacts to Priority Hedgerow habitats as they would cross the same Hedgerows in different locations, thereby creating additional direct habitat loss and additional loss of connectivity.

They could also create additional disturbance to these areas e.g. through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Land at Chignal St James (A91) is situated approximately 2.5 km east at the closest point. All of the above sites fall within the Chelmer Operational Catchment and so cumulative impacts upon water quantity and quality are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A60b - Shellow Cross Farm (A60b) – Chelmsford

Red/Amber

Key findings of the assessment are as follows:

- Site A60(b) comprises a number of arable fields situated to the north of Screens Park Road and Roxwell Rd (A1060). A cross-country conveyor links the southern sections of the Site to the northern areas of the Site. It is not clear how vehicles and staff would access the southern areas of Site. The boundary and internal Hedgerows are Priority habitats, they are historic and there are a number of significant boundary trees.

- Bushey-hays Spring Local Wildlife Sites (LoWS) is within the Site boundary and it is proposed that the extraction completely surrounds it. Rowes Wood LoWS is on the northern border and Skreens Wood LoWS is adjacent to the conveyor and less than 200m from the main Site area. All of these LoWS are also ancient woodland and are therefore classed as irreplaceable habitat. There is another area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring; this is present on the First Edition OS maps and so it is possible that it could be ancient and therefore classed as irreplaceable habitat. The woodland would be lost by these proposals. Additional consideration to the woodland is required and if it is irreplaceable habitat, losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations. The haul road appears to be situated within boundary habitat of Lowland Mixed Deciduous Woodland Priority habitat and Hedgerow priority habitat which would therefore require some removal of the habitat.

- Several Hedgerow Priority habitats and mature trees would require removal, as well as several ditches. Other Hedgerows and ditches would need sections removing to create the conveyor.

- The Site is graded Red-Amber because it could have major impacts upon Bushey-hays and Rowes Wood ancient woodlands, which are both irreplaceable habitat, and a serious impact upon these LoWS and other Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include direct habitat loss, significant changes to the hydrology of the ancient woodlands; smothering of leaves and disturbance. There would be a significant loss of habitat connectivity in the area through the loss of, and dissection of, numerous Hedgerows. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- The development must not affect the hydrology of the ancient woodlands, Hedgerows and watercourses and it is likely that mitigation would require a substantial buffer from the ancient woodlands in accordance with the Government's Advice on ancient woodlands. There may be less severe impacts if

extraction is not on all sides of the ancient woodland. Ancient woodland losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement. Other mitigation may include buffers between the Site and Hedgerows; careful consideration to phasing to minimise impacts; rapid restoration and creation of new replacement habitats, prevention of deterioration of water quality to watercourses. Adequate and appropriate compensatory habitat should be provided for the loss of Woodland and Hedgerow Priority habitat, watercourses and for farmland birds.

Results of the technical RAG assessment

- Site A60(b) comprises a number of arable fields situated to the north of Screens Park Road and Roxwell Rd (A1060).

- The northern area is already permitted under ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The Site also includes the remaining area of Site A40 allocated in the Essex Minerals Local Plan 2014. The main changes to the Site allocation is the re-positioning of the access on to the A1060, approximately 400 metres to the east of its original location, an additional area of the northern field and a conveyor of 1.5km in length would link A60(b) to the processing plant on a different route. It is not clear how vehicles and staff would access the southern parts of the Site. The processing plant will be located in the northern field. It is proposed that the southern areas of the Site A60(b) are restored to low-level restoration with partial infilling and the northern areas would be infilled with inert waste.

- Bushey-hays Spring (Ep220/Ch2) Local Wildlife Sites (LoWS) is within the Site boundary but would not form part of the extraction area. Rowes Wood (Ep220) LoWS is adjacent to the Site on the northern the border and Skreens Wood (Ch4) LoWS would be adjacent to the conveyor and less than 200m from the main Site area. All of these LoWS are also ancient woodland and are therefore classed as irreplaceable habitat. There is another area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring. This is present on the First Edition OS maps and so it is possible that it could be ancient. This would require further investigation at Development Management stage. The conveyor would be c.130m from Hardy's Plantation/Roots Spring/Green Lane (Ep222) LoWS. There are nine other Local Wildlife Sites and Special Roadside Verges (SRV) within one kilometre; some of the LoWS overlap with the SRVs.

- There are five internal Hedgerows within the southern section of the Site and more on the boundaries, all of which are Priority habitat, some of these contain mature trees and are evident on the First Edition OS maps There are also six internal ditches within the main Site area, some of which are associated with the Hedgerows and they also border each side of Bushey-hays Spring. There is a large mature tree in the middle of a field which was not accessed; future assessment is therefore required when the crops are removed. There is an

ephemeral pond on the southern boundary. All of the internal habitats except for Bushey-hays Spring would be removed by the proposals. The Proforma advises that, “There is evidence of and potential for protected and notable species on site.”

- The A1060 Roxwell Rd runs along the northern boundary and access would be from this road. This contains a good quality roadside verge with Cowslip, Woodrush, Yarrow, Glaucous Sedge. Roxwell Road Verge 9 Local Wildlife Site (reference Ch13) and Boyton SRV (SV-CHL9) are found c.100m to the east of the Site on the north side of Roxwell Road. Candidate Site A57 (Chalk End – Roxwell) is adjacent to the proposed haul road. There is a strip of Lowland Mixed Deciduous Woodland Priority habitat and horse grazed pasture between the haul road and the Site. However, the haul road appears to be situated within boundary habitat of the Lowland Mixed Deciduous Woodland Priority habitat and Hedgerow Priority habitat which would therefore require some removal of the habitat.

- To the south of this, the Site comprises a large arable field bounded by hedgerows and ditches. The ditches feed into Newland Brooke, which in turn, joins Roxwell Brook and eventually feeds into the River Can.

- The conveyor crosses several arable fields and would run near to the northern boundary of Skreens Wood, parallel to two boundary Hedgerows and would need to cut through at least four additional Hedgerows (at least one of which is a double Hedgerow) with ditches. The dissection of the Hedgerows could further reduce habitat connectivity in the area.

- A mature Oak tree located on the north-east boundary does not currently qualify for veteran classification. The tree appears to be retrenching, which is a veteranisation method and therefore it is likely that the tree could develop veteran features during this process and so could form a future veteran. There is a Significant mature Oak tree, located in the centre of the Site. Another mature Oak tree is a significant boundary feature on the north-west Site boundary which would not currently be identified as veteran but has the potential to develop future veteran as the tree ages.

- The surrounding landscape comprises predominantly arable fields, mostly bounded by Hedgerows and a network of watercourses, which form part of a wider network of habitat connectivity. There are several patches of Lowland Mixed Deciduous Woodland Priority habitat within 1km. There are also clusters of agricultural buildings and cattle grazed fields to the south of the Site. There is some evidence remaining of Skreens Park which is located to the south of Screens Park Road and Shellow Road. The Site is partly within the Amber Great Crested Newt Risk Zone.

- The Site is graded Red-Amber because it could have major impacts upon Bushey-hays Spring and Rowes Wood ancient woodlands and moderate impacts upon Skreens Wood which are all irreplaceable habitat; and a serious impact upon these LoWS and other Priority habitats and species and is likely to require high levels of mitigation to make the Site acceptable. Impacts may include changes to the hydrology of the ancient woodlands, particularly as extraction is

proposed around all sides of Bushey-hays Spring; smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site will require removal of an area of Lowland Mixed Deciduous Woodland Priority habitat within the Site, adjacent to Bushey-hays Spring -which could be ancient and some of the perimeter vegetation of a strip of Lowland Mixed Deciduous Woodland Priority habitat in the north of the Site, In addition, several Priority Hedgerow habitats would be removed as well as removal of sections through several more, creating direct loss of Priority habitats. Several ditches and mature trees would also need to be removed. There would be a resultant loss of habitat connectivity in the area. It could result in disturbance and loss of habitat for Priority farmland species, e.g., Skylarks.

- Any application would require demonstration that it would not affect the hydrology of the ancient and Priority habitat woodlands, Hedgerows and watercourses and it is likely that mitigation would require a substantial buffer from the ancient woodlands in accordance with the Government's Advice on ancient woodlands. Additional consideration of the woodland next to Bushey-hays Spring is required and if it is irreplaceable habitat, losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations. Other mitigation may include - but not be limited to - buffers between the Site and Hedgerows; careful consideration to phasing to minimise impacts and rapid restoration and creation of new replacement habitats, prevention of deterioration of water quality to watercourses. Adequate and appropriate compensatory habitat should be provided for the loss of Hedgerow Priority habitat, watercourses, other habitats and for farmland birds.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the ancient woodlands and the other existing habitats, and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site will include the remaining area of Site A40 allocated in the Essex Minerals Local Plan 2014 which is permitted under planning application ESS/77/20/CHL (Land south of A1060 (Salt's Green)) but has not yet commenced. The same revised access to the A1060 would be used. Chalk End – Roxwell (Site A57) is adjacent to this Site.

Shellows Cross Farm (A60a) – Chelmsford overlaps with Site A60(b) but proposes a different location for a haul road instead of a conveyor and includes an additional area in the northern section next to the permitted site. The conveyor would be situated adjacent to two field boundary Hedgerows and an ancient woodland. This could create additional cumulative impacts upon ancient woodlands and Hedgerow

Priority habitat. The haul road for Site A68(a) and conveyor for Site A60(b) follow different lines differ and if both were created, would create additional cumulative impacts to Priority Hedgerow habitats as they would cross the same Hedgerows in different locations, thereby creating additional direct habitat loss and additional loss of connectivity.

They could also create additional disturbance to these areas e.g. through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Land at Chignal St James (A91) is situated approximately 2.5 km east at the closest point. All of the above sites fall within the Chelmer Operational Catchment and so cumulative impacts upon water quantity and quality are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A61 – Heckfordbridge – Site 1

Amber

Key findings of the assessment are as follows:

- Site A61 is 3.4km northwest of Abberton Reservoir Special Protection Area, Ramsar site and Site of Special Scientific Interest (SSSI); it is not within the minerals SSSI Impact Risk Zone. The nearby Roman River is a tributary of the River Colne, which contains the Colne Estuary SSSI, Special Protection Area and Ramsar site and Essex Estuaries Special Area of Conservation. The Site is also upstream of the Roman River SSSI and Upper Colne Marshes SSSI and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. Although these are some distance from the Site, the River creates a potential pollution pathway between A61 and these statutory sites, with respect to water quality and water quantity. The potential pollution pathway between the proposed mineral Site and international wildlife sites would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The closest Local Wildlife Site is the Gol Grove and Hanging Wood Local Wildlife Site (Co58) is c.50 m north-east of the main extraction Site and would be an estimated 25 metres from the conveyor. This LoWS comprises the ancient woodlands.

- The Site comprises sloping arable and agriculturally improved grass fields partly bounded by Priority Hedgerow habitat. There are three internal hedgerows which are Priority habitat, and some mature trees in the centre of the field which would require removal but could not be accessed. The northern boundary is mostly bordered with Lowland Mixed Deciduous Woodland Priority habitat and broadleaved ? plantation woodland. The Site is evaluated as having a ‘County’ level of importance for wintering birds.

- There is at least one Notable mature Oak trees and a number of other large mature Oak trees which are significant boundary features.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have major impacts upon the internal Hedgerows which are Priority habitat, the loss of a small number of trees of unknown quality in the field. Other Priority habitat Hedgerows could be dissected through the creation of the conveyor. The Site could have moderate impacts upon irreplaceable habitats (ancient woodlands) and upon the local designations and Priority habitats and species e.g. the Roman River, and Gol Grove and Hanging Wood Local Wildlife Site and direct loss of sections of Hedgerows to accommodate the conveyor and the adjacent Priority habitat woodland. Impacts may include changes to the water quantity and quality of the River, severance of the habitat network and Priority habitats (Hedgerows). It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River and other boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

Results of the technical RAG assessment

- A Preliminary Ecological Appraisal, and Biodiversity Net Gain calculations and report have been submitted for this Site, together with a number of supporting assessments relating to legally protected species and wintering birds.

- The Site is c.3.4km northwest of Abberton Reservoir Special Protection Area, Ramsar site and Site of Special Scientific Interest (SSSI), it is not within the minerals SSSI Impact Risk Zone. However, the nearby Roman River is a tributary of the River Colne, which contains the Colne Estuary SSSI, Special Protection Area and Ramsar site and Essex Estuaries Special Area of Conservation. The Site is also upstream of the Roman River SSSI and Upper Colne Marshes SSSI. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extend up the Roman River and is c.11.5km at its closest point. Although these are some distance from the Site, the River creates a potential pollution pathway between A61 and these statutory sites, with respect to water quality and water quantity. The potential pollution pathway between the proposed mineral Site and international wildlife sites would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. Lapwings are a feature of interest for Abberton SPA; they are present on the Site with a peak count of 6. Therefore, it would be unlikely for the Site to be considered functionally linked land.

- The closest Local Wildlife Site is Gol Grove and Hanging Wood Local Wildlife Site (Co58) which is c.50 m north-east of the main extraction Site and would be an estimated 25 metres from the conveyor. This LoWS comprises the ancient woods of Gol Grove and Hanging Wood- which are connected to each other by mature but recent oak wood- and an area of tall swamp and tall willow scrub woodland. The ancient woodlands are irreplaceable habitat. Seller and Potash Wood and Lane LoWS is c.220m form the Site and is also ancient woodland. There are four other Local Wildlife Sites within one kilometre.

- The Site itself comprises sloping arable and agriculturally improved grass fields partly bounded by Hedgerows (Priority habitat). A conveyor would link the Site to Colchester Quarry via Bellhouse and would be located parallel with the Roman River on the western floodplain, crossing the Roman River to the north of Gol Grove and Hanging Wood Local Wildlife Site.

- There are three internal Hedgerows on the main Site which are Priority habitat, and some mature trees in the centre of the field which would require removal but could not be accessed. The northern boundary is mostly bordered with Lowland Mixed Deciduous Woodland Priority habitat and plantation woodland, which contain a pond and watercourse. The Site is evaluated as having a ‘County’ level

of importance for Wintering Birds. The Wintering Bird Report at the proposed works have the potential to impact 11 species of high conservation concern, 16 species of moderate conservation concern and one Schedule 1 Listed species under the Wildlife and Countryside Act (1981).

- There is a Notable Mature Oak tree, which is located on the eastern Site boundary which does not have sufficient veteran features to afford it veteran classification. However, it is a prominent feature in its locality so has the potential to form a future constraint.

- This would be an extension to the extant Bellhouse Quarry and landfill which is located to the north-east of the Site. The Site is separated from Bellhouse by the base of the Roman River Valley -which comprises floodplain grasslands, the Roman River and woody vegetation along it – and Gol Grove and Hanging Wood Local Wildlife Site (mostly ancient woodland). A conveyor would link the Site to Bellhouse via Site A95 and then continue on to Colchester Quarry using existing infrastructure. The conveyor would initially cross beneath Fountain Lane and then continue north across the floodplain grasslands, for approximately 600 m, cutting through some hedgerows and over the Roman River to the north of the LoWS. As the mineral working will be undertaken dry and above the water table, it is considered by the Site proposer that mineral extraction will not directly or indirectly affect water resources. It is not clear from the submission how staff and vehicles would access the Site, so impacts are not assessed.

- The surrounding area is rural and includes the riparian habitats of the Roman River Valley, agricultural floodplain grassland, patches of Lowland Mixed Deciduous Woodland Priority habitat, farm reservoir, mature hedgerows, and trees, which are part of a wider network of habitat connectivity. There are small to large predominantly arable fields, and small villages. The Site is partly within the Amber Great Crested Newt Risk Zone.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have major impacts upon the internal Hedgerows which are priority habitat, the loss of a small number of trees of unknown quality in the field. Other priority habitat Hedgerows could be dissected through the creation of the conveyor causing direct loss of sections of Hedgerows. Impacts may include changes to the water quality of the River, severance of the habitat network and Priority habitats (Hedgerows). It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River and other boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- The Site could have moderate impacts upon irreplaceable habitats (ancient woodlands) and upon the natural environment including local designations and

Priority habitats and species i.e., the Roman River, and Gol Grove and Hanging Wood Local Wildlife Site. Impacts may include changes to the water quality of the River, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species and wintering birds of high and medium conservation concern.

- Any application would require demonstration that the operations would not affect the hydrology of the ancient woodland, the Roman River, and on-site and boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as mineral stockpiles, should be located away from watercourses, woodlands and other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Candidate Site A62 Heckfordbridge would include Site A61 and an area to the south of this, stretching to Beckingham Hall Lane.

Local Wildlife Site is Gol Grove and Hanging Wood Local Wildlife Site (Co58) is situated north-east of the Site. The former Bellhouse Quarry to the north of the ancient woodland is currently being filled and to the east of this is the large extant Colchester Quarry complex, most of which has not been restored.

Land at Bellhouse Farm South A95 is situated close to the Roman River, on the opposite side, c.600 metres upstream.

The Site may result in cumulative impacts as there would be a greater potential to alter the water table in the long-term on ground water dependent habitats. The Site could result in additional impacts to hedgerow Priority habitats. The Site could create additional loss of, and disturbance to, farmland habitats.

There are many potential cumulative impacts to the Roman River and associated habitats and species, e.g. water quality and quantity, changes to floodplain habitats, and the movement of mobile protected and Priority species such as Otters and bats.

Advance habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to Abberton Reservoir SPA and Ramsar site; Colne Estuary SPA and Ramsar site and Essex Estuaries SAC, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known. Should

The A12 is c.2.5km northwest of the Site; this section is currently being upgraded. The Roman River passes through this section before reaching Site A61. Cumulative impacts to the Water Catchment of the Roman River Water Body, are possible should these works still be continuing at the same time as A61 being worked, mainly by potentially impacting water quality.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12 south of Marks Tey; this does not yet have consent. There is no hydrological connectivity between the Site and the Development Consent Order boundary of this project.

Candidate Site Reference A62 – Heckfordbridge – Site 2

Amber

Key findings of the assessment are as follows:

- Site A62 is c.3km northwest of Abberton Reservoir Special Protection Area, Ramsar site and Site of Special Scientific Interest (SSSI); it is just outside of the minerals SSSI Impact Risk Zone. The nearby Roman River is a tributary of the River Colne, which contains the Colne Estuary SSSI, Special Protection Area and Ramsar site and Essex Estuaries Special Area of Conservation. The Site is also upstream of the Roman River SSSI and Upper Colne Marshes SSSI and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. Although these are some distance from the Site, the River creates a potential pollution pathway between A61 and these statutory sites, with respect to water quality and water quantity. The potential pollution pathway between the proposed mineral Site and international wildlife sites would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The closest Local Wildlife Site is the adjacent Beckingham Hall Road Verge (Co53) which is also a Special Roadside Verge (Hardy's Green SV-COL1). Gol Grove and Hanging Wood Local Wildlife Site (Co58) is c.50 m north-east of the main extraction Site and would be an estimated 25 metres from the conveyor. This LoWS comprises the ancient woodlands (irreplaceable habitat).

- The Site comprises sloping arable and agriculturally improved grass fields partly bounded by Hedgerows (Priority habitat). There are several internal Hedgerows which are priority habitat, and some mature trees in the centre of the field which would require removal but could not be accessed and a small plantation woodland. The northern boundary is mostly bordered with Lowland Mixed Deciduous Woodland Priority habitat and broadly plantation woodland, which contain a pond and a watercourse. There is another watercourse on the southern boundary as well as a Special Roadside Verge which is also designated as a Local Wildlife Site. The Site is evaluated as having a 'County' level of importance for Wintering Birds by the Site proposer's ecologist.

- There are at least two Notable mature Oak trees and a number of other large mature Oak trees which are significant boundary features, including one on the southern boundary of the small internal woodland. One of the Notable trees on the eastern boundary is a prominent feature in its locality.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. ,The Site could have major impacts upon the internal Hedgerows which are Priority habitat, the loss of a small number of trees of unknown quality in the field. Other Priority habitat Hedgerows could be dissected through the creation of the conveyor. The Site could have moderate impacts upon irreplaceable habitats (ancient woodlands) and upon the local designations and Priority habitats and species e.g. the Roman River, and Gol Grove and Hanging Wood Local Wildlife

Site and direct loss of sections of hedgerows to accommodate the conveyor and the adjacent Priority habitat woodland. Impacts may include changes to the water quantity and quality of the River, severance of the habitat network and Priority Hedgerow habitats . It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River and other boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

Results of the technical RAG assessment

- Site A62 includes Site A61 and an additional area to the south of this, stretching to Beckingham Hall Lane. A Preliminary Ecological Appraisal, and Biodiversity Net Gain calculations and report have been submitted for this Site, together with a number of supporting assessments relating to legally protected species and wintering birds.

- Site A62 is c.3 km northwest of Abberton Reservoir Special Protection Area, Ramsar site and Site of Special Scientific Interest (SSSI), it is just outside of the minerals SSSI Impact Risk Zone. The nearby Roman River is a tributary of the River Colne, which contains the Colne Estuary SSSI, Special Protection Area and Ramsar site and Essex Estuaries Special Area of Conservation. The Site is also upstream of the Roman River SSSI and Upper Colne Marshes SSSI. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extend up the Roman River and is c.11.5km at its closest point. Although these are some distance from the Site, the River creates a potential pollution pathway between A61 and these statutory sites, with respect to water quality and water quantity. The potential pollution pathway between the proposed mineral Site and international wildlife sites would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. Lapwings are a feature of interest for Abberton SPA; they are present on the Site with a peak count of 6. Therefore, it would be unlikely for the Site to be considered functionally linked land.

- The closest Local Wildlife Site is the adjacent Beckingham Hall Lane which is also a Special Roadside Verge. Gol Grove and Hanging Wood Local Wildlife Site (Co58) is c.50 m north-east of the main extraction Site and would be an estimated 25 metres from the conveyor. The LoWS comprises the ancient woods of Gol Grove and Hanging Wood- which are connected to each other by mature but recent oak wood- and an area of tall swamp and tall willow scrub woodland. The ancient woodlands are irreplaceable habitat. Seller and Potash Wood and Lane LoWS is c.220m form the Site and is also ancient woodland. There are four other Local Wildlife Sites within one kilometre.

- The Site itself comprises sloping arable and agriculturally improved grass fields partly bounded by Hedgerows (Priority habitat) and narrow roads with scattered

buildings on the boundaries. It is situated between Maldon Road, Fountain Lane, Birch Road, and Beckingham Hall Lane. A conveyor would link the Site to Colchester Quarry via Bellhouse and would be located parallel with the Roman River on the western floodplain, crossing the Roman River to the north of Gol Grove and Hanging Wood Local Wildlife Site.

- There are a number internal Hedgerows on the main Site, most of which are Priority habitat, and some mature trees in the centre of the field which would require removal but could not be accessed and a patch of woodland with some mature trees and some areas of rough grassland. The northern boundary is mostly bordered with Lowland Mixed Deciduous Woodland Priority habitat and broadleaved plantation woodland which contains a pond and watercourse. The southern boundary also has a watercourse. The Site is evaluated as having a 'County' level of importance for wintering birds. The Wintering Bird Report at the proposed works have the potential to impact 11 species of high conservation concern, 16 species of moderate conservation concern and one Schedule 1 Listed species under the Wildlife and Countryside Act (1981).

- There are at least two Notable mature Oak trees and a number of other large mature Oak trees which are significant boundary features, including one on the southern boundary of the small internal woodland. One of the Notable trees on the eastern boundary is a prominent feature in its locality.

- This would be an extension to the extant Bellhouse Quarry and landfill which is located to the north-east of the Site. The Site is separated from Bellhouse by the base of the Roman River Valley -which comprises floodplain grasslands, the Roman River and woody vegetation along it – and Gol Grove and Hanging Wood Local Wildlife Site (mostly ancient woodland). A conveyor would link the Site to Bellhouse via Site A95 and then continue on to Colchester Quarry using existing infrastructure. The conveyor would initially cross beneath Fountain Lane and then continue north across the floodplain grasslands, for approximately 600 m, cutting through some hedgerows and over the Roman River to the north of the LoWS. As the mineral working will be undertaken dry and above the water table, it is considered by the Site proposer that mineral extraction will not directly or indirectly affect water resources. It is not clear from the submission how staff and vehicles would access the Site, so impacts are not assessed.

- The surrounding area is rural and includes the riparian habitats of the Roman River valley, agricultural floodplain grassland, patches of Lowland Mixed Deciduous Woodland Priority habitat, farm reservoir, mature hedgerows, and trees, which are part of a wider network of habitat connectivity. There are small to large predominantly arable fields, and small villages. The Site is partly within the Amber Great Crested Newt Risk Zone.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have moderate impacts upon irreplaceable habitats. Major impacts upon the internal Hedgerows which are priority habitat, the loss of a small number of trees of unknown quality in the field. Other priority habitat Hedgerows could be dissected through the creation of the conveyor causing direct loss of

sections of Hedgerows. Impacts may include changes to the water quality of the River, severance of the habitat network and Priority Hedgerow habitats . It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River and other boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- The Site could have moderate impacts upon irreplaceable habitats (ancient woodlands) and upon the natural environment including local designations and Priority habitats and species i.e. the Roman River, and Gol Grove and Hanging Wood Local Wildlife Site. Impacts may include changes to the water quality of the River, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species and wintering birds of high and medium conservation concern.

- Any application would require demonstration that the operations would not affect the hydrology of the ancient woodland, the Roman River, and on-site and boundary habitats. Appropriate mitigation and compensatory habitat should be provided for loss of the Hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as mineral stockpiles, should be located away from watercourses, woodlands and other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Candidate Site A62 Heckfordbridge includes Site A61 and an additional area to the south of this, stretching to Beckingham Hall Lane.

Local Wildlife Site is Gol Grove and Hanging Wood Local Wildlife Site (Co58) is situated north-east of the Site. The former Bellhouse Quarry to the north of the ancient woodland is currently being filled and to the east of this is the large extant Colchester Quarry complex, most of which has not been restored.

Land at Bellhouse Farm South A95 is situated close to the Roman River, on the opposite side, c.600 metres upstream.

