Connah's Quay Low Carbon Power

Overarching Written Scheme of Investigation for Terrestrial and Marine Heritage Mitigation

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Table of Contents

Figures

1. Introduction

1.1.1 AECOM (the Consultant) has been commissioned by Uniper UK Limited (the Applicant) to prepare an Overarching Written Scheme of Investigation (WSI) for archaeological mitigation works, to support a Development Consent Order (DCO) application for the construction, operation (including maintenance) and decommissioning of a new Combined Cycle Gas Turbine (CCGT) Generating Plant fitted with Carbon Capture Plant (CCP) (the Proposed Development) on land at, and in the vicinity of, the existing Connah's Quay Power Station (Kelsterton Road, Connah's Quay, Flintshire, CH6 5SJ) (the Proposed Development Site (hereafter referred to as the Order limits) as shown in **Figure 1**.

1.1.2 This document comprises an Overarching WSI, the purpose of which is to set out the scope and methodology for the archaeological fieldwork to be undertaken by the undertaker[1] and its appointed archaeological contractor (the Archaeological Contractor). In addition, the requirements and responsibilities of the Archaeological Contractor, the undertaker and the Consultant have been set out to assist the Archaeological Contractor in the completion of the fieldwork.

1.1.3 The assessments undertaken in **Chapter 17 Terrestrial Heritage** (**EN010166/APP/6.2.17**) and **Chapter 18 Marine Heritage** (**EN010166/APP/6.2.18**) of the **Environmental Statement** (**ES**) have identified those areas within the Site where likely significant impacts have been identified as a result of the Proposed Development and therefore where archaeological mitigation would be required.

1.1.4 The archaeological works comprise archaeological monitoring and recording of intrusive groundworks within the Proposed Carbon Dioxide (CO_2) Connection Corridor and the Surface Water Outfall Area components of the Proposed Development (refer to **Figure 2**).

1.1.5 The works specified in this document will be undertaken on behalf of the undertaker by a competent and suitably qualified Archaeological Contractor who is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), or with equivalent demonstrable experience.

1.1.6 All archaeological works will be carried out in accordance with this Overarching WSI and the Site-Specific WSIs (refer to Section 4) as approved by the relevant local planning authority (LPA), following consultation with the Archaeological Advisor to the LPA and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW). The works will be undertaken in accordance with the guidance provided by CIfA, including the Code of Conduct (Ref 1) and the Standard and Universal Guidance for Archaeological Monitoring and Recording (Ref 2; Ref 3), and other current and relevant good practice and standards and guidance applicable at the time of the works being undertaken.

[1] "undertaker" is defined in Article 2(1) of the **Draft DCO** (**EN010166/APP/3.1**).

2. Background Information

2.1 The Site Location and Proposed Development

2.1.1 The Order limits encompasses a total area of approximately 104.90 hectares (ha).

2.1.2 The Proposed Development Site is located approximately 0.6 kilometres (km) north-west of Connah's Quay in Flintshire, north-east Wales and is located entirely within the administrative boundary of Flintshire County Council (FCC).

2.1.3 The full extent of the Order limits are shown on **Figure 1** and the components of the Proposed Development relevant to this WSI (refer to **Figure 2**) are:

- the Proposed CO_2 Connection Corridor; and
- the Surface Water Outfall Area.

2.1.4 The Proposed CO_2 Connection Corridor is located on agricultural land at the south-western most extent of the Site, approximately 2 km south-