The Site may result in cumulative impacts as there would be a greater potential to alter the water table in the long-term on ground water dependent habitats. The Site

could result in additional impacts to hedgerow Priority habitats. The Site could create additional loss of, and disturbance to, farmland habitats.

There are many potential cumulative impacts to the Roman River and associated habitats and species, e.g. water quality and quantity, changes to floodplain habitats, and the movement of mobile protected and Priority species such as Otters and bats.

Advanced habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to Abberton Reservoir SPA and Ramsar site; Colne Estuary SPA and Ramsar site and Essex Estuaries SAC, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known. Should

The A12 is c.2.5km northwest of the Site; this section is currently being upgraded. The Roman River passes through this section before reaching Site A61. Cumulative impacts to the water catchment of the Roman River Water Body, are possible should these works still be continuing at the same time as A61 being worked, mainly by potentially impacting water quality.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12 south of Marks Tey; this does not yet have consent. There is no hydrological connectivity between the Site and the Development Consent Order boundary of this project.

Candidate Site Reference A63 – Patch Park, Abridge

Red/Amber

Key findings of the assessment are as follows:

We were given limited access to this site

- The Site is within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone for Curtismill Green SSSI.

- The River Roding follows the southern boundary for the western half of this Site and also passes through the centre of it creating a potential pollution pathway for water quality between the proposed Site and the statutory and non-statutory wildlife sites at Roding Valley Meadows.

- The Site is situated on relatively flat low-lying land in the Roding Valley and comprises arable land and Coastal and Floodplain Grazing Marsh Priority habitat. The River Roding would be directly impacted, as well as a number of watercourses and Hedgerows and Coastal and Floodplain Grazing Marsh Priority habitat.

- The Site is graded Red/Amber because ecological impacts could be major and are likely to require high levels of mitigation to make the Site acceptable. The Site's surface and groundwater may be affected, which in turn could affect the hydrology of on-site and off-site habitats. Substantial buffers are likely to be required near to the retained Priority habitat and River Roding, and water quality must not be affected by the proposals. Significant compensation is likely for the loss of small watercourses, diversion of the River Roding and Priority habitats - including the Coastal and Floodplain Grazing Marsh and Hedgerows - and habitats supporting Priority species.

Results of the technical RAG assessment

- The Site is within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone for Curtismill Green SSSI which is 1.7km to the east of the Site. This is a designated for its unimproved grassland and scrub.

- The River Roding follows the southern boundary for the western half of this Site and also passes through the centre of it. The River Roding travels south westwards and ultimately feeds into the River Thames. Roding Valley Meadows SSSI, Local Nature Reserve and Local Wildlife Sites (LoWS) (Ep61) are 6 km downstream of the Site and comprise Priority habitats including Coastal and Floodplain Grazing Marsh, Lowland Meadows, (comprising traditionally managed hay meadows) and marsh. Although these are some distance from the Site, the River Roding creates a potential pollution pathway between A63 and these statutory and non-statutory sites, with respect to water quality and water quantity.

- The Site itself is located between Ongar Road/ A113 to the south and Epping Lane in the north, with access from the former. It is situated on relatively flat low-

lying land in the Roding Valley; it will require dewatering and filling with inert waste. Much of the Site is bounded by hedgerows and mature trees. There are mature trees and scrub along and near to extensively amounts of the River Roding. The western part of the Site contains predominantly arable fields and there are three internal hedgerows and at least three watercourses (in addition to the River Roding) which would require removal. The Hedgerows are Priority habitat. The eastern part of the Site comprises Coastal and Floodplain Grazing Marsh Priority habitat.

- There are six Local Wildlife Sites within 1km. Scattered areas of Lowland Mixed Deciduous Woodland Priority habitat are found within 1km of the Site.

- Set in a predominantly arable area, the Site is less than 400 metres south of the M25 and 1.7km east of the M11; these roads create significant barriers to species movement. To the north of the Site is a water body (reservoir?), areas of rough grassland and a golf course. To the east is the River Roding with arable and Coastal and Floodplain Grazing Marsh Priority habitat, extending towards Curtismill Green SSSI. An aerodrome is situated to the south. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is graded Red-Amber because ecological impacts could be major and are likely to require high levels of mitigation to make the Site acceptable. The Site could have a serious impact upon the River Roding and upon local designations and other Priority habitats and species. This includes impacts to water quantity and quality of the River Roding and other watercourses and disturbance to protected and Priority species using the River corridor e.g. Water Voles, Otters, and bats. The Site's surface and groundwater may be affected, which in turn could affect on-site and off-site water dependent riparian habitats e.g. through changes to the hydrology. Dewatering of this water sensitive habitat could result in irreversible impacts. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. It could also result in disturbance and loss of habitat for Priority farmland and Grazing Marsh species, e.g. Lapwing and Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the River Roding and its associated habitats, trees, and other boundary habitats in the long term. Mitigation may include - but not be limited to - substantial buffers between the Site and River Roding and retained Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses. Significant compensation for the loss of small watercourses, diversion of the River Roding and Priority habitats -including the Coastal and Floodplain Grazing Marsh and Hedgerows - and habitats supporting Priority species would be necessary. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses and the other existing retained habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

There are no other mineral sites in the vicinity, or within the Operational Water Management Catchment area.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A64 – Land East of Asheldham Quarry

Amber/Green

Key findings of the assessment are as follows:

- Site A64 is not within a minerals Site of Special Scientific Interest Impact Risk Zone (IRZ). However, it is situated just outside of several IRZs as it is located in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, which are all internationally designated. The Blackwater Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site is 3 km to the north. The Dengie SSSI, National Nature Reserve, SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SSSI, SPA and Ramsar site is 5.8km to the south. These designated areas are also within the Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

- There is a watercourse less than 300 m east of the Site which is the boundary of the next field. This drains into a main river c.500 metres to the south. From here it makes its way eastwards towards the coast. This creates hydrological connectivity with the Dengie SSSI, National Nature Reserve, SPA and Ramsar site. Although these are some distance from the Site, the watercourses create a potential pollution pathway between A64 and these designated sites, with respect to water quality and water quantity. The potential for the likely significant effects to the SPA and Ramsar site and SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Site A64 is a field of agricultural grassland to the east of the extant Asheldham Quarry. Much of the Site is bounded by Hedgerows (Priority habitat) or mature trees and scrub. There is a patch of Lowland Mixed Deciduous Woodland Priority habitat on the eastern boundary- which could be lost to the development- and a large pond/small lake. There are two mature trees within the field that would be lost to the development.

- 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 minor impact upon international or national designations. This includes impacts to water quality of the tributary watercourses. The Site could have a moderate impact upon the natural environment including local designations and Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats and Priority species. This includes impacts to mature trees within the field which would be lost, and surrounding perimeter vegetation and numerous water bodies. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. The surrounding water bodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats could also be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the existing water bodies, Hedgerows, small woodland, and other boundary habitats. Mitigation may include - but not be limited to - adequate and appropriate buffers between the Site and these habitats; prevention of deterioration of water quality to watercourses; compensatory habitat for farmland Priority species. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Results of the technical RAG assessment

- Site A64 is not within a minerals Site of Special Scientific Interest Impact Risk Zone (IRZ). However, it is situated just outside several IRZs as it is located in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, which are all internationally designated. The Blackwater Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site is 3 km to the north. The Dengie SSSI, National Nature Reserve, SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SSSI, SPA and Ramsar site is 5.8km to the south. These designated areas are also within the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

- There is a watercourse less than 300 m east of the Site on the far boundary of the next field. This drains into a main river c.500 metres to the south. From here it makes its way eastwards towards the coast. This creates hydrological connectivity with the Dengie SSSI, National Nature Reserve, SPA and Ramsar site and the Essex Estuaries SAC. Although these are some distance from the Site, the watercourses create a potential pollution pathway between A64 and these designated sites, with respect to water quality and water quantity. The potential for the likely significant effects to the SPA and Ramsar site and SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- There are three Local Wildlife Sites within 1 km, the closest of which is Asheldham Pits (Ma82) LoWS pits which is 440m to the west. Asheldham Pits is a disused gravel works made up of a lake, woodland, scrub, and grassland. It contains Lowland Dry Acid Grassland Priority habitat.

- Site A64 is an extension to the existing Asheldham Quarry which lies directly beyond the western boundary; the field contains agricultural grassland. Much of the Site is bounded by Hedgerows (Priority habitat) or mature trees and scrub. The southern half of the eastern boundary (south of the pond) is devoid of vegetation and there is a track following the boundary. There are ditches on the south, west and northern boundaries of the Site which were dry at the time of the survey. There is some new hedgerow planting along the western boundary next to the extant Quarry. There is a patch of Lowland Mixed Deciduous Woodland Priority habitat on the eastern boundary- which could be lost to the development- and a large pond/small lake used for recreation, e.g. fishing, and by waterfowl. Between this pond and the watercourse to the east is another off-site pond. There are two mature trees within the field that would be lost to the development. The Site falls partly within a Great Crested Newt Amber Risk Zone. Partial infilling of

inert waste would be used to restore the Site. There is an existing waste processing plant at Asheldham Quarry. There are no details regarding access to this, so it is not considered in the assessment.

- The Site is situated within the Dengie peninsula, which is an area of flat, low lying, predominantly arable farmland. The extant Asheldham Quarry is found to the west and there are a number of waterbodies in the area associated with quarry restoration. Beyond the south-west corner is a restored quarry area with paddocks and at least two ponds. There is another large pond just beyond the western boundary and large farm buildings to the south. There are areas of Lowland Mixed Deciduous Woodland Priority habitat at Asheldham Pits Nature Reserve LoWS and further scattered patches within 1km.

- 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 minor impact upon international or national designations. This includes impacts to water quality of the tributary watercourses. The Site could have a moderate impact upon the natural environment including local designations and Lowland Mixed Deciduous Woodland and Hedgerow Priority habitat and Priority species. This includes impacts to mature trees within the field which would be lost, and surrounding perimeter vegetation and numerous water bodies. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. The surrounding water bodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats could also be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the existing water bodies, Hedgerows, small woodland, and other boundary habitats. Mitigation may include - but not be limited to - adequate and appropriate buffers between the Site and these habitats; prevention of deterioration of water quality to watercourses; compensatory habitat for farmland Priority species. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from water bodies, watercourses and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

This Site is located immediately to the east of the existing Asheldham Quarry. In addition, it is also near to candidate Site A65 (Land South of Asheldham Quarry). There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be

changes to water quality. The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to the Blackwater Estuary Special Protection Area and Ramsar site, the Dengie SPA and Ramsar site, the Crouch, and Roach Estuaries SPA and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A65 – Land South of Asheldham Quarry

Amber

Key findings of the assessment are as follows:

- Site A65 is not within a minerals Site of Special Scientific Interest Impact Risk Zone (IRZ). However, it is situated just outside of several IRZs as it is located in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, which are all internationally designated. The Blackwater Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site is 3 km to the north. The Dengie SSSI, National Nature Reserve, SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SSSI, SPA and Ramsar site is 5.8km to the south. These designated areas are also within the Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

- It is not known whether there is any hydrological connectivity between the Site and the nearest river which feeds into the Dengie SSSI, National Nature Reserve, SPA and Ramsar site. Although some distance from the Site, any watercourse would create a potential pollution pathway between A65 and these designated sites, with respect to water quality and water quantity. The potential for the likely significant effects to the Dengie SPA and Ramsar site and Essex Estuaries SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Site A65 is a relatively small arable field, much of which is bounded by remnant Hedgerows (Priority habitat), mature trees and scrub. There is a patch of woodland plantation in the north-east corner eastern boundary which could be lost to the development. There is an existing waste processing plant which is located just beyond the north-west boundary.

- There are two candidate veteran mature Oak trees on the southern boundary of the Site. There is another mature Oak Tree on the southern boundary which is Notable. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran trees are classed as irreplaceable habitat.

- The Site is graded Amber because ecological impacts are likely to be moderate and likely to require low levels of mitigation to make the Site acceptable. The Site could have a minor impact upon international or national designations. This includes impacts to water quality of the tributary watercourses. The Site could have moderate impacts upon irreplaceable habitats i.e. candidate veteran trees. The Site could have a major impact upon the natural environment including Local Wildlife Sites, neighbouring waterbodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitat and Priority species. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. The surrounding water bodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitat could also be indirectly affected.

- Any application would require demonstration that the operations would not affect the hydrology of the existing water bodies, Hedgerows, small woodland, and other boundary habitats. Mitigation may include - but not be limited to - adequate and appropriate buffers between the Site and these habitats, particularly the candidate veteran trees; prevention of deterioration of water quality to watercourses; compensatory habitat for farmland Priority species. Water run-off from the Site should not be allowed to enter directly into the waterbodies.

Results of the technical RAG assessment

- Site A65 is not within a minerals Site of Special Scientific Interest Impact Risk Zone (IRZ). However, it is situated just outside of several IRZs as it is located in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, which are all internationally designated. The Blackwater Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site is 3 km to the north. The Dengie SSSI, National Nature Reserve, SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SSSI, SPA and Ramsar site is 5.8km to the south. These designated areas are also within the Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

- There is a main river c.570 metres to the south-west and from here it makes its way eastwards towards the coast. It is not known whether there is any hydrological connectivity between the Site and the river and hence onwards to the Dengie SSSI, National Nature Reserve, SPA and Ramsar site. Although some distance from the Site, any watercourse would create a potential pollution pathway between A65 and these designated sites, with respect to water quality and water quantity. The potential for the likely significant effects to the Dengie SPA and Ramsar site and Essex Estuaries SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- There are two Local Wildlife Sites within 1 km, the closest of which is Asheldham Pits (Ma82) LoWS pits which is 130m to the north- east, on the other side of the existing storage and processing area. Asheldham Pits LoWS is a disused gravel works made up of a lake, woodland, scrub, and grassland. It contains Lowland Dry Acid Grassland Priority habitat.

- Site A65 is an extension to the existing Asheldham Quarry which lies directly beyond the west and northern boundaries. It is a relatively small arable field. Much of the Site is bounded by remnant Hedgerows (Priority habitat), mature trees and scrub. There is a patch of woodland plantation in the north-east corner eastern boundary which could be lost to the development. Part of the eastern boundary is devoid of vegetation and has a large farm building next to the boundary. Partial infilling of inert waste would be used to restore the Site. There is an existing waste processing plant which is located just beyond the north-west boundary. There are no details regarding access, however, the distance to the existing processing plant is short.

- There are two candidate veteran mature Oak trees on the southern boundary of the Site. There is another mature Oak Tree on the southern boundary which is Notable. It has two veteran features, which would make the tree a significant boundary feature rather than a full veteran. It is likely that further features would be evident in the winter as, at the time of survey, the crown was obscured through dense ivy. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran trees are classed as irreplaceable habitat.

- The Site is situated within the Dengie peninsula, which is an area of flat, low lying, predominantly arable farmland. Farmland surrounds the Site except for the extant Asheldham Quarry to the north and west and there are a number of water bodies in the area associated with quarry restoration, one of which is immediately beyond the western boundary and is surrounded by scattered scrub and trees. There are paddocks and large buildings to the east and south of the Site and the small residential area of Asheldham to the west. Hall Road is on the southern boundary which is a narrow road with hedgerows and trees on either side. There are areas of Lowland Mixed Deciduous Woodland Priority habitat at Asheldham Pits Nature Reserve LoWS and further scattered patches within 1km.

- The Site is graded Amber because ecological impacts are likely to be moderate and likely to require medium levels of mitigation to make the Site acceptable. The Site could have a minor impact upon international or national designations. This includes impacts to water quality of the tributary watercourses. The Site could have moderate impacts upon irreplaceable habitats i.e. candidate veteran trees. The Site could have a major impact upon the natural environment including Local Wildlife Sites, neighbouring waterbodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats and Priority species. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. The surrounding water bodies, Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats could also be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the existing waterbodies, Hedgerows, small woodland, and other boundary habitats. Mitigation may include - but not be limited to - adequate and appropriate buffers between the Site and these habitats, particularly the candidate veteran trees; prevention of deterioration of water quality to watercourses; compensatory habitat for farmland Priority species.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from water bodies and the other existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

This Site is located immediately to the south and east of the existing Asheldham Quarry. In addition, it is also near to candidate Site A64 (Land West of Asheldham Quarry).

There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to the Blackwater Estuary Special Protection Area and Ramsar site, the Dengie SPA and Ramsar site, the Crouch, and Roach Estuaries SPA and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A66 – White House Farm

Amber

Key findings of the assessment are as follows:

- Site A66 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation. It is 2.5km directly from these sites and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. There is a potential pollution pathway for water quality between the watercourse near to Site A66 and the statutory wildlife sites listed above. The potential for Likely Significant Effects to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- To the west of the Site, on the Danbury Ridge, are several Sites of Special Scientific Interest. The closest is Woodham Walter Common SSSI which is 1.7km away. The Wilderness (Ma11) Local Wildlife Site (LoWS) is adjacent to the western Site boundary. There are four other LoWS within 1 km of the Site.

- The adjacent LoWS -The Wilderness -is a streamside woodland that may have ancient origins. The pits to the north have a great wildlife diversity and include Wet Woodland Priority habitat. There is also Lowland Mixed Deciduous Woodland Priority habitat beyond the boundary in the southwest corner. Bog Wood (Ma22) LoWS is 220m the east and comprises probably ancient woodland. Manor Road Complex LoWS (Ma14) is c.1km downstream of the Site, connected by the watercourse.

- The Site comprises two large arable fields with boundaries which contain Hedgerows and tree lines (Priority habitat). Two connecting ditches with occasional trees -dry at the time of survey- cut through the Site. The ditch in the south-west corner passes through the adjacent Local Wildlife Site and into the associated north-south watercourse. This creates potential surface water / hydrological connectivity to this watercourse and beyond, towards the river Chelmer. There is a mature notable Oak tree located on the southern boundary. Approximately 2km kilometres of private access road would be constructed; however, it is not clear on the plans where this would be located and so potential impacts are not assessed.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon local designations and Priority habitats and species. This includes impacts to water quantity and quality of the watercourses on and near to the Site; to the adjacent The Wilderness LoWS, the Priority Hedgerow habitat and nearby Lowland Mixed Deciduous Woodland Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species. Any application would require demonstration that the

operations would not adversely affect the LoWS, the hydrology of the watercourses and associated habitats, or the waterbodies, Hedgerows, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Results of the technical RAG assessment

- Site A66 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation. It is 2.5km directly from these sites and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. The watercourse to the west of the Site feeds into the River Chelmer which is approximately 1.7km to the north of Site A66. The River Chelmer feeds into the Blackwater estuary containing the above designated sites c. 5km further downstream. The watercourse to the west of the Site creates a potential pollution pathway between A66 and these designated sites, with respect to water quality. The potential for the likely significant effects to the SPA and Ramsar site and SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- To the west of the Site, on the Danbury Ridge, are several Sites of Special Scientific Interest. The closest is Woodham Walter Common SSSI which is 1.7km away. The Wilderness (Ma11) Local Wildlife Site (LoWS) is adjacent to the western Site boundary. There are four other LoWS within 1 km of the Site.

- The adjacent LoWS The Wilderness is a streamside woodland with a steep wooded slope on the eastern side that may have ancient origins. The pits to the north have a very diverse flora and complex habitat structure, which adds to create greater wildlife diversity. This is recorded on the LoWS citation as Wet Woodland Priority habitat. There is also Lowland Mixed Deciduous Woodland Priority habitat beyond the boundary in the southwest corner. Bog Wood (Ma22) LoWS is 220m the east; it comprises Lowland Mixed Deciduous Woodland Priority habitat. It is a small, probably ancient woodland. Manor Road Complex LoWS (Ma14) is c.1km downstream of the Site and is a composite site of wood and grassland, containing Lowland Dry Acid Grassland Priority habitat.

- The Site is situated to the east of Woodham Walter and comprises two large arable fields with boundaries which contain Hedgerows and tree lines (Priority habitat). Two ditches with occasional trees -dry at the time of survey- cut through the Site, connected at right angles to each other. The ditch in the south-west corner of the Site leads through the adjacent Local Wildlife Site and into the associated north-south watercourse, which is c.45 metres from the Site's western boundary. This creates potential surface water / hydrological connectivity to this watercourse and beyond. There is a mature notable Oak tree located on the southern boundary. The Site is partly within a Great Crested Newt Amber Risk Zone. Approximately 2km kilometres of private access road would be constructed; however, it is not clear on the plans where this would be located and so potential impacts are not assessed.

- In addition to the above LoWS, the area comprises large arable fields, some with hedgerows and scattered residential and farm buildings. Priority habitat within 1km includes areas of Lowland Mixed Deciduous Woodland, scattered areas of Traditional Orchard and an area of Open Mosaic Priority Habitat.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon local designations and Priority habitats and species. This includes impacts to water quantity and quality of the watercourses on and near to the Site, to the adjacent The Wilderness LoWS, the Priority Hedgerow habitat and nearby Lowland Mixed Deciduous Woodland Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not adversely affect the LoWS, the water quality of the watercourses and associated habitats, or the waterbodies, Hedgerows, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

The nearest extant quarry is Royal Oak Quarry which is c.1.5km to the southeast. Candidate Site A58 (Little Smiths – Danbury) is proposed which would be an extension to Royal Oak Quarry.

Site A58 is situated on the same watercourse as that near to A66 and so cumulative effects are possible to the water quality and quantity of the watercourse, which feeds into the River Chelmer and onwards to the Blackwater estuary.

Any potential for in combination effects particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A67 – Church Farm

Red/Amber

Key findings of the assessment are as follows:

- The southern boundary of Site A67 is unclear. Distances below are based upon the red line boundary shown on the GIS map. If the boundary includes the additional southern field, the distance from A67 to the River Colne and designated sites listed below would be less.

- Site A71 is 400 metres northeast of the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. These areas contain Coastal Saltmarsh and Mudflats Priority habitats. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The potential for Likely Significant Effects to the SPA, SAC and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Alresford Lodge Pits Local Wildlife Site (LoWS) is adjacent to the Site. An additional nine LoWS are found within one kilometre. The Ancient Woodlands of Crestland Wood and Oldhall Wood are 255 metres and 497 metres from the Site, respectively. The western part of the Site might comprise Acid Grassland Priority habitat. A Priority Hedgerow habitat is located on part of the western boundary and another is on the eastern boundary of the field.

- There is a candidate veteran tree in north-west corner of the Site, on the western boundary and there are several other mature trees which may have potential to be veteran or ancient trees within this western boundary Hedgerow. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran and ancient trees are irreplaceable habitat.

- The adjacent Alresford Lodge Pits LoWS contains Lowland Mixed Deciduous Woodland Priority habitat and large waterbody. Sixpenny Brook is on the other side of this; it runs roughly parallel with the western boundary and is c.70m from the extraction Site at its closest point. The access road runs through the Lowland Mixed Deciduous Woodland next to the large waterbody, and continues to the extant Alresford Quarry processing plant, via Site A71. This access road crosses Sixpenny Brook. Sixpenny Brook leads into the Colne estuary via Alresford Creek thereby creating a direct pollution pathway to it.

- The Site is graded Red/Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the River Colne and its associated international and national

designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality affecting the designated (and Priority) habitats of the River Colne and other tributary watercourses; disturbance to, and loss of functionally-linked land for, breeding and wintering birds for which the SSSI, SPA and Ramsar site are designated.

- The Site could have a moderate impact upon irreplaceable habitats, i.e. the candidate veteran tree - and the Hedgerow containing other trees which may be veteran or ancient. The Site could also have a major impact upon Local Wildlife Sites and Priority habitats and species, particularly if the habitat which may be Acid Grassland were to be removed. Hedgerows and Lowland Mixed Deciduous Woodland Priority habitats adjacent to the boundary could be affected directly and indirectly.

- Other mitigation is likely to include prevention of hydrological changes to the Woodlands and Hedgerows; substantial buffers between the Quarry and the Woodlands and Hedgerows; and prevention of deterioration of water quality to the River Colne; prevention of disturbance to breeding and non-breeding birds using the River Colne which are designation features of the SSSI, SPA and Ramsar site; watering to suppress dust; and wildlife sensitive lighting. Compensation would be required for the loss of the Acid Grassland.

- There is an access track already in place but there are narrow sections near to the hedgerows and tree lines these will need careful consideration to ensure that they are not adversely affected.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Results of the technical RAG assessment

- The southern boundary of Site A67 is unclear as it is shown just north of the track one plan entitled Essex Minerals Local Plan (2014) Review 2022 Call for Sites Church Farm (Dwg NoCFA-01, Rev A, Brett) and the GIS map. However, it includes the southern field on the restoration scheme (drawing number DR-0003 SO-P2). The latter shows the extraction continuing further south and also shows woodland as part of the restoration scheme to the south of this. Distances below are based upon the red line boundary shown on the GIS map. If the boundary includes the southern field the distance between A67 and the River Colne and the designated sites listed below would be less.

- Site A71 is 400 metres northeast of the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. It is within the SSSI Impact Risk

Zone for the Colne Estuary SSSI, SPA and Ramsar site. The Colne Local Nature Reserve is c.2.7 kilometres from the Site. These areas contain Coastal Saltmarsh and Mudflats Priority habitats. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. Golden Plover are one of the designation features for the Colne Estuary Ramsar site. The potential for Likely Significant Effects to the SPA, SAC and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Alresford Lodge Pits (Te14) Local Wildlife Site (LoWS) is adjacent to the Site. Crestland Wood Meadow (Te18) is 150 metres to the east. An additional eight LoWS are found within one kilometre. The Ancient Woodlands of Crestland Wood and Oldhall Wood are 255 metres and 497 metres from the Site, respectively.

- The Site itself is located in an arable field immediately southeast of the village of Alresford. There is a buffer between the residential area and the northern and eastern boundaries. The western part of the Site might comprise Acid Grassland Priority habitat. A Priority Hedgerow habitat is located on part of the western boundary and another is on the eastern boundary of the field.

- There is a candidate veteran tree in north-west corner of the Site, on the western boundary and there are several other mature trees which may have potential to be veteran or ancient trees within this western boundary Hedgerow. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran and ancient trees are irreplaceable habitat. There are three semi mature oak trees in the northeast corner, which are not likely to be veteran or ancient trees. They could require removal to accommodate the extraction. They could not be accessed due to the presence of a crop.

- Horse pasture and a builders' yard are west of the Site and Lowland Mixed Deciduous Woodland Priority habitat borders part of this boundary, with a large waterbody just beyond the south-western corner (the woodland and waterbody being within Alresford Lodge Pits LoWS). This lake is used for fishing and is presumed to be a former gravel pit. Sixpenny Brook runs roughly parallel with the western boundary and is c.70m from the extraction Site at its closest point. There is arable land to the south and Lowland Mixed Deciduous Woodland Priority habitat to the east. The Site is partly with an Amber Risk Zone for Great Crested Newts.

- The Site would be an extension to the existing Alresford Quarry operations. Extracted material would be transported via the haul route to the extant Alresford Quarry processing plant located 500m to the southeast. The access road runs from the southwest corner of the Site- presumably on the location of the existing track cutting through the Lowland Mixed Deciduous Woodland bordering the fishing lakes - through Site A71, and on to the processing plant. This access road

crosses Sixpenny Brook. Sixpenny Brook leads into the Colne estuary via Alresford Creek thereby creating a direct pollution pathway to it.

- As well as Alresford village and the River Colne, the surrounding area comprises arable fields, former quarry sites and patches of woodlands. There are numerous other small and large water bodies in the area many of which are likely to be derived from former gravel pits. There are multiple blocks of Lowland Mixed Deciduous Woodland Priority habitat present within 1km. Additionally, Coastal and Floodplain Grazing Marsh is found along the Colne towards Wivenhoe and Brightlingsea.

- The Site is graded Red/Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the River Colne and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with significant levels of appropriate mitigation. This includes impacts to water quality of the River Colne and tributary watercourses via surface and ground water; disturbance to and loss of functionally-linked land for breeding and wintering birds for which the SSSI, SPA and Ramsar site are designated; e.g. for Brent Geese and Golden Plover.

- The Site could have a moderate impact upon irreplaceable habitats, i.e. the candidate veteran tree - and the Hedgerow containing other trees which may be veteran or ancient. The Site could also have a major impact upon Local Wildlife Sites, one of which is adjacent to the Site, and Priority habitats and species, particularly the habitat which may be Acid Grassland if it were to be removed. Hedgerows and Lowland Mixed Deciduous Woodland Priority habitats adjacent to the boundary could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the Sixpenny Brook, Hedgerows, and woodlands e.g. Otter, bats, and Hazel Dormouse. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that there would be no adverse effects on the integrity of the SPA, Ramsar site and SAC and that the operations would not affect the hydrology of the woodlands, the River Colne and its associated habitats, veteran trees, Hedgerows, and other boundary habitats.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the candidate veteran tree, Woodlands, and Hedgerows; prevention of deterioration of water quality to Sixpenny Brook and any other tributary watercourses of the River Colne, and ecological improvements to Sixpenny Brook; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the watercourses. Compensation should be provided for loss of the Acid Grassland.

- There is an access track already in place but there are narrow sections near to the hedgerows and tree lines these will need careful consideration to ensure that they are not adversely affected.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

This Site is near to the existing Alresford Quarry processing site which is currently used to support Lufkins Farm mineral workings in Great Bentley, but there is no other gravel extraction currently being worked at Alresford Quarry. Historically, the area of Wivenhoe, Alresford and Brightlingsea along the River Colne has been subject to many mineral workings, as well as the other side of the river at Fingringhoe. The candidate Site A71 at Lodge Farm would not be worked at the same time but would be worked consecutively if both were to be allocated. The access route would be shared. Site A67 could create additional impacts to the hydrology of the local woodlands, Hedgerows, and veteran trees.

The access route crosses Sixpenny Brook and the Brook feeds into the Colne estuary via Alresford Creek. There are a number of potential cumulative impacts to the water quality and quantity of Sixpenny Brook which passes through a number of quarries between Wivenhoe and Alresford which are at various stages of development from being restored, and nearly restored to having planning permission which is not yet implemented.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include advanced habitat creation; working the candidate sites at difference times and restoring them quickly so that the minimum possible area is affected anyone time.

Any potential for in combination effects particularly to the Colne Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The extraction Site is close to Sixpenny Brook and the access route crosses it. Sixpenny Brook, feeds into the Colne estuary via Alresford Creek. There are a

number of potential cumulative impacts to the water quality and quantity of Sixpenny Brook which also runs through the new Tendring & Colchester Borders Garden Community site, which is situated north of the Site, further inland. This is because there is a direct impact pathway for water quality impacts from the Colchester Water Recycling Centre (WRC) (which will be the WRC that will serve the Tendring & Colchester Borders Garden Community), to the above Habitats sites and the above policies include measures which will increase wastewater or surface water discharges to the Colne Estuary SSSI, SPA and Ramsar site and onwards to the Essex Estuaries SAC via the WRC.

Candidate Site Reference A68 – Crabtree Farm

Amber/Green

Key findings of the assessment are as follows:

- Site A68 comprises several arable fields, separated by species poor Hedgerow Priority habitat, many of the hedgerows possessed mature trees. Adjacent to the west are two small reservoirs and a pond is located to the northwest. A wet ditch borders the northern boundary. Site A68 is not located within a Site of Special Scientific Interest Impact Risk Zone. The Site is located c. 3.4 kilometres from the Colne Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

- The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site. This potential would need to be tested with appropriate surveys at application stage.

- The Site was not found to contain any ancient, veteran and candidate veteran trees; however, there are mature trees present across the northern boundary, with features considered likely to allow those trees to become veteran in the future, given the levels of degradation. Ancient and veteran are considered to be irreplaceable habitat.

- There are three Local Wildlife Sites (LoWS) found within one kilometre of the Site. The nearest; Bentley Brook Te50, is located c. 50 metres west, which is listed as Lowland Mixed Deciduous Woodland Priority habitat and ancient woodland.

- The Site is graded Amber-Green because ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. It could have a moderate impact upon the natural environment including Priority habitats and species. This includes the direct loss of Hedgerow Priority habitat with mature trees, as well as 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 retained habitats, buffers between the Quarry and the nearby woodland, river, and hedgerows; 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 may be required for the loss of hedgerows, and loss of habitat for Priority farmland species.

Results of the technical RAG assessment

- Site A68 is not located within a Site of Special Scientific Interest Impact Risk Zone. However, the Site is located c. 3.4 kilometres from the Colne Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site. This potential would need to be tested with appropriate surveys at application stage. A wet drainage ditch borders the northern boundary and drains into Bentley Brook. Bentley Brook, which is c. 50 metres west eventually leads into the Colne estuary. Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it. The EA Catchment Data Map shows the Site is located partially within the Catchment for Holland Brook, the impact pathways to this watercourse are not known.

- There is one ancient woodland located within 500 metres of the Site, Alder Car located 50 metres west. There are no confirmed veteran and candidate veteran trees within the Site. However, there are mature trees present across the northern boundary, with features considered likely to allow those trees to become veteran in the future, given the levels of degradation. There are also a number of mature trees located within the Site's hedgerows. Ancient woodlands and ancient and veteran trees are irreplaceable habitats.

- There are three Local Wildlife Sites (LoWS) found within one kilometre of the Site. The nearest; Bentley Brook Te50, is located c. 50 metres west.

- The Site itself comprises several arable fields, separated by species poor Hedgerow Priority habitat, many of the hedgerows possessed mature trees. Adjacent to the west are two small reservoirs and a pond is located to the northwest. A wet ditch borders the northern boundary. A Barn Owl box was located on one of the mature trees located along the northern boundary. It is proposed that the new access road will be provided from Colchester Road, connecting to the Site's existing access tracks. Colchester Road A133 is located to the northwest of the Site. The existing access track borders Hedgerow Priority habitat and a ditch.

- Much of the surrounding area is dominated by arable landscape. Great Bentley, a village in Tendring, Essex is directly south of the Site. Directly west of the Site is the ancient woodland Bentley Brook Te50 LoWS. Industrial and commercial properties are located northwest of the Site. Further north, c.720 metres is the ancient woodland Little Bentley Hall. Within one kilometre of the Site there are several blocks of Lowland Mixed Deciduous Woodland Priority habitat. The Site is partly with an Amber Risk Zone for Great Crested Newts, with the majority of the Site located within a Green Risk Zone.

- The Site is graded Amber-Green because ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. It could have a moderate impact upon the natural environment including Priority

habitats and species. This includes the direct loss of Hedgerow Priority habitat with mature trees, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species.

- The Site could have a moderate impact upon Local Wildlife Sites, one of which is located in close proximity to the Site, with Bentley Brook located within the LoWS. A number of Hedgerow Priority habitat adjacent to the boundary and within the Site with mature trees could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the Hedgerows, rivers, and woodlands e.g. bats, Water Vole and Otter could be impacted. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Mitigation is likely to include prevention of hydrological changes to retained habitats, buffers between the Quarry and the nearby woodland, river, and hedgerows; 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 may be required for the loss of hedgerows, and loss of habitat for Priority farmland species.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would be a new Quarry near to existing active mineral sites at Lufkins Farm, Brightlingsea Quarry, Alresford Creek as well as to the south west. Candidate Sites (A67, A69, A71, A74 and A88 would also be nearby.

As the Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site, it could result in cumulative impacts on the functionally-linked land “bank.”

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate impacts by ensuring that the minimum possible area is affected at any one time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through

dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it. Most of the above sites are within the Colne Essex Operational Catchment Area. Therefore, there could be cumulative impacts upon water quantity and quality to the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

Any potential for in combination effects particularly to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring & Colchester Borders Garden Community and the associated road connecting the A133 and A120 are situated to the north west of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Candidate Site Reference A69 – Frating Hall

Amber

Key findings of the assessment are as follows:

- Site A69 is in located in Site of Special Scientific Interest Impact Risk Zone for the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. It is 2.3 kilometres from the Colne Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Ramsar site and Essex Estuaries Special Area of Conservation. The Site is 2.7 kilometres from the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. Additionally, the Site is 4.7 kilometres from the Colne Local Nature Reserve (LNR). The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. There is moderate potential for significant effects to the integrity of the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site. This potential would need to be tested with appropriate surveys at application stage.

- The Site was not found to contain any ancient, veteran and candidate veteran trees; However, there are mature trees present across the Site and within the Site's hedgerows. Whilst not identified on this site, ancient woodlands and ancient and veteran trees are irreplaceable habitats. There are a number of Hedgerows Priority habitat adjacent to the Site boundary and within the Site.

- Church Road Wood, Frating Te32 Local Wildlife Sites (LoWS) is c.100 metres from the Site. An additional five LoWS are found within one kilometre. Te32 is listed as Lowland Mixed Deciduous Woodland Priority habitat. There is one ancient woodland within 500 metres of the Site, Hockley Wood, which is located 400 metres south.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a moderate impact upon the Colne Estuary and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality of the Colne Estuary and other tributary watercourses via surface and ground water; disturbance to breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site are designated; and loss of functionally-linked land e.g. for Brent Geese.

- In addition, the Site could have moderate impacts upon impact upon Local Wildlife Sites, one of which is located in close proximity to the Site. A number of Hedgerow Priority habitat adjacent to the boundary and within the Site with mature trees could be affected directly and indirectly by the proposals.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Results of the technical RAG assessment

- Site A69 is 2.3 kilometres from the Colne Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Ramsar site and Essex Estuaries Special Area of Conservation. The Site is 2.7 kilometres from the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. Additionally, the Site is 4.7 kilometres from the Colne Local Nature Reserve (LNR). It is within the Site of Special Scientific Interest Impact Risk Zone for the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. The potential for Likely Significant Effects to the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site. This potential would need to be tested with appropriate surveys at application stage.

- There is one ancient woodland within 500 metres of the Site, Hockley Wood, which is located 400 metres south. There are no confirmed veteran and candidate veteran trees within the Site. However, there are mature trees present across the Site and within the Site's hedgerows. Whilst not identified on this site, ancient woodlands and ancient and veteran trees are irreplaceable habitats.

- Church Road Wood, Frating Te32 Local Wildlife Sites (LoWS) is c. 100 metres from the Site. An additional five LoWS are found within one kilometre.

- The Site itself is large and comprises several arable fields. Broadleaved woodland borders the southern end of the Site. Much of the Site is bound by mature hedgerow Priority habitat. The majority of the hedgerows on and near to the Site are Priority habitat. There is a large water body located just to the west of the Site.

- It is proposed that the access to the Site would come through the northern boundary, via Main Road A133, Frating, Essex. The Site access will require the loss of a section of hedgerow Priority Habitat.

- Much of the surrounding area is dominated by arable landscape. There are three blocks of ancient woodland located within one kilometre of the Site in the wider area. Directly south there is a large solar farm, situated next to Hockley Wood. Frating Brook is 380 metres west. The aforementioned large waterbody adjacent to the west of the Site is leads into Frating Brook. Frating Brook leads into Tenpenny Brook, which eventually links to Colne estuary. Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it.

- Within one kilometre of the Site there are several blocks of Lowland Mixed Deciduous Woodland Priority habitat. The Site is partly with an Amber Risk Zone for Great Crested Newts, with the majority of the Site located within a Green Risk Zone.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a moderate impact upon the Colne Estuary and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality of the Colne Estuary and other tributary watercourses via surface and ground water; disturbance to breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site are designated; and loss of functionally-linked land e.g. for Brent Geese.

- The Site could have a moderate impact upon Local Wildlife Sites, one of which is located in close proximity to the Site. A number of Hedgerow Priority habitat adjacent to the boundary and within the Site with mature trees could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the Hedgerows e.g. bats and Hazel Dormouse could be impacted. Hockley Wood (Te4) LoWS, located 400 metres from the Site, is regularly monitored by the Essex and Suffolk Dormouse Group and has a known population of Hazel Dormouse. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse effects on the integrity of the Colne Estuary SPA & Ramsar site and Essex Estuaries SAC and that the operations would not affect the hydrology of the River Colne and its associated habitats, hedgerows, nearby waterbody, and other boundary habitats.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the hedgerows and nearby waterbody; prevention of deterioration of

water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the 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 may be required for the loss of hedgerows, and loss of habitat for Priority farmland species.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

The Site would be a new Quarry near to existing active mineral sites at Lufkins Farm, Sunnymead and Wivenhoe Quarry and well as Alresford Creek to the southwest. Candidate Sites (A67, A68, A71, A74 and A88) would also be nearby.

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate impacts by ensuring that the minimum possible area is affected at any one time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it. Most of the above sites are within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

Any potential for in combination effects particularly to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC will need to be considered through a plan level Habitats Regulations Assessment.
Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring & Colchester Borders Garden Community and the associated road connecting the A133 and A120 are situated to the north of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Directly south there is a large solar farm, situated next to Hockley Wood which could result in cumulative impacts on protected and Priority species and habitats.

Candidate Site Reference A71 – Lodge Farm

Red/Amber

Key findings of the assessment are as follows:

- Site A71 is in a highly sensitive location. It is 130 metres from the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. These areas contain Coastal Saltmarsh and Mudflats Priority habitats. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. There is a high potential for adverse effects to the integrity of the SPA, SAC and Ramsar site which need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site also contains a number of ancient, veteran and candidate veteran trees; ancient and veteran trees are considered to be irreplaceable habitat.

- Two Local Wildlife Sites are adjacent to the Site, and there are a number of Priority habitat Hedgerows and three Lowland Mixed Deciduous Woodlands (Priority habitat) adjacent to the boundary. The Site contains Acid Grassland Priority habitat which would be lost.

- The Site is graded Red/Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the River Colne and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality affecting the designated (and Priority) habitats of the River Colne and other tributary watercourses; disturbance to, and loss of functionally-linked land for, breeding and wintering birds for which the SSSI, SPA and Ramsar site are designated.

- In addition, the Site could have major impacts upon irreplaceable habitats (veteran and ancient trees) and ancient Hedgerows, Acid Grassland and Lowland Mixed Deciduous Woodlands which are Priority habitats could be affected directly and indirectly.

- Other mitigation is likely to include prevention of hydrological changes to the Woodlands and Hedgerows; substantial buffers between the Quarry and the Woodlands and Hedgerows; and prevention of deterioration of water quality to the River Colne; prevention of disturbance to breeding and non-breeding birds using the River Colne which are designation features of the SSSI, SPA and Ramsar site; watering to suppress dust; and wildlife sensitive lighting. Compensation would be required for the loss of the Acid Grassland. Veteran and ancient trees losses are not permitted within the Government's Biodiversity Net

Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

Results of the technical RAG assessment

- Site A71 is 130 metres from the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. It is within the Site of Special Scientific Interest Impact Risk Zone for the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. The Colne Local Nature Reserve is c.2.4 kilometres from the Site. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. Golden Plover are one of the designation features for the Colne Estuary Ramsar site. The potential for Likely Significant Effects to the Colne Estuary SPA, SAC and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- There are a number of ancient, veteran and candidate veteran trees. The latter having some of the required veteran features and could develop further features through the life cycle that were not captured at the time of the survey. The majority of these border the public rights of way which cross the Site. One of these trees contained a tree beehive. Oldhall Wood Local Wildlife Site is an ancient woodland, situated 370 metres from the Site. Ancient woodlands and ancient and veteran trees are irreplaceable habitats.

- Alresford Lodge Pits (Te14) and Alresford Grange (Te11) Local Wildlife Sites (LoWS) are adjacent to the Site. An additional eight LoWS are found within one kilometre.

- The Site itself comprises predominantly two arable fields with a dense patch of bramble and elder scrub with a large mature Oak tree. There is a third field in the north which is an area of Acid Grassland Priority habitat with scattered scrub and trees. The Site is bounded by Lowland Mixed Deciduous Woodland and mature Hedgerow Priority habitat with mature, ancient, veteran and candidate veteran boundary trees. A mature Hedgerow with an ancient candidate veteran tree separates the arable fields from the area of Acid Grassland Priority habitat. Another mature Hedgerow with two candidate veteran trees crosses between the arable fields.

- The north-eastern boundary next to the arable fields comprises a grassland cover crop, and a Hedgerow (Priority habitat), with ancient boundary tree and a line of trees. Beyond the boundary is a large water body (fishing lake) presumed to be a former gravel pit. The north-western and southern boundary comprises Lowland

Mixed Deciduous Woodland Priority habitat. The south-eastern boundary comprises a mature Hedgerow containing veteran trees and beyond this is the extant Alresford Quarry processing plant. All of the hedgerows on and near to the Site are Priority habitat and likely to be ancient. It is proposed that access would be from the most eastern corner into the existing processing plant at Alresford quarry.

- To the southwest of the Site is another arable field and beyond this is the Colne estuary, containing the Colne Estuary SSSI, SPA and Ramsar site, the Essex Estuaries SAC and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. Alresford Creek is c.370 metres to the south. These areas comprise Coastal Saltmarsh and Mudflats Priority habitats. Much of the River edge is lined with Lowland Mixed Deciduous Woodland Priority habitat and scrub at this point.

- Sixpenny Brook is c.160 metres to the north-east of the Site which leads into the Colne estuary via Alresford Creek. A watercourse runs from this toward the Site, but it is not known where it leads to. Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it.

- The surrounding area away from the River Colne comprises arable fields, former quarry sites and patches of woodlands. There are numerous other small and large water bodies in the area many of which are likely to be derived from former gravel pits. There are multiple blocks of Lowland Mixed Deciduous Woodland Priority habitat present within 1km. Additionally, Coastal and Floodplain Grazing Marsh is found along the Colne towards Wivenhoe and Brightlingsea. The Site is partly with an Amber Risk Zone for Great Crested Newts.

- The Site is graded Red/Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the River Colne and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with significant levels of appropriate mitigation. This includes impacts to water quality of the River Colne and other tributary watercourses via surface and ground water; disturbance to breeding and wintering birds for which the SSSI, SPA and Ramsar site are designated; and loss of functionally-linked land e.g. for Brent Geese and Golden Plover.

- The Site could have major impacts upon irreplaceable habitats, particularly veteran trees. The Site could also have a major impact upon Local Wildlife Sites, two of which are adjacent to the Site, and Priority habitats and species, particularly the Acid Grassland which would be removed. A number of Priority habitat Hedgerows and three Lowland Mixed Deciduous Woodlands (Priority habitat) adjacent to the boundary with ancient features could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the River and associated habitats, Hedgerows, and

woodlands e.g. Otter, bats, and Hazel Dormouse. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse effects on the integrity of the Colne Estuary SPA, Ramsar site and SAC and that the operations would not affect the hydrology of the woodlands, the River Colne and its associated habitats, veteran and ancient trees, Hedgerows, and other boundary habitats.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the veteran trees, woodlands, and hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the watercourses. Compensation should be provided for loss of the Acid Grassland. Veteran and ancient trees losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations; bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

- There is an access track already in place but there are narrow sections near to the hedgerows and tree lines these will need careful consideration to ensure that they are not adversely affected.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

This Site is immediately to the west of the existing Alresford Quarry processing site which is currently used to support Lufkins Farm mineral workings in Great Bentley, but there is no other gravel extraction currently being worked at Alresford Quarry. Historically, the area of Wivenhoe, Alresford and Brightlingsea along the River Colne has been subject to many mineral workings, as well as the other side of the river at Fingringhoe. The candidate Site A67 at Church Farm- Alresford (A16) would not be worked at the same time but would be worked consecutively if both were to be allocated. The access route would be shared from A71. Site A71 could create additional impacts to the hydrology of the local woodlands, Hedgerows, and veteran trees.

The Site runs close to Sixpenny Brook; this, in turn, feeds into the Colne estuary via Alresford Creek. There are a number of potential cumulative impacts to the water quality and quantity of Sixpenny Brook which passes through a number of quarries between Wivenhoe and Alresford which are at various stages of development from being restored, and nearly restored to having planning permission which is not yet implemented.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include advanced habitat creation; working the candidate sites at difference times and restoring them quickly so that the minimum possible area is affected anyone time.

Any potential for in combination effects particularly to the Colne Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Site runs close to Sixpenny Brook; which feeds into the Colne estuary via Alresford Creek. There are a number of potential cumulative impacts to the water quality and quantity of Sixpenny Brook which also runs through the new Tendring & Colchester Borders/ Garden Community site, which is situated north of the Site, further inland. This is because there is a direct impact pathway for water quality impacts from the Colchester Water Recycling Centre (WRC) (which will be the WRC that will serve the Tendring & Colchester Borders/ Garden Community), to the above Habitats sites and the above policies include measures which will increase wastewater or surface water discharges to the Colne Estuary SSSI, SPA and Ramsar site and onwards to the Essex Estuaries SAC via the WRC.

Candidate Site Reference A72 – Martells – Southern Extension

Amber

Key findings of the assessment are as follows:

- Site A72 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood, which is located 1.92km to the west, and for Ardleigh Gravel Pit. Bullock Wood SSSI is an ancient woodland site. There is habitat connectivity between the Site and Bullock Wood SSSI but this connectivity is reduced by intervening roads. The haul road would travel over Ardleigh Gravel Pit SSSI, which is a geological SSSI situated within another part of Martells Quarry and waste site complex.

- A watercourse immediately north of the Site runs west and joins Salary Brook. Salary Brook feeds into the River Colne. The Site is c.10.5km from the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) via watercourses there is hydrological connectivity between them. In addition, Upper Colne Marshes Special Scientific Interest (SSSI) is c. 7km downstream of the Site and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.5.2 km downstream from the Site. In addition, most of Salary Brook downstream of the Site passes through a number of Local Wildlife Sites and a Local Nature Reserve. Salary Brook then joins the River Colne where it passes through more Local Wildlife Sites. There is a potential for the Site to impact water quality and quality of Salary Brook and the River Colne and their associated riparian habitats, which are mostly Priority habitats. The potential for the likely significant effects to the Colne Estuary SPA and Ramsar site, and Essex Estuaries SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Walls Wood is the closest Local Wildlife Site to the Site and is c.220m west of it. This is a relatively large site consisting of probably ancient streamside woodland. Ancient Woodland is irreplaceable habitat. There are three other Local Wildlife Sites within 1km, one of which is also Special Roadside Verge.

- Site A72 comprises two arable fields bounded by Hedgerows and lines of trees-most of which are Priority habitat-, and deciduous plantation woodland. There is mature Oak tree on the north-west boundary which is considered to be a Notable boundary feature of the Site.

- Lowland Mixed Deciduous Woodland Priority habitat is situated on part of the northern boundary and the above-mentioned watercourse flows westwards from this into Salary Brook. The northern Site boundary appears to fall within the strip of Woodland Priority habitat. This woodland is present on the first edition OS map; therefore, it could be ancient and additional investigations should be made. Ancient woodland is irreplaceable habitat.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site

could have a moderate impact upon international or national designations, through impacts to water quality. The Site could have a major impact upon Salary Brook and upon local designations, ancient woodlands and other Priority habitats and species. This includes impacts to water quantity and quality of the adjacent watercourse and Lowland Mixed Deciduous Woodland Priority habitat as the groundwater may be affected through changes to hydrology. If the adjacent woodland were to be confirmed as ancient woodland, the Site's RAG assessment would be upgraded to Red-Amber.

- Any application would require demonstration that the operations would not affect the hydrology of the watercourse and associated habitats, Salary Brook, downstream LoWS, Woodland, Hedgerows, and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats; and prevention of deterioration to water quality to the watercourses and Salary Brook. Natural England should be consulted with respect to mitigation for the haul road continuing to cover one unit of Ardleigh Gravel Pit SSSI. Compensatory habitat for Priority farmland species may be required.

Results of the technical RAG assessment

- Site A72 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood, which is located 1.92km to the west, and for part of Ardleigh Gravel Pit. Bullock Wood SSSI is an ancient woodland site. The intervening landscape between Bullock Wood and Site is predominantly arable fields with hedgerows and small patches of woodland, with some residential buildings along roads. It is on the opposite side of the A120, A137 and railway line. This reduces the potential for connectivity between the Site and Bullock Wood SSSI. Ardleigh Gravel Pit is a geological SSSI situated within a former part of Martells Quarry and waste site complex and the haul road uses an existing track which passes over Ardleigh Gravel Pit SSSI. The unit of Ardleigh Gravel Pit was classed by Natural England as 'favourable' in 2012 but is buried beneath the existing haulage track with no prospect of it being exposed until this is moved or closed.

- A watercourse immediately north of the Site runs west and joins Salary Brook, which is a Main watercourse. Salary Brook feeds into the River Colne. The Site is c.10.5km downstream of the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC); there is hydrological connectivity between them. In addition, Upper Colne Marshes Special Scientific Interest (SSSI) is c. 7km downstream of the Site and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.5.2 km downstream from the Site, where Salary Brook meets the River Colne. In addition, most of Salary Brook downstream of the Site passes through a number of Local Wildlife Sites, the closest of which is Walls Wood LoWS (reference Te6). Salary Brook LoWS is also designated as a Local Nature Reserve. Salary Brook then joins the River Colne where it passes through more Local Wildlife Sites. There is a potential for the Site to impact water quality and quality of Salary Brook, and the River Colne and their associated riparian habitats, which are mostly Priority habitats. The potential for the likely significant

effects to the Colne Estuary SPA and Ramsar site, and Essex Estuaries SAC would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- Walls Wood is the closest Local Wildlife Site to the Site and is c.220m west of it. This is a relatively large site consisting of probably ancient streamside woodland with younger woodland blocks of varying ages on the valley sides. In the central part of the stream valley, is a complex of marsh and wet woodland habitats. Ancient Woodland is irreplaceable habitat. A small component of the Site is on the same side of the A120, connected by woodland and hedgerows. There are three other Local Wildlife Sites within 1km, one of which is also Special Roadside Verge. Manor House Meadow LoWS (Te9) Springhead Corner Meadow LoWS (Te10) are upstream of the Site and both are Lowland Dry Acid Grassland Priority habitat.

- Site A72 would be an extension to the existing Martells complex and comprises two arable fields bounded by Hedgerows and lines of trees- most of which are Priority habitat-, and deciduous plantation woodland.

- A mature Oak tree, located on the north-west boundary of the Site is considered to be a Notable boundary feature of the Site. There is also a mature Ash tree located on the northern boundary on the edge of the adjacent woodland.

- The A120 is situated along the southern boundary which creates a significant barrier to the movement of wildlife in that direction. The Site is surrounded by predominantly arable and improved grassland fields; restored and unrestored areas of Martells Quarry complex including the processing plant, woodland plantation, several open water bodies and Martells industrial estate. There are farm buildings, smaller roads- including Slough Lane on the eastern boundary-, a railway line; waste transfer site; and Ardleigh Reservoir is c. 900 m to the north-west. Lowland Mixed Deciduous Woodland Priority habitat is situated on part of the northern boundary and the above-mentioned watercourse flows westwards from this into Salary Brook. Salary Brook flows southwards around the eastern boundary of Colchester. The northern Site boundary appears to fall slightly within the strip of Woodland Priority habitat. This woodland is present on the first edition OS map; therefore, it could be ancient and additional investigations should be made. Ancient woodland is irreplaceable habitat. There are several other small pockets and a small number of larger patches of Lowland Mixed Deciduous Woodland Priority habitat in the area.

- The arable field to the north of the above-mentioned perimeter strip of Lowland Mixed Deciduous Woodland is part of the extant Martells Quarry and has permission for gravel extraction, but this has not yet commenced. The haul road extends from this area. Processing would be in the existing Martells processing area and restoration would include use of inert waste.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon international or national designations, through impacts to water quality. The Site could have a major impact upon Salary

Brook and upon local designations, ancient woodlands and other Priority habitats and species. This includes impacts to water quantity and quality of the adjacent watercourse and Lowland Mixed Deciduous Woodland Priority habitat as the groundwater may be affected through changes to hydrology. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. If the adjacent woodland were to be confirmed as ancient woodland, the Site's RAG assessment would be upgraded to Red-Amber. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect Ardleigh Gravel Pit SSSI, the hydrology of the watercourse and associated habitats, Salary Brook, downstream LoWS, Woodland, Hedgerows, and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses and Salary Brook. Water run-off from the Site should not be allowed to enter directly into the watercourses. Natural England should be consulted with respect to mitigation for the haul road continuing to cover one unit of Ardleigh Gravel Pit SSSI. Compensatory habitat for Priority farmland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Site A72 would be an extension to the existing Martells Quarry which covers an extensive area to the north-east. In addition, other candidate sites are proposed for Martells Quarry including:

- A73 Martells - Western extension
- A86 (Martells - North of Frating Road (West))
- A85 (Martells - North of Frating Road (East))
- A87 (Martells - East of Slough Lane)

There are also other sites nearby, i.e.:

- Crown Quarry
- A79 (Crown Quarry - North of Wick Lane)
- A80 (Crown Quarry - South of Wick Lane)

All of these are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible.

The watercourse on the northern boundary of Site A72 also passes next to the edge of the Site A73. This could also create additional localised cumulative hydrological changes to water dependent habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. Restoration proposals for the approved western extension (ESS/29/20TEN) to the north would have ecological impacts as a result of proposed internal access track.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Colchester -Tendring Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site.
In-combination impacts on air quality and water quality would need to be assessed in a plan level Habitats Regulations Assessment report.

Candidate Site Reference A73 – Martells – Western Extension

Amber

Key findings of the assessment are as follows:

- Site A73 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood, which is located c.2km to the south-west. Bullock Wood SSSI is an ancient woodland site. There is habitat connectivity between the Site and Bullock Wood SSSI but this connectivity is reduced by intervening roads. The haul road would travel over part of Ardleigh Gravel Pit SSSI, which is a geological SSSI situated within another part of Martells Quarry and waste site complex.

- The Site is adjacent to Salary Brook (Main River) which, in turn, feeds into the River Colne. The Site is c.10km upstream of the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC). In addition, Upper Colne Marshes Special Scientific Interest (SSSI) is c. 7km downstream and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.5.2 km downstream of the Site. Most of Salary Brook downstream of the Site also passes through a number of Local Wildlife Sites and a Local Nature Reserve and the River Colne passes through more Local Wildlife Sites. There is a potential for the Site to impact water quality and quality of Salary Brook, the River Colne, and their associated Priority habitats (Mudflats, Coastal Saltmarsh and Coastal and Floodplain Grazing Marsh). The potential for the likely significant effects to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application.

- Walls Wood is the closest Local Wildlife Site to the Site and is c.220m south-west of it. This consists of probably ancient streamside woodland with younger woodland blocks. Ancient Woodland is irreplaceable habitat. A small component of the Site is on the same side of the A120, connected by woodland and hedgerows. There are three other Local Wildlife Sites within 1km, one of which is also Special Roadside Verge.

- Site A73 comprises an arable field bounded by Hedgerows and lines of trees- most of which are Priority habitat-, and deciduous plantation woodland. The site is partly within a Great Crested Newt Amber Risk Zone.

- There is a veteran tree on the eastern boundary. There is also a candidate a veteran tree near to this, which is likely to be ancient and another Candidate veteran tree on the southern boundary.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. ancient and veteran trees, and candidate veteran trees. The Site could have a major impact upon Salary Brook and upon local designations, and other Priority habitats and

species. This includes impacts to water quantity and quality of Walls Wood LoWS, the adjacent waterbodies, Traditional Orchard, and Lowland Mixed Deciduous Woodland Priority habitats. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not adversely affect Ardleigh Gravel Pit SSSI, downstream LoWS, the hydrology of the Salary Brook and associated habitats, or the waterbodies, Hedgerows, veteran and ancient trees, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses and Salary Brook. Natural England should be consulted with respect to mitigation for the haul road continuing to run over one unit of Ardleigh Gravel Pit SSSI buried beneath it. Compensatory habitat for Priority farmland species may be required.

Results of the technical RAG assessment

- Site A73 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood, which is located c.2km to the south-west. Bullock Wood SSSI is an ancient woodland site. The intervening landscape between Bullock Wood and Site is predominantly arable fields with hedgerows and small patches of woodland, with some residential buildings along roads. Bullock Wood is on the opposite side of the A120, A137 and railway line from Site A73. This reduces the potential for connectivity between the Site and Bullock Wood SSSI. The haul road uses an existing track which passes over Ardleigh Gravel Pit SSSI, which is a geological SSSI situated within another part of Martells Quarry and waste site complex. The unit of Ardleigh Gravel Pit was classed by Natural England as ‘favourable’ in 2012 but is buried beneath the existing haulage track with no prospect of it being exposed until this is moved or closed.

- The Site is adjacent to Salary Brook, which is a Main watercourse, and this in turn feeds into the River Colne. The Site is c.10km from the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) via the watercourses; there is hydrological connectivity between them. In addition, Upper Colne Marshes Special Scientific Interest (SSSI) is c. 7km downstream and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.5.2 km downstream of the Site, where Salary Brook joins the River Colne. Most of Salary Brook downstream of the Site passes through a number of Local Wildlife Sites, the closest of which is Walls Wood LoWS (reference Te6). Salary Brook LoWS is also designated as a Local Nature Reserve. Salary Brook then joins the River Colne where it passes through more Local Wildlife Sites. There is a potential for the Site to impact water quality and quality of Salary Brook, and the River Colne and their associated riparian habitats, which are mostly Priority habitats (Mudflats, Coastal Saltmarsh and Coastal and Floodplain Grazing Marsh). The potential for the likely significant effects to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application.

- Walls Wood is the closest Local Wildlife Site to the Site and is c.220m south-west of it. This is a relatively large site consisting of probably ancient streamside woodland with younger woodland blocks of varying ages on the valley sides. In the central part of the stream valley, is a complex of marsh and wet woodland habitats. Ancient Woodland is irreplaceable habitat. A small component of the Site is on the same side of the A120, connected by woodland and hedgerows. There are three other Local Wildlife Sites within 1km, one of which is also Special Roadside Verge. Manor House Meadow LoWS (Te9) and Springhead Corner Meadow LoWS (Te10) are upstream of the Site and both are Lowland Dry Acid Grassland Priority habitat.

- Site A73 would be an extension to the existing Martells complex and comprises an arable field bounded by Hedgerows and lines of trees- most of which are Priority habitat-, and deciduous plantation woodland.

- There is a veteran tree on the eastern boundary. There is also a candidate a veteran tree near to this, which is likely to be ancient and another Candidate veteran tree on the southern boundary. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran and ancient trees are irreplaceable habitat.

- Restored and unrestored areas of Martells Quarry complex, including the processing plant, woodland plantation and several open water bodies are situated to the north and east of the Site, with Martells industrial estate being located immediately beyond the north-eastern boundary. Beyond the north-western boundary is Salary Brook with several water bodies adjacent to it, as well as Lowland Mixed Deciduous Woodland Priority habitat. Salary Brook flows southwards form here around the eastern boundary of Colchester. Beyond this wetland corridor is a railway line, arable, residential, and light industrial areas, and Ardleigh Reservoir is c.670 m to the north-west. Beyond the south-west boundary is a large water body with patches of Common Reed, a small patch of Traditional Orchard and Lowland Mixed Deciduous Woodland; these are all Priority habitats. Immediately south of the Site is an arable field. This has permission for gravel extraction as part of the extant Martells Quarry, but this has not yet commenced. The haul road extends from this area. There is a small area of Lowland Mixed Deciduous Woodland Priority habitat on the southern perimeter of this field which is present on the first edition OS map; therefore, it could be ancient and additional investigations should be made. Ancient woodland is irreplaceable habitat. There are several other small pockets and a small number of larger patches of Lowland Mixed Deciduous Woodland Priority habitat in the area. Processing would be in the existing Martells processing area and restoration would include use of inert waste.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. ancient and veteran trees, and candidate veteran trees. The Site could have a major impact upon Salary Brook and upon local designations, and other Priority habitats and species. This includes impacts to water quantity and quality of the adjacent

waterbodies, Traditional Orchard, and Lowland Mixed Deciduous Woodland Priority habitats. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not adversely impact Ardleigh Gravel Pit SSSI, downstream LoWS, the hydrology of the Salary Brook and associated habitats, or the waterbodies, veteran, and ancient trees. Hedgerows and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses and Salary Brook. Water run-off from the Site should not be allowed to enter directly into watercourses. Natural England should be consulted with respect to mitigation for the haul road continuing to run over one unit of Ardleigh Gravel Pit SSSI buried beneath it. Compensatory habitat for Priority farmland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from veteran and ancient trees, watercourses, woodlands, and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A73 would be an extension to the existing Martells Quarry which covers an extensive area to the north. In addition, other candidate sites are proposed for Martells Quarry including:

- A72 Martells - Southern extension
- A86 (Martells - North of Frating Road (West))
- A85 (Martells - North of Frating Road (East))
- A87 (Martells - East of Slough Lane)

There are also other sites nearby, i.e.:

- Crown Quarry
- A79 (Crown Quarry - North of Wick Lane)
- A80 (Crown Quarry - South of Wick Lane)

All of these are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible.

The watercourse on the northern boundary of Site A72 also passes next to the southern edge of the Site A73. This could also create additional localised cumulative hydrological changes to water dependent habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. Restoration proposals for the approved western extension (ESS/29/20TEN) to the south would have ecological impacts as a result of proposed internal access track.Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Colchester -Tendring Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site.

In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Candidate Site Reference A74 – Thorrington Hall

Red/Amber

Key findings of the assessment are as follows:

- Site A74 is in a highly sensitive location. It is 280 metres from the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site, and 330 metres from the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. These areas contain Coastal Saltmarsh and Mudflats Priority habitats. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. There is a high potential for significant effects to the integrity of the SPA, SAC and Ramsar site which need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site also contains a number of ancient, veteran and candidate veteran trees; ancient and veteran trees are considered to be irreplaceable habitat.

- Two Local Wildlife Sites are adjacent to the Site, both of which are listed as Lowland Mixed Deciduous Woodland Priority habitat and ancient woodland. There are a number of Hedgerows Priority habitat adjacent to the Site boundary and within the Site.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the River Colne and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality affecting the designated (and Priority) habitats of the River Colne and other tributary watercourses; disturbance to, and loss of functionally-linked land for, breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site are designated e.g. for Brent Geese.

- In addition, the Site could have major impacts upon irreplaceable habitats (veteran and ancient trees) and ancient woodland. Hedgerows and Lowland Mixed Deciduous Woodlands which are Priority habitats could be affected directly and indirectly by the proposals.

- Other mitigation is likely to include prevention of hydrological changes to the Woodlands and Hedgerows Priority habitats; substantial buffers between the Quarry and the Woodlands and Hedgerows Priority habitats; and prevention of deterioration of water quality to the River Colne; prevention of disturbance to breeding and non-breeding birds using the River Colne which are designation features of the SSSI, SPA and Ramsar site; watering to suppress dust; and wildlife sensitive lighting. Compensation would be required for the loss of

farmland bird habitat. The loss of the veteran and ancient trees losses is not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

Results of the technical RAG assessment

- Site A74 is 280 metres from the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. The Site is 330 metres from Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. It is within the Site of Special Scientific Interest Impact Risk Zone for the Colne Estuary Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. The potential for Likely Significant Effects to the SPA, SAC and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- There are two ancient woodlands adjacent to the Site, Thorrington Hall Wood, and Rook Wood. There are a number of veteran and candidate veteran trees within the Site. The candidate veteran trees have some of the required veteran features and could develop further features through the life cycle that were not captured at the time of the survey. The majority of these are located with hedgerows which intersect the Site. Ancient woodlands and ancient and veteran trees are irreplaceable habitats.

- Thorringtonhall Wood (Te48) and Rook Wood (Te39) Local Wildlife Sites (LoWS) are adjacent to the Site. An additional nine LoWS are found within one kilometre. There is also a Special Roadside Verge found within one kilometre of the Site; Verge SV-TEN9.

- The Site itself is large and comprises several arable fields. Various crops were in rotation at the time of the survey across the Site. Broadleaved plantation woodland borders much of the Site. There is a large water body located in the southeast corner which was being used to facilitate watering of the surrounding arable fields. The water body was surrounded by young trees and bramble scrub. Mature Hedgerow Priority habitat with mature, ancient, veteran and candidate veteran boundary trees insects much of the Site and borders southeast and southwest boundaries. The majority of the hedgerows on and near to the Site are Priority habitat, except for one which borders residential gardens.

- It is proposed that the new road access to the Site is likely to be provided to the B1027 between the Thorrington Cross junction and the western edge of

Thorrington village. This corresponds the north of the Site, in the northwest most corner. This section of the northern boundary is not bordered by a hedgerow.

- The north of the Site is Thorrington Village, a small residential village in Tendring, Essex. Located directly to the east is a large deciduous woodland, listed as Mixed Lowland Deciduous Woodland Priority habitat, there is a smaller block of this habitat type located to the southeast. These two woodland blocks as previously stated are the LoWS and ancient woodland called Thorrington Hall Wood and Rook Wood. Brightlingsea Road borders the western boundary, beyond which are residential and commercial properties as well as largely arable farmland.

- Drainage ditches are present across the entire Site, bordering the majority of the arable fields. All of the ditches were dry at the time of the Site assessment; however, the survey was undertaken during a period of extended hot weather, with no rainfall. The ditch network drains into either Flag Creek, which is located approximately c. 2 kilometres to the southeast. Flag Creek or Alresford Creek is located c. 330 metres south and c. 600 metres west. Both watercourses lead into the Colne estuary. Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it.

- Within one kilometre of the Site there are a number of Priority habitats, including Lowland Mixed Deciduous Woodland, Lowland Fens, Coastal Saltmarsh, and Mudflats, as well as Coastal and Floodplain Grazing Marsh. The Site is partly with an Amber Risk Zone for Great Crested Newts, with the majority of the Site located within a Green Risk Zone.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the Colne Estuary and its associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with significant levels of appropriate mitigation. This includes impacts to water quality of the Colne Estuary and other tributary watercourses via surface and ground water; disturbance to breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site are designated; and loss of functionally-linked land e.g. for Brent Geese.

- The Site could have major impacts upon irreplaceable habitats, particularly veteran trees. The Site could also have a major impact upon Local Wildlife Sites, two of which are adjacent to the Site. A number of Hedgerows Priority habitat and Lowland Mixed Deciduous Woodlands (Priority habitat) adjacent to the boundary with ancient features could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the hedgerows and woodlands e.g. bats and Hazel Dormouse could be impacted. Hockley Wood Te41 LoWS, located 890 metres from the Site is regularly monitored by the Essex and Suffolk Dormouse Group and has a known

population of Hazel Dormouse. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse effects on the integrity of the Colne Estuary SPA & Ramsar site and Essex Estuaries SAC and that the operations would not affect the hydrology of the woodlands, the River Colne and its associated habitats, veteran and ancient trees, hedgerows, and other boundary habitats.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the veteran trees, woodlands, and hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the watercourses. Veteran and ancient trees losses are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations; bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would be a new Quarry near to existing active mineral sites at Brightlingsea Quarry, Alresford Creek as well as Lufkins Farm to the north. Candidate Sites (A67, A68, A69 and A71) would also be nearby.

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate impacts by ensuring that the minimum possible area is affected at any one time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any watercourses in these locations are likely to feed into the Colne estuary and create a direct pollution pathway to it. Most of the above sites are within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

Any potential for in combination effects particularly to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring & Colchester Borders Garden Community and the associated road connecting the A133 and A120 are situated to the north of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

To the north there is a large solar farm, situated next to Hockley Wood which could result in cumulative impacts on protected and Priority species and habitats.

Candidate Site Reference A75 – Land at Orford

Amber

Key findings of the assessment are as follows:

- The eastern boundary of Site A75 is unclear. The plans provided in Figures 1 to 3 of Appendix A show two different boundaries. Distances below are based upon the red line boundary shown on the GIS map. If the boundary includes the additional eastern section, the Site would be significantly larger.

- Site A76 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Quendon Wood SSSI which is an ancient woodland site c.2.7km to the north of the Site.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Alsa Lodge LoWS is immediately adjacent and has an important invertebrate fauna. Aubrey Buxton Reserve LoWS is 450m to the southwest and has a complex of copses, grassland, and numerous ponds. The other two LoWS are ancient woodlands.

- This Site is an undulating grassy site bounded by mature Hedgerows and trees and small patches of broadleaved woodland. The eastern boundary cuts through the middle of a field. There is a watercourse running through the Site and also a mature Hedgerow with large mature Oak trees (Priority habitat), in a separate location. These might need to be removed to accommodate the development. A Main River passes near to the western boundary of the Site, on the other side of Cambridge Road, which feeds into Stansted Brook; this which eventually feeds into the River Roding.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have major impacts upon Priority habitat, particularly if the internal Hedgerows, mature trees, and watercourse were to be removed. The Site could have a moderate impact upon irreplaceable habitats (ancient woodlands); local designations (the LoWS) and the river. Impacts could include changes to the water table, altering the water quality smothering of leaves by dust; disturbance e.g. by noise and lighting; and disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the nearby LoWS, the hydrology of the ancient woodlands, watercourses, and boundary habitats. Appropriate mitigation and compensatory habitat may be required for the loss of the Hedgerow Priority habitat, mature trees, watercourse, and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

Results of the technical RAG assessment

- The eastern boundary of Site A75 is unclear. The plans provided in Figures 1 to 3 of Appendix A show two different boundaries. Distances below are based upon the red line boundary shown on the GIS map. If the boundary includes the additional eastern section, the Site would be significantly larger.

- Site A76 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Quendon Wood SSSI which is an ancient woodland site c.2.7km to the north of the Site. There is some habitat connectivity between the Site and SSSI in the form of hedgerows and other woodland.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Alsa Lodge Pit (Ufd78) is immediately adjacent. This is a disused sand pit which, according to the LoWS citation, has an important invertebrate fauna. Aubrey Buxton Reserve (Ufd85) is 450m to the southwest; this reserve is a complex of copses, grassland, and numerous ponds. The other two LoWS are ancient woodlands.

- This proposed new Site is adjacent to Cambridge Road (B1383). It is an undulating grassy site bounded by mature Hedgerows and trees and small patches of broadleaved woodland. The eastern boundary cuts through the middle of a field. There is a watercourse running through the Site and also a mature Hedgerow (Priority habitat) with large mature Oak trees, in a separate location. These might need to be removed to accommodate the development. Processing would be on-site; restoration would include partial infilling of inert waste.

- The immediate surrounding area comprises small fields bounded by hedgerows, scattered woodlands, houses and small businesses and the above-mentioned LoWS. Lowland Mixed Deciduous Woodland Priority habitat is found just beyond the southern boundary. West of Cambridge Road are larger arable fields, and the recently restored Ugley Landfill site is to the north. A watercourse (Main River) passes near to the western boundary of the Site, on the other side of Cambridge Road, which feeds into Stansted Brook; this which eventually feeds into the River Roding.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have major impacts upon Priority habitat, particularly if the internal Hedgerows, mature trees, and watercourse were to be removed. The Site could have a moderate impact upon irreplaceable habitats (ancient woodlands); local designations (the LoWS) and the river. Impacts could include changes to the water table, altering the water quality smothering of leaves by dust; disturbance e.g. by noise and lighting; and disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the nearby LoWS, the hydrology of the ancient woodlands, watercourses, and boundary habitats. Appropriate mitigation and compensatory habitat may be required for the loss of the Priority Hedgerow habitat, mature trees, watercourse,

and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing plants and mineral stockpiles, should be located away from watercourses, woodlands and other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Ugley Landfill site is to the north has been completed and restored. Planning permission has recently been granted (ESS/66/22/UTT) for the importation of soils to allow for the re-capping and reprofiling of restored landfill; and installation of a ground-mounted solar array.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The emerging Uttlesford Local Plan has not progressed sufficiently so no site allocations are known at this stage which could result in cumulative impacts on the natural environment.

Candidate Site Reference A76 – Elsenham

Amber

Key findings of the assessment are as follows:

- Site A76 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Elsenham Woods SSSI which is an ancient woodland site. There are two separate parts to the SSSI and the closest part is located c.300 metres to the south of the Site.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Pledgdon Green LoWS is less than 12 metres to the south and Palegate Meadow is c.166m to the east, both LoWS are old grasslands. Hawland Wood is c.405m and Lady's Wood/Regents Spring is c.445m to the south. Both of these are also Ancient Woodlands, which is classed as irreplaceable habitat.

- The Site is an arable field bounded partly by ditches with scrub and Hedgerows (mostly Priority habitat), mature trees and a small area of Lowland Mixed Deciduous Woodland Priority habitat on the western boundary. There are two hedgerows within the field and a small cluster of mature Oaks and other trees within the field that could not be accessed during the survey. Skylark (a Priority species) use the Site. Stansted Brook passes near to the northwest corner of the Site, which eventually feeds into the River Roding.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have a moderate impact upon national designations (i.e. Elsenham Woods SSSI); irreplaceable habitats (ancient woodlands); local designations (the LoWS); Priority habitats and species and Stansted Brook. Impacts could include changes to the water quality of the Stansted Brook, smothering of leaves by dust, disturbance e.g. by noise and lighting. The internal hedgerows and a small number of trees of unknown quality in the field may need to be removed. It could result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the nearby LoWS, the hydrology of Elsenham Woods SSSI, ancient woodlands, watercourses, and boundary habitats. Appropriate mitigation and compensatory habitat may be required for the loss of the internal trees and hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

Results of the technical RAG assessment

- Site A76 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Elsenham Woods SSSI which is an ancient woodland site. There are two separate parts to the SSSI and the closest part is located c.300 metres to the south of the Site. There is habitat connectivity between the Site and SSSI.

- There are four Local Wildlife Sites (LoWS) within one kilometre. Pledgdon Green LoWS (Ufd144) is less than 12 metres to the south and is an ancient grassland common. Palegate Meadow Ufd149 is c.166m to the east and is also an old grassland site. Hawland Wood (Ufd153) is c.405m and Lady's Wood/Regents Spring (Ufd131) is c.445m to the south. Both of these are also ancient woodland, which is classed as irreplaceable habitat. There is habitat connectivity between the Site and the ancient woodlands although the main intervening land uses are a landfill site and arable.

- The Site is an arable field situated to the northwest of the hamlet of Pledgdon Green, south of the B1051 and west of Brick End Lane. It is bounded partly by ditches with scrub and Hedgerows (mostly Priority habitat), mature trees and a small area of Lowland Mixed Deciduous Woodland Priority habitat on the western boundary. There are two hedgerows within the field and a small cluster of mature Oaks and other trees within the field that could not be accessed during the survey. Skylarks were present at the time of the survey; these are a Priority species. The Site is partly within the Amber Great Crested Newt Risk Zone. This is an extension to the extant Elsenham Quarry. The access route (1.7 kilometres from the Site boundary) and processing infrastructure already exists. Restoration would use inert material.

- The surrounding area comprises predominantly small to large arable fields and scattered small woodlands, farm buildings and small villages. There are patches of Lowland Mixed Deciduous Woodland and Traditional Orchard Priority habitats within 1km. Elsenham Quarry and landfill and a golf course are to the southwest. Stansted Brook (Main River) passes near to the northwest corner of the Site, which eventually feeds into the River Roding.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make it acceptable. The Site could have a moderate impact upon national designations (i.e. Elsenham Woods SSSI); irreplaceable habitats (ancient woodlands); local designations (the LoWS); Priority habitats and species and Stansted Brook. Impacts could include changes to the water quality of the Stansted Brook, smothering of leaves by dust, disturbance e.g. by noise and lighting. The internal hedgerows and a small number of trees of unknown quality in the field may need to be removed. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that the operations would not affect the nearby LoWS, the hydrology of Elsenham Woods SSSI, ancient woodlands, watercourses, and boundary habitats. Appropriate mitigation and compensatory habitat may be required for the loss of the internal trees and hedgerows and habitat for Priority farmland species. Water run-off from the Site should not be allowed to enter directly into watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as mineral stockpiles, should be located away from watercourses, woodlands and

other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

This is an extension to existing Elsenham Quarry and landfill site situated to the south and southwest. This may delay other parts from being restored and could also create additional localised cumulative hydrological changes to water dependent habitats, particularly ancient woodlands.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The emerging Uttlesford Local Plan has not progressed sufficiently so no site allocations are known at this stage which could result in cumulative impacts on the natural environment.

Candidate Site Reference A77 – Westward Extension to Highwood Quarry

Amber

Key findings of the assessment are as follows:

- Site A77 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for High Woods, Dunmow SSSI which is an ancient woodland site. The SSSI is located c. 500 metres southeast of the Site, in close proximity to the existing Highwood Quarry. Ancient woodlands are classed as irreplaceable habitat. The Site borders the existing quarry site Highwood Quarry to the east. Hatfield Forest SSSI and National Nature Reserve (NNR) is c. 4.7 kilometres from the Site. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Woodpasture and Parkland Priority habitat. The River Roding is located c. 370 metres west.

- A mature willow, located along the western boundary was assessed as being likely to qualify as an ancient tree specimen. Ancient and veteran trees are irreplaceable habitats. There are a number of mature trees present along the western boundary. There are no hedgerows present on Site.

- Little Easton Airfield Local Wildlife Sites (LoWS) is partially within the Site, along the western boundary and extends one kilometre west.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. The proposals could have a moderate impact upon the natural environment including Priority habitats and species. This includes the direct impact to the on Site/ adjacent LoWS, ancient trees, which are an irreplaceable habitat, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species. Any application would require demonstration that there would be no adverse effects on the integrity of the High Woods, Dunmow SSSI, and ancient woodland and that the operations would not affect the hydrology of the River Roding.

Results of the technical RAG assessment

- Site A77 is within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for High Woods, Dunmow SSSI which is an ancient woodland site, with sections which comprise secondary woodland (Priority habitat). The SSSI is located c. 500 metres southeast of the Site, in close proximity to the existing Highwood Quarry. Ancient woodlands are classed as irreplaceable habitat. Hatfield Forest SSSI and National Nature Reserve (NNR) is c. 4.7 kilometres from the Site. Hatfield Forest is one of the largest woodlands in Essex and includes a wide range of habitats including Woodpasture and Parkland Priority habitat.

- There is one Local Wildlife Sites (LoWS) within one kilometre. Little Easton Airfield Ufd194 encroaches the western boundary. The LoWS covers the historic Little Easton former RAF airfield, which is now used primarily as a farm access track. The LoWS extends approximately one kilometre west of the Site and along

the entire western boundary, the area is bordered by strips of grassland, which includes good floristic diversity and small patches of Lowland Mixed Deciduous Woodland Priority habitat.

- The Site is a fallow arable field, surrounded by neutral grassland margins. Some sections of the show signs of being seasonally wet, with scattered rush sp. The eastern boundary is bordered by a large bund, separating the Site from the adjacent existing quarry. The bund is dominated by tussocky grassland and tall ruderal species. No hedgerows border the Site. However, the western boundary, which forms part of the adjacent LoWS is bordered by a dense strip of neutral grassland and dense scrub, which is in the early stages of succession. There are small patches of Lowland Mixed Deciduous Woodland Priority habitat along the northwest and southeast boundaries of the Site. There is a wet drainage ditch intersecting the centre of the Site.

- No veteran trees were identified on or adjacent to the Site. However, a mature willow, located along the western boundary was assessed as being likely to qualify as an ancient tree specimen. Ancient and veteran trees are irreplaceable habitats.

- Existing access tracks located around the entirety of the Site will be utilised and there will be new access along the eastern boundary, from the existing minerals site. The Site access along the east will require the loss of neutral grassland.

- The wider area is dominated by arable landscape. Great Dunmow, Essex is approximately 1.8 kilometres east. The small village Little Easton, Essex is located 600 metres north. The River Roding is 370 metres west of the Site, the on Site drainage ditch does not connect to the river directly. The Site falls within two catchments, the Upper Roding (to Cripsey Brook) and Chelmer (Gt Easton – R. Can).

- Within one kilometre of the Site there are several blocks of Lowland Mixed Deciduous Woodland and Traditional Orchard Priority habitat. The Site is wholly within a Green Risk Zone for Great Crested Newts. However, the pond located within the adjacent Little Easton Airfield LoWS is known to have a ‘good’ population of Great Crested Newts through publicly available survey data submitted in relation to a proposed nearby residential development. The pond is c.650 metres west of the Site.

- The Site is graded Amber because ecological impacts are likely to be moderate and it is likely to require medium levels of mitigation to make the Site acceptable. The proposals could have a moderate impact upon the natural environment including Priority habitats and species. This includes the direct impact to the adjacent LoWS, ancient trees, which are an irreplaceable habitat, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species.

- The Site could have a moderate impact upon Local Wildlife Sites, one of which is located in partially within the Site. A number of mature trees could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of

leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the adjacent band of scrub and grassland habitat e.g. bats, Great Crested Newts and reptiles could be impacted. Reptile surveys which have been undertaken within this section of the Site have previously recorded the presence of Common Lizard on Site. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse effects on the integrity of the High Woods, Dunmow SSSI, and ancient woodland and that the operations would not affect the hydrology of the River Roding.

- Mitigation may include - but not be limited to - substantial buffers between the Site and the LoWS and nearby waterbody; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the 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 may be required for the loss of any habitat within the LoWS, and loss of habitat for Priority farmland species.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

This is an extension to existing Highwood Quarry situated to the southeast. This may delay other parts from being restored and could also create additional localised cumulative hydrological changes to water dependent habitats, particularly ancient woodlands.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

<u>Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.</u>

The emerging Uttlesford Local Plan has not progressed sufficiently so no site allocations are known at this stage which could result in cumulative impacts on the natural environment.

Candidate Site Reference A79 – Crown Quarry – North of Wick Lane

Amber

Key findings of the assessment are as follows:

- Site A79 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood, and Cattawade Marshes SSSI and Stour Estuary Special Protection Area (SPA) and Ramsar site. Ardleigh Gravel Pit is 2.3km from the Site; this is a geological SSSI and so ecological impacts are not considered further. Bullock Wood SSSI is on the opposite side of the A120; this road creates a substantial barrier to the movement of species, except birds. Lapwing and Brent Goose are both listed on the waterbird assemblage for the Stour Estuary Special Protection Area and it is possible that the Site could be used by these species as functionally linked land for the SPA. However, the SPA is c4.7km to the northeast and there are numerous fields in between, and so the likelihood of the Site being used by a significant proportion of the population (greater than 1%) is considered to be low.

- There is hydrological connectivity between the Site and Ardleigh Reservoir. Water leaving the Reservoir feeds into Salary Brook (Main River) which, in turn, feeds into the River Colne. Given the distance and intervening reservoir it is not expected for there to be water quality impacts to the designated sites and Priority habitats downstream including Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site, Essex Estuaries Special Area of Conservation (SAC). Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone, Local Wildlife Sites and Local Nature Reserve, The potential for likely significant effects to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application, but Likely Significant Effects from air and water quality impacts have been scoped out due to the distance and the intervening reservoir, based on professional judgement.

- There are two Local Wildlife Sites (LoWS) within 1 km. Birch Wood, Langham LoWS is also an ancient woodland; the intervening landscape includes Lowland Mixed Deciduous Woodland Priority habitat and hedgerows creating habitat connectivity.

- The Site is predominantly an arable field bordered by hedgerows which are mostly Priority habitat. Lowland Mixed Deciduous Woodland Priority habitat is adjacent to the northern Site boundary. A small area of Lowland Mixed Deciduous Woodland and a pond are on the Site in the north-east corner. It appears from the Block Proposals Plan that these would be retained. There is a Hedgerow (Priority habitat) which protrudes into the field and would be lost to the development. There are several mature Oak trees on the boundaries which are Notable or significant boundary features of the Site. The southern boundary runs along Wick Lane; this is a narrow road with boundary hedgerows (Priority habitat) on either side. The Site would require a road crossing point, including visibility splays, across Wick Lane, which would require removal of sections of Hedgerow Priority habitat.

- The Site is graded Amber because ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the natural environment including Ardleigh Reservoir and Priority habitats and species, including the direct loss of Hedgerow Priority habitat. This also includes impacts to water quantity and quality of the watercourses on and near to the Site; to Priority Hedgerow habitat and adjacent Lowland Mixed Deciduous Woodland Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not adversely affect the water quality of Ardleigh Reservoir, the watercourses and associated habitats, Hedgerows mature trees, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Results of the technical RAG assessment

- Site A79 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood (1.7km to the southwest) and Cattawade Marshes SSSI and Stour Estuary Special Protection Area (SPA) and Ramsar site, which are c4.7km to the northeast. Ardleigh Gravel Pit is 2.3km from the Site; this is a geological SSSI and so ecological impacts are not considered further. Bullock Wood SSSI is on the opposite side of the A120; this road creates a substantial barrier to the movement of species except birds. The intervening landscape between the Site and Cattawade Marshes SSSI and Stour Estuary SPA and Ramsar site is mainly arable fields with small villages and plant nurseries. Lapwing and Brent Goose are both listed on the Waterbird assemblage for the Stour Estuary Special Protection Area and it is possible that the land could be used by these species as functionally linked land. However, given the distance and the numerous fields between these designated sites and Site A79, the likelihood of the Site being used by a significant proportion of the population (greater than 1%) is considered to be low.

- A watercourse runs through the woodland to the north which feeds into Ardleigh Reservoir; this watercourse is c.15 m at its closest point from the boundary. A ditch in the northeast corner of the Site feeds into this. Water leaving the Reservoir feeds into Salary Brook (Main River) which, in turn, feeds into the River Colne. The Site is over 12km upstream of the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC). In addition, Upper Colne Marshes Special Scientific Interest (SSSI) is c. 9 km downstream and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.7 km downstream of the Site. Most of Salary Brook and the River Colne downstream also pass through a number of Local Wildlife Sites and a Local Nature Reserve. There is a potential for the Site to impact water quality of Salary Brook, the River Colne, and their associated Priority habitats (Mudflats, Coastal Saltmarsh and Coastal and Floodplain Grazing Marsh). The potential for likely significant effects to the Stour Estuary SPA and Ramsar site, Colne Estuary SPA and Ramsar site and the Essex

Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application but Likely Significant Effect from water quality impacts have been scoped out due to the distance and the intervening large public reservoir (Ardleigh), based on professional judgement.

- There are two Local Wildlife Sites (LoWS) within 1 km. Birch Wood, Langham LoWS (ref. Co151) is c. 475 m north-west of the Site; this is an ancient woodland. The intervening landscape includes Priority Woodland Habitat and hedgerows creating habitat connectivity.

- The Site is predominantly an arable field bordered by hedgerows which are mostly Priority habitat. Lowland Mixed Deciduous Woodland Priority habitat is adjacent to the northern Site boundary. There is a mature Oak tree located on this woodland edge which is a significant boundary feature of the Site. A small area of Lowland Mixed Deciduous Woodland and a pond are on the Site in the north-east corner. It appears from the Block Proposals Plan that these would be retained. Another tree on the northern boundary – towards the western end- is notable boundary feature of the Site. There are two mature Oak trees on the eastern boundary which are significant or Notable boundary features. There are also two areas of horse grazed paddocks within the boundary and a Hedgerow (Priority habitat) which protrudes into the field but does not extend all the way across it and would be lost to the development. The southern boundary runs along Wick Lane; this is a narrow road with boundary hedgerows (Priority habitat) on either side. The Site is within an Amber Great Crested Newt Risk Zone.

- The Site would be an extension to the extant Crown Quarry and would utilise the existing processing plant. Inert waste would be used as part of the restoration. The Site would require a road crossing point -including visibility splays- across Wick Lane and an internal access road at Crown Quarry. This would require removal of sections of Hedgerow Priority habitat along this narrow lane.

- Site A80 is surrounded by predominantly agricultural landscape, with relatively small fields bounded by hedgerows in an historically fruit growing area with some arable. There are a few very small patches of Traditional Orchard Priority habitat and some much larger patches of Lowland Mixed Deciduous Woodland Priority habitat. There is a patch of Traditional Orchard c.75 m north of the Site, to the north of the Lowland Mixed Deciduous Woodland on the northern boundary. To the south and west is the extant Crown Quarry and to the south-east is Ardleigh Reservoir which is a large public reservoir managed by Anglian Water.

- The Site is graded Amber because ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the natural environment including Ardleigh Reservoir and Priority habitats and species, including the direct loss of Hedgerow Priority habitat. It also includes direct and indirect impacts to water quantity and quality of the watercourses on and near to the Site; to Hedgerow Priority habitat and adjacent Lowland Mixed Deciduous Woodland Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting.

The Site could also result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not adversely affect the water quality of the watercourses and associated habitats, or the waterbodies, Hedgerows, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

The Site would be an extension to the extant Crown Quarry to the southwest. Candidate Site A80 (Crown Quarry - South of Wick Lane) would also be adjacent. In addition, Martells Quarry is nearby and other candidate sites are proposed for including:

- A72 Martells - Southern extension
- A73 Martells - Western extension
- A85 (Martells - North of Frating Road (East))
- A86 (Martells - North of Frating Road (West))
- A87 Martells – East of Slough Lane

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat and farmland habitats and associated Priority species in the area.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Most of the above sites are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible, although water would have to pass through Ardleigh Reservoir this first. Numerous LoWS and a Local Nature Reserve are found downstream along Salary Brook. Salary Brook feeds into the River Colne containing the Upper Colne Marshes SSSI, Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

Any potential for in combination effects particularly to the Stour Estuary SPA and Ramsar site, Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring -Colchester Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report. but Likely Significant Effects from air and water quality impacts have been scoped out due to the distance and the intervening reservoir, based on professional judgement.

Candidate Site Reference A80 – Crown Quarry – South of Wick Lane

Amber

Key findings of the assessment are as follows:

- Site A80 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood (1.75km to the southwest). Bullock Wood SSSI is on the opposite side of the A120; this road creates a substantial barrier to the movement of species. Ardleigh Gravel Pit is 2.3km from the Site; this is a geological SSSI and so ecological impacts are not considered further.

- It is considered possible that there would be hydrological connectivity between the Site and Ardleigh Reservoir. Water leaving the Reservoir feeds into Salary Brook (Main River) which, in turn, feeds into the River Colne. Given the distance and intervening reservoir it is not expected for there to be water quality impacts to the designated sites and Priority habitats downstream including Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site, Essex Estuaries Special Area of Conservation (SAC). Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone, Local Wildlife Sites and Local Nature Reserve, The potential for likely significant effects to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application, but Likely Significant Effects from air and water quality impacts have been scoped out due to the distance and the intervening reservoir, based on professional judgement.

- There are two Local Wildlife Sites (LoWS) within 1 km. Birch Wood, Langham LoWS is c. 90 m north-west of the Site; this is an ancient woodland. The intervening landscape includes Lowland Mixed Deciduous Woodland Priority habitat and hedgerows, creating habitat connectivity.

- The Site sits within a relatively small arable field to the south of Wick Lane. Wick Lane is a narrow road with boundary hedgerows (Priority habitat) on either side. There is also a line of trees on the eastern boundary. The Hedgerows are Priority habitats. There is a small area of Lowland Mixed Deciduous Woodland Priority habitat 100 metres to the east of the Site. The Site would utilise the existing processing plant via a new internal access road. This access road would cross through the field to the south and would then have to cut through an area of Lowland Mixed Deciduous Woodland Priority habitat. This would result in the loss of a small section of woodland dissecting the two remaining segments.

- The Site is graded Amber because ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the natural environment including Ardleigh Reservoir and other surrounding waterbodies. The Site could have a moderate impact upon Priority habitats and species including the Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not adversely affect the water quality of the nearby waterbodies, Hedgerows, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Results of the technical RAG assessment

- Site A80 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Bullock Wood (1.75km to the southwest). Bullock Wood SSSI is on the opposite side of the A120; this road creates a substantial barrier to the movement of species. Ardleigh Gravel Pit is 2.3km from the Site; this is a geological SSSI and so ecological impacts are not considered further.

- There are no watercourses between the Site and Ardleigh Reservoir, but they are 180 metres apart and the intervening landscape comprises two waterbodies. It is therefore considered possible that there would be hydrological connectivity between the Site and Ardleigh Reservoir. Water leaving the Reservoir feeds into Salary Brook (Main River) which, in turn, feeds into the River Colne. The Site is over 12km upstream of the Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC). Upper Colne Marshes Special Scientific Interest (SSSI) is c. 9 km downstream and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone is c.7 km downstream of the Site. Most of Salary Brook and the River Colne downstream also pass through a number of Local Wildlife Sites and a Local Nature Reserve. There is a potential for the Site to impact water quality of Salary Brook, the River Colne and their associated designated sites and Priority habitats (Mudflats, Coastal Saltmarsh and Coastal and Floodplain Grazing Marsh). The potential for likely significant effects to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC would need to be considered further through a plan-level Habitats Regulations Assessment and any subsequent planning application, but Likely Significant Effects from air and water quality impacts are scoped out due to the distance and the intervening large public reservoir (Ardleigh) based on professional judgement.

- There are two Local Wildlife Sites (LoWS) within 1 km. Birch Wood, Langham LoWS (ref. Co151) is c. 90 m north-west of the Site; this is an ancient woodland. The intervening landscape includes Lowland Mixed Deciduous Woodland and hedgerow Priority Habitats, creating habitat connectivity. Ardleigh Reservoir Grassland LoWS (Te3) is 0.93km to the south; this mosaic contains grassland, scrub and a small Alder and Willow woodland.

- The Site sits within a relatively small arable field to the south of Wick Lane. Wick Lane is a narrow road with boundary hedgerows (Priority habitat) on either side. There is also a line of trees on the eastern boundary. The Hedgerows are Priority habitats. There is a small area of Lowland Mixed Deciduous Woodland Priority habitat 100 metres to the east of the Site. The Site is within an Amber Great Crested Newt Risk Zone.

- The Site would be an extension to the existing Crown Quarry and would utilise the existing processing plant via a new internal access road. Inert waste would be used as part of the restoration. The access road would head in a south-westerly direction crossing through the field to the south. It would then have to cut through an area of Lowland Mixed Deciduous Woodland Priority habitat to reach the existing Crown Quarry. This would result in the loss of a small section of woodland dissecting the two remaining segments.

- Site A80 is surrounded by predominantly agricultural landscape with relatively small fields bounded by hedgerows in an historically fruit growing area with some arable. To the south and west is the extant Crown Quarry, with numerous restored waterbodies in the vicinity. There is an area of recently restored quarry containing a large water body immediately to the east. There are two more water bodies to the south and the existing Ardleigh Reservoir is 180 metres to the south-east, which is a large public reservoir managed by Anglian Water. There are a few small, scattered patches of Traditional Orchard Priority habitat and a few much larger patches of Lowland Mixed Deciduous Woodland Priority habitat.

- The Site is graded Amber because ecological impacts are likely to be moderate and is likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the natural environment including Ardleigh Reservoir and other surrounding waterbodies. The Site could have a moderate impact upon Priority habitats and species including the Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not adversely affect the water quality of the waterbodies, the Lowland Mixed Deciduous Woodland Priority habitat, Hedgerows, and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would be an extension to the extant Crown Quarry to the southwest. Candidate Site A79 (Crown Quarry - North of Wick Lane) would also be adjacent.

In addition, Martells Quarry is nearby and other candidate sites are proposed for including:

- A72 Martells - Southern extension
- A73 Martells - Western extension
- A85 (Martells - North of Frating Road (East))
- A86 (Martells - North of Frating Road (West))
- A87 Martells – East of Slough Lane

The Site could create additional loss of, and disturbance to farmland habitats and associated Priority species in the area.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Most of the above sites are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible, although water would have to pass through Ardleigh Reservoir this first. Numerous LoWS and a Local Nature Reserve are found downstream along Salary Brook. Salary Brook feeds into the River Colne containing the Upper Colne Marshes SSSI, Colne Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring -Colchester Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report. but Likely Significant Effects from air and water quality impacts have been scoped out due to the distance and the intervening reservoir, based on professional judgement.

Candidate Site Reference A82 – Colemans Farm – Elm Springs Extension

Amber

Key findings of the assessment are as follows:

- The River Blackwater is situated 140 metres the northwest of Site A82 and there are watercourses near to the Site's boundaries which feed into the River. These create a potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on sloping land and comprises two arable fields. Several areas of Lowland Mixed Deciduous Woodland Priority habitat are situated on the boundaries of the Site. A section of Elm Springs Woodland Priority habitat will require removal to allow access from Site A49.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect the hydrology of the nearby habitats. Substantial buffers are likely to be required near to the Lowland Mixed Deciduous Woodland Priority habitat and watercourses to prevent water quantity impacts; their water quality must not be affected by the proposals. The Priority woodland habitat and watercourse directly affected would need to be adequately and appropriately compensated.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone. However, the adjacent River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation approximately 12km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the River Blackwater and is c. 9.5km at its closest point. The Site is also c.2.2km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A82 and these statutory sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- West Hall Wood Complex (Ma48) LoWS is c.500m to the southeast, which is Ancient Replanted Woodland. The intervening land is predominantly arable with hedgerows (Priority habitat) and a small light industrial area. Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.700m to the northeast of the Site.

- The Site itself is situated on sloping land in the Blackwater valley in a predominately arable area. The works will involve dewatering and filling with inert waste. The Site comprises two fields, mostly bounded by lines of trees and hedgerows, with mature trees in places. There are several areas of Lowland Mixed Deciduous Woodland Priority habitat next to the Site; these contain several ponds as well as a watercourse in the woodland on the north-eastern boundary (Elm Springs). Part of this woodland would require removal to create access from Site A49. Further areas of Lowland Mixed Deciduous Woodland Priority habitat and two small patches of Traditional Orchard Priority habitat are present within 1km of the Site.

- The River Blackwater is 140 metres to the northwest of the Site at its closest point. There is a watercourse on part of the southern boundary and this and the watercourse in Elm Springs eventually feed into the River. There are several large water bodies- presumed to be reservoirs- within 1 kilometre, the closest of which is c.120m west of the Site. The Site is partly within the Amber Great Crested Newt Risk Zone. A large residential property with a meadow is immediately to the east of the Site and a farm buildings complex is at the western end. The extant site of Colemans Farm Quarry is on the other side of the River Blackwater to the northeast; some of the Quarry is active.

- The A12 is c.940 metres east of the Site. The materials would need to be transported across the River Blackwater in order to be processed, either by vehicles over a new bridge or on a field conveyor. Options for this would depend on whether or not the A12 widening project goes ahead, but the route options are not shown on a plan and so impacts are unclear.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the River Blackwater and upon local designations and other Priority habitats and species. This includes impacts to water quantity of the River Blackwater and woodland Priority habitats; water quality of the River and other watercourses and disturbance to protected and Priority species using the River corridor e.g. otters and bats. The Site's groundwater may be affected, which in turn could affect nearby water dependent riparian and Lowland Mixed Deciduous Woodland Priority habitats through changes to the hydrology. In addition, a section of Elm Springs woodland would require removal, resulting in loss of habitat connectivity within of this long narrow woodland. It could also result in smothering of leaves by dust; disturbance e.g. by noise and lighting; and disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the woodland Priority habitats, watercourses, the River Blackwater and its associated habitats, trees and other boundary habitats and not create a significant barrier for the movement mobile species- e.g. bats and Hazel Dormouse. Mitigation may include - but not be limited to - substantial buffers between the Site and the woodlands and hedgerows; provision of alternative methods for species to move between the two sections of the dissected Elm Springs woodland; prevention of deterioration of water quality to the River and its

tributary watercourses; ecological improvements to the watercourses; adequate and appropriate compensatory habitat for the loss of Priority woodland habitat and habitat for Priority farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and east of Site A82 and extending on both sides of the River Blackwater. Site A82 would be worked in conjunction with - and ahead of -Site A49.

The Site proposer has provided a spreadsheet entitled ‘Colemans Quarry working sequencing- extensions promoted under Essex MLP.’ This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for the lifetime of the Site many years.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly on the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at Colemans Quarry and the land the west of A82. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A83 – Colemans Farm – Hole Farm

Amber/Green

Key findings of the assessment are as follows:

- The River Blackwater is c.65 metres east of the Site there are several watercourses on or near to the Site which feed into the River. These create potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on low-lying land east of the A12 and comprises arable fields and contains several watercourses. An area of Lowland Mixed Deciduous Woodland Priority habitat is located next to the Site, near the River.

- The Site is graded Amber/Green because it could have a moderate impact upon the River Blackwater, local designations and Priority habitats and species - including the nearby Lowland Mixed Deciduous Woodland Priority habitat and farmland species- and are likely to require low levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect on-site and off-site habitats. Buffers are likely to be required near to watercourses and their water quality must not be affected by the proposals.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest Impact Risk Zone. However, the River Blackwater is c.65 metres from the Site and this River feeds into the Blackwater Estuary SSSI, Special Protection Area (SPA) and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC) approximately 14.5km downstream. It is also c.4km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A83 and these designated sites, with respect to water quality and water quantity. The potential for Likely Significant Effects, particularly to the Blackwater Estuary and Ramsar site and the Essex Estuaries SAC, will need to be considered through a plan-level Habitats Regulations Assessment and any subsequent planning application.

- Kelvedon Hall Wood (Ma52) Local Wildlife Site (LoWS) is c.540m east of the Site; Braxted Park (Ma44) LoWS is c.600m to the southeast of the Site. Both LoWS are on the opposite side of the River Blackwater.

- The Site itself is situated on relatively flat low-lying land near the bottom of the Blackwater Valley. The groundwater lies approximately 2m below existing surface levels and the Site would involve dewatering and filling with inert waste. It comprises one large arable field and two smaller fields. The boundaries of the northern eastern half of the Site do not follow the field boundaries. Ditches, lined

with trees or hedgerow Priority habitat - follow part of the northern and southern boundaries at the southwestern end of the Site and there are two internal ditches lined with trees and scrub. The River Blackwater – a Main Watercourse- with associated low-lying habitats is situated to the east and is c.65 metres at its closest point. All of the above watercourses feed into the River Blackwater.

- Lowland Mixed Deciduous Woodland Priority habitat is found beyond the eastern boundary and on the opposite bank of the River Blackwater, and there are a number of areas of broadleaved deciduous plantation woodlands along the River corridor.

- Immediately to the southeast of the Site are the grounds of the Essex County Fire & Rescue Service headquarters which contain a large pond and mature trees. To the south are arable fields and the extant Colemans Quarry. Immediately west of the Site is the A12, which creates a substantial barrier to connectivity for species. Further afield are arable fields, Rivenhall End village and the River Blackwater and associated habitats continue along the valley. The Site is within an Amber Great Crested Newt Risk Zone.

- The Site is graded Amber/Green because ecological impacts could be minor and are likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon the River Blackwater, local designations and Priority habitats and species. The Site could have moderate impacts upon the nearby Lowland Mixed Deciduous Woodland Priority habitat. This includes impacts to water quantity and quality of the River Blackwater and other watercourses. The Lowland Mixed Deciduous Woodland Priority habitat and Broadleaved deciduous plantation woodland could be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks

- Any application would require demonstration that the operations would not affect the hydrology of the River Blackwater and its associated habitats, nearby woodlands, trees, and other boundary habitats. Mitigation may include - but not be limited to - buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses.
- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and south of A83 and extending on the other side of the River Blackwater. Site A50 is immediately to the north of the existing Colemans Quarry and a single planning consent would be sought to facilitate the working of the sand and gravel from this Site, A84 and A50.

The Site proposer has provided a spreadsheet entitled 'Colemans Quarry working sequencing- extensions promoted under Essex MLP.' This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for the lifetime of the Site.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

East- housing

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would affect the land immediately to the west of A83. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for the Quarry's extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to

the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

The proposed allocation is partially within an area that has been allocated for employment use under Policy LLP 4 of the Local Plan 2013-2033 North Essex Authorities' Shared Strategic Section 1 Plan– Braintree Council. Site A83 could be brought forward to align with developments in this area and this should be considered in scheduling the sequencing of the Colemans Quarry candidate sites.

Candidate Site Reference A84 – Colemans Farm – Appleford Farm North Extension

Amber

Key findings of the assessment are as follows:

- The River Blackwater follows the length of the eastern boundary and there are three other watercourses on or near to the Site which feed into the River. These create potential pollution pathway for water quality between the proposed mineral Site and a number of statutory wildlife sites. The potential for Likely Significant Effects, particularly on the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation will need to be considered through a plan-level Habitats Regulations Assessment.

- The Site is situated on low-lying land and comprises two arable fields; an area of Lowland Mixed Deciduous Woodland Priority habitat is located next to the Site, to the east of the River.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect the hydrology of on-site and off-site habitats. Substantial buffers are likely to be required near to the River Blackwater and other watercourses and their water quality must not be affected by the proposals.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest Impact Risk Zone. However, the River Blackwater feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation about 13.5km downstream. It is also c.3.3km upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the adjacent River Blackwater and other watercourses create a potential pollution pathway between A84 and these statutory designated sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects, particularly to the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- Braxted Park (Ma44) Local Wildlife Site (LoWS) is c.170m to the southeast of the Site on rising land on the opposite side of the River Blackwater. Braxted Park is an extensive mosaic of semi-improved meadows, broadleaved woodland, parkland, open water and beds of Common Reed and sedges with several veteran Oak trees and networks of good hedgerows. A second LoWS is within 1km of the Site.

- The Site itself is situated on relatively flat low-lying land at the bottom of the Blackwater valley. The groundwater lies approximately 2m below existing surface levels and so the Site will involve dewatering and filling with inert waste. It

comprises two arable fields mostly bounded by trees, with mature trees in places. The southwestern boundary crosses through the middle of an arable field. The River Blackwater – a Main Watercourse- with associated low-lying habitats follows the eastern boundary and has a line of trees and scrub running along most of its western edge. A tributary of the River Blackwater follows the southern boundary, which is also lined with trees and scrub. There is also a ditch following the northern boundary and another following the field boundary within the middle of the Site. All of these watercourses feed into the River Blackwater.

- To the east of the Site is an area of Lowland Mixed Deciduous Woodland Priority habitat on the opposite bank of the River Blackwater and there are a number of other areas of broadleaved deciduous woodlands, some of which are plantations. Immediately to the north of the Site is an area of broadleaved deciduous plantation woodland and arable fields and the River Blackwater and associated habitats continue along the valley.

- Immediately to the northeast of the Site are the grounds of the Essex County Fire & Rescue Service headquarters which contain a large pond and mature trees. To the south are arable fields and the extant Colemans Quarry. 150 metres to the west is the A12, which creates a substantial barrier to connectivity for species. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a major impact upon the natural environment including the River Blackwater and local designations and Priority habitats, and species, including the Lowland Mixed- Deciduous Woodland Priority habitat. This includes impacts to water quantity of the River Blackwater and woodlands; water quality of the River and other watercourses; disturbance to protected and Priority species using the River corridor e.g. Otters and bats. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Nearby off-site Lowland Mixed Deciduous Woodland Priority habitat and Broadleaved deciduous plantation woodland could also be indirectly affected e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. It could also result in loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not affect the hydrology of the River Blackwater and its associated habitats, trees, and other boundary habitats. Mitigation may include – but not be limited to – substantial buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul

roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

A number of other Candidate sites are proposed along the river corridor to the north and south of A84 and extending on the other side of the River Blackwater. Site A50 is immediately to the north of the existing Colemans Quarry and a single planning consent would be sought to facilitate the working of the sand and gravel from this Site and A50.

The Site proposer has provided a spreadsheet entitled 'Colemans Quarry working sequencing- extensions promoted under Essex MLP.' This shows how the candidate sites would be phased between 2027 to 2044.

There are a number of potential cumulative impacts to the River Blackwater, the valley and associated habitats and species along the corridor for a significant stretch of the river. There would be a greater potential to impact the hydrology, altering the water table, and thereby impacting ground water dependent habitats. There could also be changes to water quality. The cumulative impacts could result in changes to habitats along the corridor and affect the movement of mobile protected and Priority species such as Otters and bats for the lifetime of the Site.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Mitigation may include creation and enhancement of riparian habitats; advanced habitat creation; working the candidate sites in sequence and restoring them quickly so that the minimum possible area is affected anyone time.

Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would directly affect land at Colemans Quarry and the land immediately to the west of A84. This does not yet have consent. Indeed, the Quarry proposes to provide materials to construct this road and is, to an extent, a driver for

the Quarry’s extensions. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A85 – Martells – North of Frating Road (East)

Amber/Green

Key findings of the assessment are as follows:

- Site A85 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Cattawade Marshes SSSI, Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site. There is no known pollution pathway between Site A85 and these statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. The access road passes next to Ardleigh Gravel Pit SSSI, which is a geological SSSI.

- There are two Local Wildlife Sites within 500 metres of the Site.

- The Site would be an extension to the existing Martells Quarry complex and comprises part of a large arable field which is partly bordered by hedgerows, mature trees, and woodland. The Site is bordered by Little Bromley Road and Morrow Lane; these have mature trees and hedgerows (Priority habitat) on either side. There is a patch of Woodland beyond the eastern boundary, which is believed to be plantation woodland.

- The internal access road would need to cross Morrow Lane into site A86 and be shared with this Site. This would require removing a section of hedgerow. The haul road continues southwards following the eastern boundary of the field to the south-west of A85, it crosses Frating Road, passes through another arable field and heads westwards, passing next to Ardleigh Gravel Pit SSSI and cutting through the field boundary trees and plantation woodland.

- The Site is graded Amber-Green because ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. The Site could have a minor impact upon a national designation- i.e. Ardleigh Gravel Pit SSSI and moderate impact upon Priority habitats and species, including impacts to Priority Hedgerow habitat. The Site could also result in disturbance and loss of habitat for Priority farmland species.

- Any application would require demonstration that the operations would not adversely affect Ardleigh Gravel Pit SSSI, Hedgerows and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and hedgerows and tree lines. Compensatory habitat for Priority farmland species may be required.

Results of the technical RAG assessment

- Site A85 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Cattawade Marshes SSSI, Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site. Cattawade Marshes is c.3.7km north of the Site. There is no known pollution pathway- e.g.,

hydrological connectivity- between Site A85 and these statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. The access road passes next to Ardleigh Gravel Pit SSSI, which is a geological SSSI.

- There are two Local Wildlife Sites within 500 metres of the Site.

- There is an Oak tree located on the south-eastern boundary which is a significant boundary feature.

- The Site would be an extension to the existing Martells Quarry complex and comprises part of a large arable field which is partly bordered by hedgerows, mature trees, and woodland. The Site is bordered by Little Bromley Road and Morrow Lane. These have mature trees and Hedgerows (Priority habitat) on either side. There is a patch of woodland beyond the eastern boundary, which is believed to be plantation woodland. The Site is partly within a Great Crested Newt Amber Risk Zone.

- The internal access road would need to cross Morrow Lane into site A86 and be shared with this Site. This would require removing a section of Hedgerow. The haul road continues southwards following the eastern boundary of the field to the south-west of A85, it crosses Frating Road, passes through another arable field and heads westwards, passing next to Ardleigh Gravel Pit SSSI and cutting through the field boundary trees and plantation woodland. Processing would be in the existing Martells processing area. The Site would require dewatering and restoration would include use of inert waste.

- The Site is surrounded by predominantly small to medium arable fields and fruit farms, with hedgerows, patches of Lowland Mixed Deciduous Woodland Priority habitat, scattered farm buildings. There is a water body c.65m north of the Site. Restored and unrestored areas of Martells Quarry complex including the processing plant, woodland plantation, several open water bodies and Martells industrial estate is situated to the south-west.

- The Site is graded Amber-Green because ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. The Site could have a minor impact upon a national designation- i.e. Ardleigh Gravel Pit SSSI and moderate impact upon Priority habitats and species, including impacts to Hedgerow Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that the operations would not adversely affect Ardleigh Gravel Pit SSSI, hedgerows and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and hedgerows and tree lines. Compensatory habitat for Priority farmland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses and existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A85 would be an extension to the existing Martells Quarry which covers an extensive area to the south-west. In addition, other candidate sites are proposed for Martells Quarry including:

- A72 Martells - Southern extension
- A73 Martells - Western extension
- A85 (Martells - North of Frating Road (East))
- A87 Martells - East of Slough Lane

There are also other sites nearby, i.e.:

- Crown Quarry
- A79 (Crown Quarry - North of Wick Lane)
- A80 (Crown Quarry - South of Wick Lane)

All of these are in the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Colchester -Tendring Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Candidate Site Reference A86 – Martells – North of Frating Road (West)

Amber

Key findings of the assessment are as follows:

- Site A86 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Cattawade Marshes SSSI, Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site. There is no known pollution pathway between Site A86 and these statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. The access road passes next to Ardleigh Gravel Pit SSSI, which is a geological SSSI.

- There are two Local Wildlife Sites within 500 metres of the Site.

- There is a candidate veteran Oak tree located on the north-eastern boundary which may also be ancient. Veteran and ancient trees are irreplaceable habitat.

- The Site comprises part of a large arable field which is partly bordered by hedgerows and mature trees. The Site is situated between Little Bromley Road, Morrow Lane, Frating Road and a railway line. Little Bromley Road, Morrow Lane are narrow lanes with mature trees and Hedgerows (Priority habitat) on either side. The internal access road would follow the eastern boundary of the field to the south of the main Site area, pass through another arable field, pass immediately north of the Ardleigh Gravel Pit SSSI and cross through field boundary trees and plantation woodland.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats i.e. the candidate veteran tree which is potentially ancient. The Site could have a minor impact upon a national designation- i.e. Ardleigh Gravel Pit SSSI and moderate impact upon Priority habitats and species, particularly to Hedgerow Priority habitat. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g., Skylarks.

- Any application would require demonstration that the operations would not affect Ardleigh Gravel Pit SSSI, Hedgerows and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and the candidate veteran tree which is potentially ancient, a notable boundary feature tree, Hedgerows, and tree lines. Compensatory habitat for Priority farmland and wetland species may be required.

Results of the technical RAG assessment

- Site A86 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Cattawade Marshes SSSI, Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site. Cattawade

Marshes is c.3.65km north of the Site. There is no known pollution pathway- e.g., hydrological connectivity- between Site A86 and these statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. The access road passes next to Ardleigh Gravel Pit SSSI, which is a geological SSSI.

- There are two Local Wildlife Sites within 500 metres of the Site.

- There is a candidate veteran Oak tree located on the north-eastern boundary. The circumference was not measured but given its size, it could also be afforded Ancient Status. There is another Mature Oak located nearby which is considered a notable boundary feature. Candidate veteran trees have some of the required veteran features and have the potential to develop further features during the tree's life cycle that were not captured at the time of the survey. Veteran and ancient trees are irreplaceable habitat.

- The Site would be an extension to the existing Martells Quarry complex and comprises part of a large arable field which is partly bordered by hedgerows, mature trees, and woodland. The Site is situated between Little Bromley Road, Morrow Lane, Frating Road and a railway line. Little Bromley Road, Morrow Lane are narrow lanes with mature trees and Hedgerows (Priority habitat) on either side. There is a patch of Lowland Mixed Deciduous Woodland Priority habitat to the west, just beyond the railway line, which itself is lined with trees. The Site is partly within a Great Crested Newt Amber Risk Zone. The Site would require dewatering.

- The internal access road would follow the eastern boundary of the field to the south of the main Site area, cross Frating Road, pass through another arable field and head westwards north of the Ardleigh Gravel Pit SSSI and cross through the field boundary trees and plantation woodland. Processing would be in the existing Martells processing area and restoration would include use of inert waste.

- The Site is surrounded by predominantly small to medium arable fields and fruit farms, with hedgerows, patches of Lowland Mixed Deciduous Woodland Priority habitat, scattered farm buildings and the residential area of Ardleigh. There is a water body c.175m north-east of the Site Salary Brook is c.230 south-west of the Site. Restored and unrestored areas of Martells Quarry complex including the processing plant, woodland plantation, several open water bodies and Martells industrial estate is situated to the south and south-west.

- The Site is graded amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats i.e. the candidate veteran tree which is potentially ancient. The Site could have a minor impact upon a national designation- i.e. Ardleigh Gravel Pit SSSI and moderate impact upon Priority habitats and species. This includes impacts to Hedgerow Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and

lighting. The Site could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not adversely affect Ardleigh Gravel Pit SSSI, Hedgerows and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and the candidate veteran tree which is potentially ancient, the notable boundary feature, Hedgerows, and tree lines. Compensatory habitat for Priority farmland and wetland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A86 would be an extension to the existing Martells Quarry which covers an extensive area to the south-west. In addition, other candidate sites are proposed for Martells Quarry including:

- A72 Martells - Southern extension
- A73 Martells - Western extension
- A86 (Martells - North of Frating Road (West))
- A85 (Martells - North of Frating Road (East))

There are also other sites nearby, i.e.:

- Crown Quarry
- A79 (Crown Quarry - North of Wick Lane)
- A80 (Crown Quarry - South of Wick Lane)

All of these are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible.

The watercourse on the northern boundary of Site A73 also passes next to the edge of the Site A73. This could also create additional localised cumulative hydrological changes to water dependent habitats.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created

habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Colchester -Tendring Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Candidate Site Reference A87 – Martells – East of Slough Lane

Amber

Key findings of the assessment are as follows:

- Site 87 is just within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for the Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site. There is no known pollution pathway between Site A87 and the statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. Ardleigh Gravel Pit SSSI is on the northern boundary of the Site; this is a geological SSSI.

- There are two Local Wildlife Sites within one kilometre of the Site.

- The Site comprises an arable field which is partly bordered by hedgerows and woodland. A Hedgerow with a watercourse, and patches of Lowland Mixed Deciduous Woodland Priority habitat border part of the Site, on the southern corner. This area is part of Ardleigh Park and is part of an area of former historic parkland. Deciduous plantation woodland habitat is situated on part of the north-western boundary and beyond this is an open waterbody. The woodland is within the boundary of one part of Ardleigh Gravel Pit SSSI and the trees could potentially impact this geological SSSI, as outlined above.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon a national designation- i.e. Ardleigh Gravel Pit SSSI and upon Priority habitats and species. This includes impacts to water quantity and quality of the adjacent watercourse, waterbody, Lowland Mixed Deciduous Woodland, and Hedgerow Priority habitats. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland and wetland species.

- Any application would require demonstration that the operations would not adversely affect Ardleigh Gravel Pit SSSI, the hydrology of the watercourse, waterbody, Woodlands, Hedgerows, and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses and waterbody. Natural England should be consulted with respect to mitigation for Ardleigh Gravel Pit SSSI. Compensatory habitat for Priority farmland and wetland species may be required.

Results of the technical RAG assessment

- Site 87 is just within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for the Stour Estuary SSSI and Stour and Orwell Estuaries Special Protection Area (SPA) and Ramsar site which are located 5.2km to the north-east. There is no known pollution pathway- e.g. hydrological connectivity-

between Site A87 and the statutory sites. However, the potential for the likely significant effects to the Stour and Orwell SPA and Ramsar site would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application. Ardleigh Gravel Pit SSSI is on the western boundary of the Site. This is a geological SSSI. The unit of Ardleigh Gravel Pit is classed by Natural England as 'favourable.' Natural England advises that, "The deposits remain undisturbed below water level. The creation of an exposure and/or borehole investigation is possible on the strip of grass along the northeast bank despite tree growth along the water's edge. "

- There are two Local Wildlife Sites within one kilometre of the Site.

- The Site would be an extension to the existing Martells complex and comprises an arable field which is partly bordered by hedgerows and woodland. The Site is partly within a Great Crested Newt Amber Risk Zone. Waders (Swans and Geese) were seen loafing in middle of the field. The Site would require dewatering. Processing would be in the existing Martells processing area and restoration would include use of inert waste.

- A Hedgerow with a watercourse, and areas of Lowland Mixed Deciduous Woodland Priority habitat border part of the Site, on the southern corner. This area to the south is part of Ardleigh Park and is shown on the first edition OS map as historic parkland. Deciduous plantation woodland habitat is situated on part of the north-western boundary and beyond this is an open water body bordered by Common Reed and Crack Willow, which is part of the restored area of the quarry. This is in the same location as Ardleigh Gravel Pit SSSI and the trees could potentially impact this geological SSSI, as outlined above. And arable field and a grass seeded area are adjacent to the eastern boundary. The extant Martells Quarry and waste site is adjacent to the western border which is currently in the process of being restored.

- The Site is surrounded by predominantly arable fields with hedgerows and scattered farm buildings, residential areas of Great Bromley. Park Road is c.155 to the east beyond this is a solar array. To the west are restored and unrestored areas of Martells Quarry complex including the processing plant, woodland plantation, several open water bodies and Martells industrial estate to the west.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon a national designation- i.e., Ardleigh Gravel Pit SSSI and upon Priority habitats and species. This includes impacts to water quantity and quality of the adjacent watercourse, waterbody, Lowland Mixed Deciduous Woodland, and Hedgerow Priority habitat. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting. The Site could also result in disturbance and loss of habitat for Priority farmland and wetland species, e.g., Skylarks.

- Any application would require demonstration that the operations would not affect Ardleigh Gravel Pit SSSI, the hydrology of the watercourse, waterbody, Woodland, Hedgerows, and other boundary habitats. Mitigation may include - but

not be limited to - an adequate and appropriate buffer between the Site and these habitats and prevention of deterioration to water quality to the watercourses and. Water run-off from the Site should not be allowed to enter directly into the watercourses. Natural England should be consulted with respect to mitigation for Ardleigh Gravel Pit SSSI. Compensatory habitat for Priority farmland and wetland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Site A87 would be an extension to the existing Martells Quarry which covers an extensive area to the west. In addition, other candidate sites are proposed for Martells Quarry including:

- A72 Martells - Southern extension
- A73 Martells - Western extension
- A86 (Martells - North of Frating Road (West))
- A85 (Martells - North of Frating Road (East))

There are also other sites nearby, i.e.:

- Crown Quarry
- A79 (Crown Quarry - North of Wick Lane)
- A80 (Crown Quarry - South of Wick Lane)

All of these are in the Salary Brook Water Body, within the Colne Essex Operational Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the Salary Brook and the River Colne are possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Colchester -Tendring Borders Garden Community- and associated road connecting the A133 and A120 are situated to the south-east of the Site In-combination impacts on air quality and water quality would need to be assessed in a plan level Habitats Regulations Assessment report.

Candidate Site Reference A88 – Gurnhams Farm

Red/Amber

Key findings of the assessment are as follows:

- Site A88 is in a moderately sensitive location. It is just within the Site of Special Scientific Interest Impact Risk Zone for Weeleyhall Wood Site of Special Scientific Interest (SSSI), which is located 2.8 kilometres southeast. Additionally, the Site is 5.1 kilometres from the Colne Estuary SSSI, Special Protection Area (SPA), Ramsar site and Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Site is 5.8 kilometres from Hamford Water SSSI, SPA, SAC, Ramsar and National Nature Reserve (NNR). Similar to the Colne Estuary, Hamford Water is an important area for overwintering waterbirds in the UK and is of international importance for several breeding bird species. There is a moderate potential for significant effects to the integrity of the SPA, SAC and Ramsar sites which need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site and Hamford Water SPA and Ramsar site. This potential would need to be tested with appropriate surveys at application stage.

- The Site is within the Holland Brook catchment, which discharges to the sea at Holland on Sea. Holland Haven Marshes SSSI (7.1 kilometres from the Site), Upper Holland Brook LoWS (4.7 kilometres from the Site) and Great Holland Pits LoWS (7.8 kilometres from the Site) are all located along Holland Brook. The pollution pathways from the nearby watercourses to the Holland Haven Marshes SSSI and nearby LoWS would need to be assessed. Any watercourses in these locations are likely to feed into the Holland Brook catchment. Therefore, they could result in cumulative impacts upon water quantity and quality to the Holland Haven Marshes SSSI. Due to the location of the Site and relevant catchments, Hamford Water and Colne estuary are not expected to be impacted directly or indirectly by pollution pathways.

- Two ancient woodlands border the Site to the south and east. There are mature trees present across the Site and within the Site's hedgerows. Ancient woodlands are classed as irreplaceable habitats.

- Two Local Wildlife Sites are adjacent to the Site, both of which are listed as Lowland Mixed Deciduous Woodland Priority habitat and ancient woodland. There are a number of Hedgerows Priority habitat adjacent to the Site boundary and within the Site.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable.

Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the Colne Estuary and Hamford Water and their associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate mitigation to the satisfaction of Natural England. This includes impacts to water quality of the Colne Estuary and other tributary watercourses via surface and ground water; disturbance to breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site and Hamford Water SSSI, SPA, SAC, Ramsar and NNR are designated; and loss of functionally-linked land e.g. for Brent Geese. Additionally, the proposals could have a serious impact upon the natural environment including Priority habitats and species. This includes the direct impact to the nearby Local Wildlife Site and ancient woodland, which is an irreplaceable habitat, mature trees, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species.

- In addition, the Site could have major impacts upon irreplaceable habitat, the Site is adjacent to two ancient woodlands. Hedgerows and Lowland Mixed Deciduous Woodlands which are Priority habitats could be affected directly and indirectly by the proposals. Substantial buffers between the Site, adjacent ancient woodlands and the hedgerows and nearby waterbody are likely to be needed. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, There should be the prevention of disturbance to breeding and non-breeding birds using the River Colne and Hamford Water which are designation features of those SSSI, SPA and Ramsar sites, woodlands, and the other existing habitats.

- The loss of irreplaceable habitat, with regard to the adjacent ancient woodland is not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement. Compensation would also be required for the loss of farmland Priority species habitat.

Results of the technical RAG assessment

- Site A88 is just within the Site of Special Scientific Interest Impact Risk Zone for Weeleyhall Wood Site of Special Scientific Interest (SSSI), which is located 2.8 kilometres southeast. Additionally, the Site is 5.1 kilometres from the Colne Estuary SSSI, Special Protection Area (SPA), Ramsar site and Essex Estuaries Special Area of Conservation and the Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone. The Colne Estuary is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. The Site is 5.8 kilometres from Hamford Water SSSI, SPA, SAC,

Ramsar and National Nature Reserve (NNR). Similar to the Colne Estuary, Hamford Water is an important area for overwintering waterbirds in the UK and is of international importance for several breeding bird species. Hamford Water SPA is designated for breeding Ringed Plover and Redshank and wintering Brent Geese and Black-tailed Godwit. The potential for Likely Significant Effects to the SPA, SAC and Ramsar sites would need to be considered further through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site and Hamford Water SPA and Ramsar. This potential would need to be tested with appropriate surveys at application stage.

- There are two ancient woodlands adjacent to the Site, these woodlands are also listed as Local Wildlife Sites (LoWS), High Barn Wood Te59 and Shair Wood Te64. An additional three LoWS are found within one kilometre.

- There are no confirmed veteran and candidate veteran trees within the Site. However, there are mature trees present across the Site boundaries. There are also a number of mature trees located within the Site's hedgerows. Ancient woodlands and ancient and veteran trees are irreplaceable habitats.

- The Site itself is large and comprises several arable fields, some of which were in crop rotation and others which are being maintained as short, modified grassland. There are a number of existing farm tracks within the Site and the majority of the fields are bordered by mature hedgerow Priority habitats. Broadleaved, ancient woodland borders a small, central southern portion of the Site boundary and another small block of broadleaved, ancient woodland borders a small section of the eastern boundary. Additionally, there are two other blocks of broadleaved woodland north and northeast, adjacent to the boundary. All of the surrounding woodland blocks are Lowland Mixed Deciduous Woodland Priority habitat. A wet ditch borders the western boundary and connects to a watercourse c. 85 metres north of the Site. There are a number of dry drainage ditches across the Site, bordering the fields.

- It is proposed that the access to the Site would come through the southwestern boundary, via Church Road, Clacton-on-Sea. There is an existing farm track present where access is proposed. The farm track is bordered either side by dense hedgerow, Priority habitats.

- Much of the surrounding area is dominated by arable landscape. The large LoWS Little Bentleyhall Wood Te53 is c. 750 metres northwest. To the east there is a large waterbody, which appears to be a reservoir from aerial imagery, however, this waterbody was not accessed. Great Bentley, Essex is southwest of the Site and Weeley, Essex is southeast of the Site. The watercourse c. 85 metres north of the Site is bordered by broadleaved trees and is located adjacent to broadleaved woodland.

- The Site is within the Holland Brook catchment, which discharges to the sea at Holland on Sea. Holland Haven Marshes SSSI (7.1 kilometres from the Site), Upper Holland Brook Te98 LoWS (4.7 kilometres from the Site) and Great Holland Pits Te09 LoWS (7.8 kilometres from the Site) are all located along Holland Brook. Holland Haven Marshes SSSI is designated for the presence of several nationally scarce aquatic plants and botanically important grasslands. The pollution pathways from the nearby watercourses to the Holland Haven Marshes SSSI and nearby LoWS would need to be assessed. Any watercourses in these locations are likely to feed into the Holland Brook catchment.

- Within one kilometre of the Site there are several blocks of Lowland Mixed Deciduous Woodland Priority habitat. The Site is partly with an Amber and Green Risk Zone for Great Crested Newts, the entire central section of the Site from the northwest boundary to the southeast corner are within Amber Risk Zones.

- The Site is graded Red-Amber because ecological impacts are likely to be major and it is likely to require high levels of mitigation to make the Site acceptable. Detailed studies combined with a Habitats Regulations Assessment (Appropriate Assessment) would be required to assess whether the Site would have a major impact upon the Colne Estuary and Hamford Water and their associated international and national designations and whether the adverse effects on the integrity of internationally important wildlife sites could be avoided with appropriate levels of mitigation to the satisfaction of Natural England. This includes impacts to water quality via surface and ground water; disturbance to breeding and wintering birds for which the Colne Estuary SSSI, SPA and Ramsar site and Hamford Water SSSI, SPA, SAC, Ramsar and NNR are designated; and loss of functionally-linked land e.g. for Brent Geese. Additionally, the proposals could have a serious impact upon the natural environment including Priority habitats and species. This includes the direct impact to the nearby Local Wildlife Site and ancient woodland, which is an irreplaceable habitat, mature trees, as well as potential hydrological impacts to retained habitats, and loss of and disturbance to habitats for Priority farmland species.

- A number of Hedgerows Priority habitat and Lowland Mixed Deciduous Woodlands (Priority habitat) adjacent to the boundary with ancient features could be affected directly and indirectly; e.g. through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. In addition, other protected and Priority species using the hedgerows and woodlands e.g. bats, Hazel Dormouse, Water Vole and Otter could be impacted. It could also result in disturbance and loss of habitat for Priority farmland species, e.g. Skylark.

- Any application would require demonstration that there would be no adverse effects on the integrity of the Colne Estuary SPA & Ramsar site and Essex Estuaries SAC and Hamford Water SSSI, SPA, SAC, Ramsar and NNR, particularly with regard to functionally-linked land and qualifying features. There would also need to be demonstration that the operations would not affect the hydrology of the River Colne.

- Mitigation may include - but not be limited to - substantial buffers between the Site, adjacent LoWS, ancient woodlands and the hedgerows and nearby

waterbody. With regard to ancient woodlands, assessments and recommendations for buffers should include an impact assessment of method of working and buffers to avoid damage. Mitigation should include the prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Surface water run-off from the Site should not be allowed to enter directly into the 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 may be required for the loss of hedgerows, and loss of habitat for Priority farmland species. Pertaining to the adjacent ancient woodland, losses of irreplaceable habitat are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations; bespoke compensation would be required, which could not count towards any Biodiversity Net Gain requirement.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

The Site would be a new Quarry near to existing active mineral sites at Lufkins Farm, as well as Brightlingsea Quarry and Alresford Creek to the southwest and Wivenhoe Quarry and Sunnymead to the west. Candidate Sites (A67, A68, A69, A71 and A74 would also be nearby.

As the Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site, it could result in cumulative impacts on the functionally-linked land "bank."

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat and farmland habitats and associated protected species in the area, particularly Hazel Dormouse.

Advanced habitat creation, working this and the other nearby candidate sites in sequence and restoring them quickly, may help to alleviate impacts by ensuring that the minimum possible area is affected at any one time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through

dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any watercourses in these locations will to feed into the Holland Brook. Therefore, result in cumulative impacts upon water quantity and quality to the Holland Haven Marshes SSSI. Due to the location of the Site and relevant catchments, Hamford Water and Colne estuary are not expected to be impacted directly or indirectly by pollution pathways.

Any potential for in combination effects particularly to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The Tendring & Colchester Borders Garden Community and the associated road connecting the A133 and A120 are situated to the northwest of the Site. In-combination impacts on air quality and water quality would need to be assessed in a plan level HRA report.

Candidate Site Reference A89 – Covenbrooke Hall Farm

Amber/Green

Key findings of the assessment are as follows:

- Site A89 comprises three arable fields bounded by deciduous plantation woodland and an internal ancient hedgerow and strip of broadleaved deciduous plantation woodland. There is an ancient hedgerow and (partly dry ditch) – which is Priority habitat - on the eastern boundary adjacent to the plantation woodland. The internal hedgerow is Priority habitat and has a single significant mature boundary Oak tree. The internal hedgerow and broadleaved deciduous plantation woodland would be removed. There is another ancient hedgerow and associated ditch on the south of the woodland plantation that is located on the northern boundary.

- The eastern boundary contains ancient Field Maple trees and a locally notable Oak tree that is a prominent boundary feature of the Site.

- The River Blackwater is to the north and east and is c.420 metres at its closest point, with Coastal and Floodplain Grazing Marsh Priority habitat identified adjacent to the River, less than 300 m from the Site. There is hydrological and habitat connectivity between the Site and the Blackwater valley via a watercourse, Hedgerows and Lowland Deciduous Woodland Priority habitat.

- The Site is designated Amber /Green as ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. It could have a moderate impact upon Priority habitats and species. This includes the direct loss of an ancient hedgerow within a mature tree, and loss of the central broadleaved plantation woodland and a small section on western boundary, as well as 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 retained habitats, buffers between the Quarry and the woodlands and Hedgerows; 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 may be required for the loss of Hedgerows, woodland, watercourses, and loss of habitat for Priority farmland species.

Results of the technical RAG assessment

- Site A89 is a new site which comprises three arable fields bounded by deciduous plantation woodland and an internal ancient hedgerow and strip of broadleaved deciduous plantation woodland. There is an ancient hedgerow and (partly dry ditch) – which is Priority habitat - on the eastern boundary adjacent to the plantation woodland with mature oaks and Field Maple trees. The internal hedgerow is Priority habitat and has a single significant mature boundary Oak

tree. The internal hedgerow and broadleaved deciduous plantation woodland would be removed. There is another ancient hedgerow and associated ditch on the south of the woodland plantation that is located on the northern boundary.

- The eastern boundary contains ancient Field Maple trees and a locally notable Oak tree that is a prominent boundary feature of the Site. No veteran features evident, therefore, would not be considered a veteran or candidate specimen.

- The Site is situated immediately north of the A120 and less than 400m east of the urban area of Braintree and the A131. These create a barrier to the movement of wildlife. The Site is surrounded by predominantly arable fields with hedgerows and scattered Lowland Mixed Deciduous Woodland and buildings, and some development along the A120. The River Blackwater is to the north and east and is c.420 metres at its closest point, with Coastal and Floodplain Grazing Marsh Priority habitat identified by Natural England adjacent to the River, less than 300 m from the Site. There is hydrological and habitat connectivity between the Site and the Blackwater valley via a watercourse, Hedgerows and Lowland Deciduous Woodland Priority habitat. There is a golf course to Northeast, on the other side of the River Blackwater.

- Bocking Blackwater Local Nature Reserve is c.395m west of the Site, on the other side of the A131. Temple Border Wood Local Wildlife Site (reference Bra 110) is partly ancient woodland and is c.340m south of the Site on the opposite side of the A120. The Site is partly within Amber Great Crested Newt Risk Zone Amber Zone.

- Processing would be undertaken on the western edge of the Site with a new access being created through the woodland to Kings Lane. The Site would require dewatering and restored using inert waste.

- The Site is designated Amber /Green as ecological impacts are likely to be minor and may require low levels of mitigation to make the Site acceptable. It could have a moderate impact upon the natural environment including Priority habitats and species. This includes the direct loss of an ancient hedgerow within a mature tree, and loss of the central broadleaved plantation woodland and a small section on western boundary, as well as 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 retained habitats, buffers between the Quarry and the woodlands and hedgerows; 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 may be required for the loss of hedgerows, plantation woodland, watercourses, and loss of habitat for Priority farmland species.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses and

should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the watercourses.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A89 is close to sites A93 (Land at Pattiswick Hall Farm - Full Site) and A92 (Land at Pattiswick Hall Farm - Small Site). South east of the A120 is the existing Blackwater quarry complex and three additional candidates sites are also proposed here. Site A48 is particularly close to the River Blackwater.

All of the above listed sites are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

Strategic growth locations BOCN 132 and BOCN 137 are located on the northern edge of Braintree town, as set out in Braintree Local Plan Part Two, would be close to the River Blackwater. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

Candidate Site Reference A90 – Rayne Quarry – Northern Extension

Amber

Key findings of the assessment are as follows:

- There is a veteran Oak tree located to the north-east of the Site on the boundary and another on the south-east of the Site on the boundary. Veteran trees are classed as irreplaceable habitat.

- The Site is bounded by Hedgerows and ditches (Priority habitat) on the northern and eastern boundaries. On the south and south-western boundary are plantation woodlands. Skylarks are present on-site which are a Priority species.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. the veteran trees. The Site could have a moderate impact upon Priority habitats and species including Hedgerows and disturbance and loss of habitat for Priority farmland species. This includes impacts to water quantity and quality of the watercourses.

- Any application would require demonstration that the operations would not affect the hydrology of the veteran trees, hedgerows, and other boundary habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats, particularly the veteran trees, and prevention of deterioration to water quality to the watercourses. Water run-off from the Site should not be allowed to enter directly into watercourses. Compensatory habitat for Priority farmland species may be required.

Results of the technical RAG assessment

- There are three Local Wildlife Sites within 1km of Site A96. Rumley Wood LoWS (reference Bra34) is c.280m and Golden Grove (Bra 36) LoWS c.500m to the north-west of the Site. Both are ancient woodland which is an irreplaceable habitat. Old Hall, Essex Special Roadside Verge is c.135m to the north-east on Pods Lane.

- Site A96 is an irregular shaped arable field; this Site would be an extension to Rayne Quarry. Preparations for this relatively new quarry to the south-west have started.

- There is a veteran Oak tree located to the north-east of the Site on the boundary and another mature Oak tree, located to the south-east of the Site on the boundary. It would not qualify as a veteran based on its features, however, as it has a stem diameter of 4.5m it is considered a veteran based on its girth. Veteran trees are classed as irreplaceable habitat.

- The Site is bounded by Hedgerows and ditches (Priority habitat) on the northern and eastern boundaries. On the south and south-western boundary are plantation

woodlands. Skylarks are present on-site which are a Priority species. The Site is mostly within a Great Crested Newt Amber Risk Zone.

- The Site is situated between Blake End and Rayne in a predominantly arable area. There are scattered patches of Lowland Mixed Deciduous Woodland Priority habitat and scattered residential properties and farm buildings. Pods Brook (Main River) is 750 metres to the east at its closest point.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. the veteran trees. The Site could have a moderate impact upon Priority habitats and species including Hedgerows and disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. This includes impacts to water quantity and quality of the watercourse. In addition, smothering of leaves by dust, disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the veteran trees, hedgerows and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats, particularly the veteran trees, and prevention of deterioration to water quality to the watercourses Water run-off from the Site should not be allowed to enter directly into watercourses. Compensatory habitat for Priority farmland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from veteran tree, watercourses, woodlands, and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Site A90 would be an extension to the existing Bradwell Quarry to the south. Candidate Site A47 (Rayne Quarry - Southern Extension) would extend Rayne Quarry further southwards.

The Site could create additional loss of, and disturbance to, Hedgerow Priority habitat, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A91 – Land at Chignal St James

Amber/Green

Key findings of the assessment are as follows:

- The area to be extracted is a large arable field situated to the north-east of the former Roxwell Quarry complex which is currently being restored. The River Can is c.260 m south-west of the extraction site and could be affected during the transportation of the materials off-site. There is hydrological connectivity between the River Can and the proposed minerals operations; a conveyor would be used at this point of the transportation process.

- Nearby riparian habitats along the River Can include several areas of Lowland Mixed Deciduous Woodland Priority habitat, floodplain grassland and broadleaved deciduous plantation woodland.

- The Site is graded Amber/Green because it could have a moderate impact upon the River Can and Priority habitats and species -including the nearby Lowland Mixed Deciduous Woodland Priority habitat and farmland Priority species. It is Likely to require low levels of mitigation to make the Site acceptable. The Site's groundwater may be affected, which in turn could affect habitats. Buffers are likely to be required near to Hedgerows, woodland and watercourses and their water quality must not be affected by the proposals.

Results of the technical RAG assessment

- This is a new Site and the area due to be extracted is currently a large arable field bounded in part by Hedgerows which are priority habitat. The northern and eastern boundaries are set away from any field boundaries.

- The Site is set in a predominantly arable area. The River Can is circa 260 m south-west of the extraction site. This is classed as Main River and is part of the Chignall Brook Water Body which falls within Chelmer Operational Catchment (as defined by the Environment Agency). There is a watercourse running between extraction site and the River, thereby creating hydrological connectivity between them. Riparian habitats along the River include several areas of Lowland Mixed Deciduous Woodland Priority habitat, floodplain grassland and broadleaved deciduous plantation woodland. Nightingale Wood Local Wildlife Site is just less than 1 km to the north-west of the Site. The extraction area is not within an Amber Great Crested Newt Risk Zone except for a very small area in the Western corner. However, much of the access route is within an Amber Great Crested Newt Risk Zone.

- Beyond the River Can, to the south and east of the proposed mineral extraction area is the former Roxwell Quarry Complex, which is currently being restored, predominately to arable and grassland ley under Planning consent ESS/70/17/CHL. There are a number of large open water bodies associated with the former quarry workings. In the area, there are also scattered farms, residential properties, and light industrial buildings.

- Minerals would be conveyed under Mashbury Road through an existing culvert and to the former Roxwell Quarry Complex; they would be exported from here to the A1060 on HGVs via an existing haul road created for use by Rowell Quarry. The extraction site is approximately 2km from the A1060. The Site is also connected to the Roxwell Quarry Complex via an existing access track, which is not proposed for use by HGV vehicles. The conveyor belt proposed would follow a similar course as this access track. These would need to cross River Can and would travel parallel with the associated riparian habitats for nearly 400 m along or need to an existing track. It is not clear whether any processing would occur on Site, or where this would be carried out. Inert waste would be used to help restore the Site. There are areas of scattered scrub; however, the Open Mosaic Habitat on Previously Developed Land on Previously Developed Land identified by Natural England to the south of this point is no longer present as it has been restored to an agricultural field.

- The existing haul road passes through and next to several areas of Lowland Mixed Deciduous Woodland. It is lined in places by Hedgerow Priority habitat, lines of trees and a ditch. Either side are arable fields and large equestrian fields.

- The Site is graded Amber/Green because ecological impacts could be minor and are likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon the River Can and Priority habitats and species. The Site could have moderate impacts upon the nearby Lowland Mixed Deciduous Woodland Priority habitat and associated riparian habitats. This includes impacts to water quantity and quality of the River Can and other watercourses. It also includes the potential to affect protected species associated with the River such as Otters, Water Voles, and bats. The Lowland Mixed Deciduous Woodland Priority habitat and Broadleaved deciduous plantation woodland could be affected through changes to the hydrology; smothering of leaves by dust, disturbance e.g. by noise and lighting. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the River Can and its associated habitats, nearby woodlands, trees, and other boundary habitats. Mitigation may include - but not be limited to - buffers between the Site and the Woodlands and Hedgerows; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses; compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing, haul roads and mineral stockpiles, should be located away from watercourses, woodlands and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

The existing Roxwell Quarry complex is currently being restored. It is anticipated that the introduction of this Site may prevent the final restoration scheme from being implemented.

Candidate site Chalk End – Roxwell (A57) is situated approximately 2.5 km west of the haul road at the closest point. Shellows Cross Farm (A60a) – Chelmsford and Shellows Cross Farm (A60b) – Chelmsford are situated just beyond this, further to the south-west. These sites all fall within the Chelmer Operational Catchment and so cumulative impacts upon water quality are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference A92 - Land at Pattiswick Hall Farm – Small Site

Red/Amber

Key findings of the assessment are as follows:

- Site A92 is within the Site of Special Scientific Interest Impact Risk Zone for Belcher's and Broadfield Woods Site of Special Scientific Interest (SSSI). This is located c.2.5km to the north of the Site and is an ancient woodland.

- The closest Local Wildlife Site (LoWS) is Blackwater Plantation West (reference Bra 158) which is less than 60 metres to the south of the Site, downhill. The ancient woodlands of the Marks Hall estate are just over 2.2km north of the Site and include several ancient woodland Local Wildlife Sites.

- Site A92 comprises arable fields bounded partly by Hedgerows, which are Priority habitat, and a ditch. There are two internal Hedgerows and a separate ditch. The ditches flow south toward the River Blackwater. Internal hedgerows, trees and the watercourse would be removed. A new access onto the A120 would need to cut through the boundary Hedgerow (Priority habitat). Priority species are present on-site.

- There are few scattered trees near the watercourse which would be lost to the development. This includes an Ancient Oak tree, a possible Ancient Oak tree and Notable mature Oak. Ancient trees are classed as irreplaceable habitats. On the northern boundary is a boundary group of mature Oak trees, that collectively form a significant landscape feature.

- The Site is graded Red/Amber because it could have a serious impact upon Priority habitats and species; this includes potential impacts to the River Blackwater and its associated riparian habitats. In addition, the Site could have major impacts upon irreplaceable habitats, i.e. the Ancient tree situated within the Site. There would also be a direct loss of two Hedgerows and dissection through another; loss of a Notable tree and a watercourse. There could be 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 associated its habitats, and to retained habitats; adequate and appropriate buffers between the Quarry and Hedgerows, trees, and watercourses; 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, watercourses, and loss of habitat for Priority farmland species. Losses to irreplaceable habitats (including ancient trees) are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke

compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations.

Results of the technical RAG assessment

- Site A92 is within the Site of Special Scientific Interest Impact Risk Zone for Belcher's and Broadfield Woods Site of Special Scientific Interest (SSSI). This is located c.2.5km to the north of the Site and is an ancient woodland.

- The closest Local Wildlife Site (LoWS) is Blackwater Plantation West (reference Bra 158) which is less than 60 metres to the south of the Site, downhill. The ancient woodlands of the Marks Hall estate are just over 2.2 km north of the Site, including several ancient woodland Local Wildlife Sites; these include Great Monks Wood and Bungate Wood.

- Site A92 is a new site which is gently sloping southwards and comprises arable fields bounded partly by Hedgerows, which are Priority habitat, and a ditch. There are two internal Hedgerows and a separate ditch. The ditches flow south toward the River Blackwater. Internal hedgerows, trees and the watercourse would be removed. The Site will require dewatering. Processing and a new access onto the A120 would be located in the south-east corner of the Site which would need to cut through the boundary Hedgerow (Priority habitat). Skylark and Brown Hare are present which are Priority species. A small part of the Site is within a Great Crested Newt Amber Risk Zone.

- Along the watercourse in the southern portion of the Site is an Ancient Oak tree. It also has two confirmed veteran features and there is the potential for further veteran features to develop as the tree degrades further. Near to this tree is a Notable mature Oak. The tree could have future potential to become a veteran, however in its current state it would not be considered a candidate specimen. There is another mature- possibly Ancient - Oak tree to the north of the watercourse. These trees would need to be removed to accommodate the development. Ancient and veteran trees are classed as irreplaceable habitats. On the northern boundary is a boundary group of mature Oak trees, that collectively form a significant landscape feature.

- The surrounding area is predominantly arable fields bordered by hedgerows with numerous patches of Lowland Mixed Deciduous Woodland Priority habitat. The River Blackwater is to the south and west of the Site and is c.65 m metres at its closest point. Coastal and Floodplain Grazing Marsh Priority habitat and Lowland Mixed Deciduous Woodland Priority habitat are identified by Natural England adjacent to the River and there is also an online and an offline waterbody and also broadleaved deciduous plantation woodland. There are a number of designated sites downriver, which are designated for their riparian/ valley habitats; the closest of which is Blackwater Plantation LoWS (Bra186). The Site is situated immediately north of the A120 which creates a barrier to the movement of wildlife. There are small clusters of buildings and the village of Bradwell is immediately to the south-west, along the A120.

- 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, including Priority habitats. In addition, the Site could have major impacts upon irreplaceable habitats, i.e. the ancient tree situated within the Site. There would also be a direct loss of two Hedgerows and dissection through another; loss of a Notable tree and a watercourse. There could be 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 associated its habitats, and to retained habitats; adequate and appropriate buffers between the Quarry and Hedgerows, trees, and watercourses; and prevention of deterioration of water quality to watercourses. Water run-off from the Site should not be allowed to enter directly into the 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, watercourses, and loss of habitat for Priority farmland species. Losses to irreplaceable habitats (including ancient trees) are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses, and other existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

Site A92 is close to sites A93 (Land at Pattiswick Hall Farm - Full Site) and A89 Covenbrooke Hall Farm. South east of the A120 is the existing Blackwater quarry complex and three additional candidates sites are also proposed here. Site A48 is particularly close to the River Blackwater.

All of the above listed sites are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

Candidate Site Reference A93 - Land at Pattiswick Hall Farm – Full Site

Red/Amber

Key findings of the assessment are as follows:

- Site A93 is within the Site of Special Scientific Interest Impact Risk Zone for Belcher's and Broadfield Woods Site of Special Scientific Interest (SSSI). This is located c.1.6km to the north of the Site and is an ancient woodland.

- The closest Local Wildlife Site (LoWS) is Blackwater Plantation West (reference Bra 158) which is less than 60 metres to the south of the Site, downhill. The ancient woodlands of the Marks Hall estate are just over 800km north of the Site and include several ancient woodland Local Wildlife Sites.

- Site A93 comprises arable fields bounded partly by Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats, and ditches on several boundaries. There are several internal Hedgerows and a separate ditch. The ditches flow south toward the River Blackwater. Internal hedgerows (Priority habitat), mature Oak trees and the watercourse would be removed or need dissecting to accommodate a haul road and access onto the A120.

- There are few scattered trees near the watercourse in the southern portion of the Site which would be lost to the development. This includes an Ancient Oak tree, a possible Ancient Oak tree and Notable mature Oak. Ancient trees are classed as irreplaceable habitats. On the northern boundary of the south part of the Site is a boundary group of mature Oak trees, that collectively form a significant landscape feature. The connecting haul road is shown to cut through this group and would remove a mature Oak tree.

- The Site is graded Red/Amber because it could have a serious impact upon Priority habitats and species; this includes potential impacts to the River Blackwater and its associated riparian habitats. In addition, the Site could have moderate impacts upon irreplaceable habitats, i.e., the Ancient tree situated within the Site. There would also be a direct loss of Hedgerows and dissection through several more; loss of a possible Ancient tree, a Notable tree, mature tree, and a watercourse. There could be 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 associated its habitats, and to retained habitats; adequate and appropriate buffers between the Quarry and Hedgerows, trees, and watercourses; 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, watercourses, and loss of habitat for Priority farmland species. Losses to irreplaceable habitats (including ancient trees) are not permitted within

the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations.

Results of the technical RAG assessment

- Site A93 is within the Site of Special Scientific Interest Impact Risk Zone for Belcher's and Broadfield Woods Site of Special Scientific Interest (SSSI). This is located c.1.6 km to the north of the Site and is an ancient woodland.

- The closest Local Wildlife Site (LoWS) is Blackwater Plantation West (reference Bra 158) which is less than 60 metres to the south of the Site, downhill. The ancient woodlands of the Marks Hall estate are just over 800 metres north-east of the Site, including several ancient woodland Local Wildlife Sites; these include Great Monks Wood and Bungate Wood.

- Site A93 is a new site which is gently sloping southwards and comprises arable fields bounded partly by Lowland Mixed Deciduous Woodland and Hedgerow Priority habitats and ditches on several boundaries. There are several internal Hedgerows and a separate ditch. The ditches flow south toward the River Blackwater. There is a small area of Lowland Mixed Deciduous Woodland Priority habitat within the Site and several patches on or near to the boundaries, including along the western watercourse. Internal hedgerows, trees and the watercourse would be removed and three would require sections being removed to accommodate the haul road connecting the north and south areas. The Site will require dewatering. Processing and a new access onto the A120 would be located in the south-east corner of the Site which would need to cut through the boundary Hedgerow (Priority habitat). Skylark and Brown Hare are present which are Priority species. A small part of the Site is within a Great Crested Newt Amber Risk Zone.

- Along the watercourse in the southern portion of the Site is an Ancient Oak tree. It also has two confirmed veteran features and there is the potential for further veteran features to develop as the tree degrades further. Near to this tree is a Notable mature Oak. The tree could have future potential to become a veteran, however in its current state it would not be considered a candidate specimen. There is another mature- possibly Ancient - Oak tree to the north of the watercourse. These trees would need to be removed to accommodate the development. Ancient and veteran trees are classed as irreplaceable habitats. On the northern boundary of the south part of the Site is a boundary group of mature Oak trees, that collectively form a significant landscape feature. The connecting haul road is shown to cut through this group and would remove a mature English Oak.

- The Site is situated between Stisted and Bradwell villages and Pattiswick hamlet; the surrounding area is predominantly arable fields bordered by hedgerows with numerous patches of Lowland Mixed Deciduous Woodland Priority habitat. It runs roughly parallel with the River Blackwater which is located to the south and west

of the Site and is c.65 m metres at its closest point. Coastal and Floodplain Grazing Marsh Priority habitat and Lowland Mixed Deciduous Woodland Priority habitat are identified by Natural England adjacent to the River and there is also an online and an offline waterbody and broadleaved deciduous plantation woodland. There are a number of designated sites downriver, which are designated for their riparian/ valley habitats; the closest of which is Blackwater Plantation LoWS (Bra186). The Site is situated immediately north of the A120 which creates a barrier to the movement of wildlife. There are small clusters of buildings and Bradwell village is immediately to the south-west, along the A120.

- 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, including Priority habitats. In addition, the Site could have major impacts upon irreplaceable habitats, i.e. the ancient tree situated within the Site. There would also be a direct loss of two Hedgerows and dissection through another; loss of a Notable tree and a watercourse. There could be 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 associated its habitats, and to retained habitats; adequate and appropriate buffers between the Quarry and Hedgerows, trees, and watercourses; and prevention of deterioration of water quality to watercourses. Water run-off from the Site should not be allowed to enter directly into the 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, watercourses, and loss of habitat for Priority farmland species. Losses to irreplaceable habitats (including ancient trees) are not permitted within the Government's Biodiversity Net Gain (BNG) Metric and bespoke assessment and compensation would be required to be agreed with the MPA. Any bespoke compensation would be outside the BNG Metric calculations (The Biodiversity Metric 4.0 User Guide, 2023); bespoke compensation would be required, which could not count towards any Biodiversity Net Gain calculations.

- General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the hedgerows, woodlands, watercourses, and other existing habitats, and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A93 is close to sites A92 (Land at Pattiswick Hall Farm - Small Site) and A89 Covenbrooke Hall Farm. South east of the A120 is the existing Blackwater Quarry complex and three additional candidate sites are also proposed here. Site A48 is particularly close to the River Blackwater.

All of the above listed sites are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Also, by ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

Candidate Site Reference A94 – Land at Highfields Farm

Amber

Key findings of the assessment are as follows:

- Site A94 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Tiptree Heath SSSI (c.2.7km to the southeast). It is considered that the likelihood of impacting Tiptree Heath SSSI is likely to be low, using professional opinion.

- Kelvedon Hall Wood Local Wildlife Site (LoWS) is 240m to the southwest and is Ancient Woodland. Brockwell Meadows LoWS is c.365m to the north/ north-west adjacent to the River Blackwater. Part of Brockwell Meadows is also designated as Local Nature Reserve (LNR). An additional 5 LoWS are within 1km of the Site. Two of these – i.e. Inworth Wood (Co6) and Perry's Wood (Co5)- are also both ancient woodland and are located 430m and 460m from the Site, respectively.

- The Site comprises a number of arable fields; bounded by Hedgerows and lines of mature trees which are Priority habitat and a number of other ditches. A Hedgerow (Priority habitat)/ line of mature trees and associated watercourse runs across the centre of the western area, the water heading towards the River Blackwater. There is a Hedgerow (Priority habitat)/ line of mature trees and associated ditch (dry at the time of survey) crossing through the eastern part of the Site. These would potentially require removal to accommodate the development. Additional sections of Hedgerow Priority habitat may require removal to accommodate visibility splays and access routes. The River Blackwater is c.260 metres from the Site at its closest point; there is hydrological connectivity to the River via the watercourses.

- There is a veteran Ash tree on the southern boundary of the Site, in the western part. Veteran trees are irreplaceable habitat.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. the veteran tree and ancient woodlands. The Site could have a major impact upon the natural environment including loss of, and indirect impacts to Hedgerow Priority habitat, mature trees, watercourses. This includes impacts to water quantity and quality of the watercourse which could, in turn, affect the River Blackwater and associated habitat, some of which is designated as LoWS and LNR.

- Any application would require demonstration that the operations would not affect the hydrology of the veteran tree, nearby ancient woodlands, hedgerows, mature tree lines, ditches and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats, particularly the veteran trees, and prevention of deterioration of water quality to the watercourses. Water run-off from the Site should not be allowed to enter directly into watercourses. Compensatory habitat

for the loss of Hedgerows (Priority habitat)/ lines of mature trees and ditches, and Priority farmland species may be required.

Results of the technical RAG assessment

- Site A94 is within the Site of Special Scientific Interest (SSSI) minerals Impact Risk Zone for Tiptree Heath SSSI (c.2.7km to the southeast). The intervening landscape is arable fields and patches of Lowland Mixed Deciduous Woodland Priority habitats and a patch of ancient woodland. So it is considered that the likelihood of impacting Tiptree Heath SSSI is likely to be low, using professional opinion.

- Kelvedon Hall Wood (Ma52) Local Wildlife Site (LoWS) is 240m to the southwest and is Ancient Woodland. Brockwell Meadows (Bra229) LoWS is c.365m to the north/ north-west. Part of Brockwell Meadows is also designated as Local Nature Reserve (LNR). The area designated as both LNR and LoWS comprises former floodplain meadows, while outside the LNR, the LoWS includes plantation and marsh which borders the River Blackwater, providing an extensive band of habitat. An additional 5 LoWS are within 1km of the Site. Two of these – i.e. Inworth Wood (Co6) and Perry's Wood (Co5)- are also both ancient woodland and are located 430m and 460m from the Site, respectively.

- This proposed new Site consists of two areas between Kelvedon and Inworth, connected by an internal access road and may include conveyors and a culvert. There are a number of arable fields that would be affected. Most of the boundaries contain Hedgerows which are Priority habitat and lines of mature trees. There are a number of other ditches, most of which were dry at the time of survey. A Hedgerow/ line of mature trees (Priority habitat) and associated watercourse runs roughly south-north across the centre of the western area, the water heading towards the River Blackwater. There is a Hedgerow (Priority habitat) / line of mature trees and associated ditch (dry at the time of survey) crossing through the eastern part of the Site. These would all potentially require removal to accommodate the development. Highfields Lane would need to be crossed, potentially requiring the removal of Hedgerow Priority habitat to provide the visibility splay. The access route would require cutting through Hedgerow Priority habitat. There is a pond on western boundary. Part of the western section is within a Great Crested Newt Amber Risk Zone. Restoration materials would include imported inert waste and possibly non-hazardous landfill.

- There is a veteran Ash tree on the southern boundary of the Site, in the western part. Veteran trees are irreplaceable habitat.

- The Site is situated within a predominantly arable area. It is near to the A12 which creates a significant barrier to the movement of species. The River Blackwater is on the far side of the A12 and the Site is c.260 metres from it at its closest point. There is hydrological connectivity to the River via the watercourses. A relatively large solar farm is situated to the southeast of the eastern area. There are several areas of Lowland Mixed Deciduous Woodland Priority habitat within 1km of the Site.

- The Site is graded Amber because ecological impacts could be moderate and are likely to require medium levels of mitigation to make the Site acceptable. The Site could have moderate impacts upon irreplaceable habitats, i.e. the veteran tree and ancient woodlands. The Site could have a major impact upon the natural environment including loss of, and indirect impacts to Hedgerow Priority habitat, mature trees, watercourses. This includes impacts to water quantity and quality of the watercourse which could, in turn, affect the River Blackwater and associated habitat, some of which is designated as LoWS and LNR. In addition, disturbance, and loss of habitat for Priority farmland species, e.g. Skylarks, and smothering of leaves by dust and disturbance e.g. by noise and lighting.

- Any application would require demonstration that the operations would not affect the hydrology of the veteran tree, nearby ancient woodlands, hedgerows, mature tree lines, ditches and other boundary and nearby habitats. Mitigation may include - but not be limited to - an adequate and appropriate buffer between the Site and these habitats, particularly the veteran trees, and prevention of deterioration of water quality to the watercourses. Water run-off from the Site should not be allowed to enter directly into watercourses. Compensatory habitat for the loss of Hedgerows (Priority habitat) / lines of mature trees and ditches, and Priority farmland species may be required.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as processing areas, haul roads and mineral stockpiles, should be located away from the veteran tree, Hedgerows, watercourses, and the other existing habitats and should be regularly dampened to minimise dust emissions.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Bradwell and Colemans Quarries and a number of proposed candidate sites are located along the valley of the River Blackwater between Stisted and Witham. All of these are in the same Blackwater (Combined Essex) Water Body, in the Blackwater Catchment Area. Therefore, cumulative impacts upon water quantity and quality to the River Blackwater are possible.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12, which would affect land near to A94. This does not yet have consent. The Site would create an additional barrier for the movement of wildlife to the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.

Candidate Site Reference A95 – Land at Bellhouse Farm South

Red/Amber

Key findings of the assessment are as follows:

- The Site is located adjacent to the Roman River, an ancient woodland, and would require the loss of two mature oak trees located in the centre of the Site.

- Although the Site is not within the Site of Special Scientific Interest Minerals Impact Risk Zone it would be upstream of several SSSIs, a Special Protection Area (SPA) and a Special Area of Conservation. It is situated approximately 4.5 km northwest of Abberton Reservoir SPA.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and a serious impact upon the Gol Grove and Hanging Wood Local Wildlife Site (Co58), the Roman River and associated habitats, Priority habitats and species and would require the loss of two mature oak trees.

- Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River, veteran trees and other boundary habitats and it is likely that mitigation would require a substantial buffer from the ancient woodland and Roman River. Quarrying or excavation within 16 metres of any main river must meet Environmental Agency requirements.

Results of the technical RAG assessment

- A Preliminary Ecological Appraisal, and Biodiversity Net Gain calculations and report have been submitted for this Site.

- The Site is not within a minerals Site of Special Scientific Interest Impact Risk Zone. The Site is 4.5km northwest of Abberton Reservoir Special Protection Area, Ramsar site and Site of Special Scientific Interest (SSSI). In addition, the adjacent Roman River is a tributary of the River Colne, which contains the Colne Estuary SSSI, Special Protection Area and Ramsar site and Essex Estuaries Special Area of Conservation. The Site is also upstream of the Roman River SSSI and Upper Colne Marshes SSSI. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extend up the Roman River and is c.12km at its closest point. Although these are some distance from the Site, the River creates a potential pollution pathway between A95 and these statutory sites, with respect to water quality and water quantity.

- The closest Local Wildlife Site is Gol Grove and Hanging Wood Local Wildlife Site (Co58) which is immediately south-east of the Site. The LoWS comprises the ancient woods of Gol Grove and Hanging Wood- which are connected to each other by mature but recent oak wood- and an area of tall swamp and tall willow scrub woodland. The ancient woodlands are irreplaceable habitat.

- The Site itself comprises a sloping arable field mostly bounded by hedgerows with mature trees in places, and the Roman River – which is classed as Main River by the Environment Agency- runs along the lower, southern boundary which has a line of trees and scrub running along most of its northern edge. There are two mature oak trees in the centre of the field which would require removal. The boundaries mainly comprise hedgerows containing predominantly native species and are therefore Priority habitats. There are several significant boundary Oak trees near the southern end of the western boundary.

- This would be an extension to the extant Bellhouse Quarry and landfill which is located to the east of the Site and is separated from the Site by a relatively recent but maturing hedgerow and the corner of Hanging Wood, a pond, tall swamp, and tall willow scrub woodland. Beyond Bellhouse is the large Colchester Quarry site and to the northeast of Bellhouse Quarry and landfill is urban edge of Colchester. In other directions, the area is rural and includes the riparian habitats of the Roman River Valley, agricultural floodplain grassland, small areas of Lowland Mixed Deciduous Woodland Priority habitat, mature hedgerows, and trees, which are part of a wider network of habitat connectivity. There are nine Local Wildlife Site (LoWS) within one kilometre of the Site. There are small to large predominantly arable fields, and small villages. The Site is within the Amber Great Crested Newt Risk Zone.

- The Site is graded Red-Amber because it could have major impacts upon the adjacent ancient woodland, which is irreplaceable habitat, and a serious impact upon the LoWS, the Roman River and Priority habitats and species and would involve the loss of two mature oak trees. Impacts may include changes to the hydrology of the ancient woodland, smothering of leaves by dust, disturbance e.g. by noise and lighting; impacts to water quality of the River and disturbance to protected and Priority species using the River corridor e.g. otters and bats. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks. Any application would require demonstration that the operations would not affect the hydrology of the adjacent ancient woodland, the Roman River, veteran trees and other boundary habitats and it is likely that mitigation would require a substantial buffer from the ancient woodland and Roman River. Quarrying or excavation within 16 metres of this Main River must meet Environmental Agency requirements. Other mitigation measures may be required, such as watering to suppress dust and wildlife sensitive lighting.

- The Proforma proposes that processing and distribution would be via Bellhouse Quarry and landfill and would use a field conveyor. Access to the Site for machinery and the conveyor would either require removal of part of the Hedgerow – and therefore direct loss of Priority Hedgerow habitats. This Hedgerow was planted as part of the Bellhouse Quarry permission, and it is now tall and substantial. If the access is located near to the ancient woodland and pond - where the hedgerow is thinner- it could create additional dust and disturbance in this location. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from the woodland and the other existing habitats, and should be regularly dampened to minimise dust emissions. Water run-off from the Site should not be allowed to enter directly into the Roman River.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Local Wildlife Site is Gol Grove and Hanging Wood Local Wildlife Site (Co58) is immediately south-east of the Site. There is already a quarry to the north of the ancient woodland which is currently being landfilled and to the east of this is the large Colchester Quarry which is currently being worked and most of it has not been restored. Candidate Site A61 Heckfordbridge is also situated close to the Roman River, on the opposite side, c.600 metres downstream.

The Site may result in cumulative impacts as there would be a greater potential to alter the water table in the long-term on ground water dependent habitats. The Site could result in additional impacts to the hedgerow that is situated between the extant and proposed Site. The Site could create additional loss of, and disturbance to, farmland habitats.

There are many potential cumulative impacts to the Roman River and associated habitats and species, e.g. water quality and quantity, changes to floodplain habitats, and the movement of mobile protected and Priority species such as Otters and bats.

Advance habitat creation, working the candidate sites in sequence and restoring them quickly, may help to alleviate this by ensuring that the minimum possible area is affected anyone time. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Any potential for in combination effects particularly to Abberton Reservoir SPA and Ramsar site; Colne Estuary SPA and Ramsar site and Essex Estuaries SAC, will need to be considered through a plan level Habitats Regulations Assessment.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

The A12 is c.1.7km northwest of the Site; this section is currently being upgraded. The Roman River passes through this section before reaching Site A95. Cumulative impacts to the Water Catchment of the Roman River Water Body, are possible should these works still be continuing at the same time as A95 being worked, mainly by potentially impacting water quality.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12 south of Marks Tey; this does not yet have consent. There is no hydrological connectivity between the Site and the Development Consent Order boundary of this project.

Candidate Site Reference A96 – Rayne Quarry – Southern Extension

Red/Amber

Key findings of the assessment are as follows:

- This Site is a relatively narrow area of land between the A120, B1256 and B1417. These roads- and in particular the A120- create a barrier to the movement of wildlife. The River Ter (a Main River) cuts through the middle of the Site. The northern part of the Site comprises arable land bounded by strips of woodland plantation between the northern boundary and the road. The southern part comprises low-lying land along the River Ter valley and includes Lowland Mixed Deciduous Woodland, watercourses, lines of trees, plantation woodland and floodplain grassland with young scattered trees. It appears from the submitted Proforma and plans that all internal habitats would be removed, including an estimated 490 metre stretch of the River Ter and its associated habitats.

- The Site is graded Red- Amber because ecological impacts are likely to be major and likely to require high levels of mitigation to make the Site acceptable. The Site could have a serious impact upon the natural environment including the River Ter and Priority habitats and species. It would involve the direct loss of an extensive area of habitat along the wildlife corridor. It would result in dissecting habitat in an area where the movement of species is already hindered by several roads, particularly the A120. There is potential for it to seriously adversely affect a number of protected and Priority species utilising the river corridor such as Water Vole, Otters and bats.

- Any application would require demonstration that the operations would not affect the hydrology of the River Ter and its associated habitats, trees, and other boundary habitats in the long term. Off-site compensatory habitat in a suitable location would need to be provided for the significant loss of river and associated habitats, the other habitats and for farmland Priority species.

Results of the technical RAG assessment

- Flitch Way Country Park Local Wildlife Site (Bra33 /Ufd 196) is 218m to the south of the Site on the other side of the A120. This is a disused railway line which has developed into a valuable wildlife site and east-west corridor. Blackbush Wood (Bra27) is c.712 to the north. A Special Roadside Verge Dunmow Road (SV-BTE14) is less than 1km to the east.

- This Site would be an extension to Rayne Quarry; preparations for this relatively new quarry to the north of the B1256 have started. The Site is a relatively narrow triangular area of land between the A120, B1256 and B1417. These roads- and in particular the A120- create a barrier to the movement of wildlife. The River Ter (a Main River) cuts through the middle of the Site, entering it beneath the B1417 and leaving it under the A120 and these access points are important for the movement of wildlife in an area which is heavily restricted by the roads. The northern part of the Site comprises arable land bounded by strips of woodland plantation between the northern boundary and the road. The southern part

comprises low-lying land along the River Ter valley and includes Lowland Mixed Deciduous Woodland, watercourses, lines of trees, plantation woodland and floodplain grassland with young scattered trees. There is a mature Oak tree located southwest of the Site on the boundary which has two confirmed veteran features and therefore would not be considered a veteran or candidate specimen. It appears from the submitted Proforma and plans that all internal habitats would be removed, including an estimated 490 metre stretch of the River Ter and associated habitats. The Site is mostly within a Great Crested Newt Amber Risk Zone. Dewatering will be required. A conveyor through a culvert would connect A96 to the extant Rayne Quarry's processing infrastructure. Low-level restoration is proposed, utilising indigenous soil resources only.

- Site A96 is situated between Blake End and Rayne in a predominantly arable area. There is a waterbody between the Site and the A120, which may be a borrow pit from construction of the A120. There is a patch of Lowland Mixed Deciduous Woodland to the west. The River Ter and associated habitats passes through the area from the west and starts to meander southwards from A96. The River Ter Site of Special Scientific Interest (SSSI) is located over 7km downstream of the Site and A96 is not within the SSSI Impact Risk Zone. There is still a potential pollution pathway created by the River, but this SSSI is designated for its fluvio-geological interest, rather than its ecological importance, and therefore potential ecological impacts are not considered further.

- The Site is graded Red- Amber because ecological impacts are likely to be major and likely to require high levels of mitigation to make the Site acceptable. The Site could have a serious impact upon the natural environment including the River Ter and Priority habitats and species. It would involve the direct loss of an extensive area of habitat along the wildlife corridor created by the river. It would result in dissecting habitat in an area where the movement of wildlife is already hindered by several roads, particularly the A120. There is potential for the development to seriously adversely affect protected and Priority species utilising the river corridor, such as Water Vole, Otters, and bats. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the hydrology of the River Ter and its associated habitats, trees, and other boundary habitats in the long term. Off-site compensatory habitat in a suitable location would need to be provided for the significant loss of river and associated habitats, the other habitats and for farmland Priority species. Mitigation may include – but not be limited to – substantial buffers between the extraction and any retained vegetation; prevention of deterioration of water quality to the River and its tributary watercourses, and ecological improvements to the watercourses. Water run-off from the Site should not be allowed to enter directly into watercourses.

- Other mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting. General best practice pollution prevention would be likely. Activities which have the highest potential to generate dust, such as haul roads and mineral stockpiles, should be located away from watercourses and any retained habitats.

Cumulative impacts

Cumulative impact with other existing and/or candidate mineral sites.

Site A47 would be an extension to the existing Bradwell Quarry to the north. Candidate Site A90 (Rayne Quarry - Northeast Extension) would extend Rayne Quarry further northwards.

The loss of all internal habitats and watercourses would create additional impacts including loss of habitat connectivity with the surrounding area and additional cumulative hydrological changes to habitats. the River Ter also passes near Site A59 near Great Leighs c.7km downstream; cumulative impacts to water quantity and quality of the River Ter with Rayne Quarry and/or Site A59 are therefore possible.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Advanced habitat creation, working the nearby sites in sequence and restoring them quickly, may help to alleviate this by ensuring the minimum possible area is affected anyone time. Also, ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Other potential cumulative impacts may occur such as through dust, noise and lighting and mitigation measures should be used, such as watering to suppress dust and wildlife sensitive lighting.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

None known.

Candidate Site Reference D7 – Land at Pond Farm

Green

Key findings of the assessment are as follows:

- There are potential pollution pathways between the proposed transhipment Site and international wildlife sites that would need to be considered further -e.g. for water quality- through the plan-level Habitats Regulations Assessment and any subsequent planning application.

- The Site is currently an arable field situated between urban areas, the A12, a railway line, a golf course and Colemans Quarry. Perimeter habitats include watercourses, Hedgerow Priority habitat, rough grassland, scrub, and lines of trees.

- The Site is graded Amber/Green because it could have a minor impact upon international or national designations and is likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon the water quality of the River Blackwater, other watercourses and to Priority habitats and species including Priority farmland species. Buffers are likely to be required between the Site and the perimeter habitats, and water quality must not be affected by the proposals.

Results of the technical RAG assessment

- The Site is not within a minerals Site of Special Scientific Interest (SSSI) Impact Risk Zone. The River Blackwater is 1.1km east of the Site. A watercourse leads from the southern boundary of the Site into the River Blackwater which, in turn, feeds into the Blackwater Estuary SSSI, Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation approximately 12km downstream. The Blackwater, Crouch, Roach, and Colne Estuaries Marine Conservation Zone extends up the River Blackwater and is c. 9km at its closest point. The Site is also upstream of the Whet Mead Local Nature Reserve and Local Wildlife Site. Although these are some distance from the Site, the watercourse and River Blackwater create a potential pollution pathway between D7 and these statutory and non- statutory sites, with respect to water quality and water quantity. Any potential for Likely Significant Effects, for example to water quality of the Blackwater Estuary and Ramsar site and the Essex Estuaries Special Area of Conservation (SAC), will need to be considered through a plan level Habitats Regulations Assessment.

- The proposed transhipment Site is currently an arable field situated between Witham and Rivenhall End. It is adjacent to the A12 on the south-eastern boundary and Colemans Farm Quarry is located beyond this. The A12 creates a significant barrier to species movement in this direction. A railway line runs along its north-western boundary and a golf course is beyond that. The railway line provides a barrier to species movement in this direction, although this is not likely to be as substantial as that caused by the A12. A residential property protrudes into the middle of the field.

- There is a wet ditch (referred to above) with trees and scrub on the southwestern boundary and two sections of Priority Hedgerow habitat on the north-eastern boundary between the Site and the residential area of Rivenhall End. The boundary adjacent to the railway line comprises trees and scrub, a rough grassland buffer strip approximately 12m wide and a line of scrub beneath the pylons separates the field margin from the rest of the arable field. There is a dry ditch on part of the south-eastern boundary.

- Hoo Hall Meadow (Bra188) Local Wildlife Site is 600m to the north of the Site. There is habitat connectivity between this and the Site, albeit somewhat hindered by the railway line. There are several areas of Lowland Mixed Deciduous Woodland Priority habitat within 1km and a small patch of Traditional Orchard Priority habitat 170m from the Site, on the other side of the A12. The Site is partly within an Amber Great Crested Newt Risk Zone.

- The Site is graded Amber/Green because it could have a minor impact upon international or national designations and is likely to require low levels of mitigation to make the Site acceptable. The Site could without mitigation have a moderate impact upon the water quality of the River Blackwater, other watercourses and thereby to Priority habitats and species. It could result in disturbance and loss of habitat for Priority farmland species, e.g. Skylarks.

- Any application would require demonstration that the operations would not affect the nearby watercourses and River Blackwater, the trees, and Hedgerow Priority habitat. Mitigation may include - but not be limited to - buffers between the Site and the perimeter habitats; prevention of deterioration of water quality to watercourses; ecological improvements to the watercourses; and compensatory habitat for farmland birds. Water run-off from the Site should not be allowed to enter directly into the watercourses. Other mitigation measures may include wildlife sensitive lighting and general best practice pollution prevention would be likely.

Cumulative impacts

<u>Cumulative impact with other existing and/or candidate mineral sites.</u>

A number of other Candidate mineral sites are proposed along the river corridor on the other side of the A12, on both sides of the River Blackwater. The most likely potential cumulative impacts with these sites would be to the water quality of the River Blackwater.

Any potential for in combination effects, particularly to the Blackwater Estuary Special Protection Area and Ramsar site and the Essex Estuaries Special Area of Conservation, will need to be considered through a plan level Habitats Regulations Assessment.

The Site could create additional loss of, and disturbance to, farmland habitats and associated protected and Priority species in the area.

Other Cumulative impacts i.e., those outside MPA ability to control e.g., planning permission for nearby residential development, potential existing local plan allocation etc if known.

There is currently a live Nationally Significant Infrastructure Project proposal to widen the A12; this does not yet have consent. This would directly affect some of the land at the existing Colemans Farm Quarry. Part of D7 is within the A12 widening Development Consent Order boundary as a potential compound area to support the road construction project and could be available after the construction of this project is completed. The Site would create an additional permanent barrier for the movement of wildlife in the area and could contribute to the additional loss of, and disturbance to, farmland habitats and associated Priority habitats and species in the area.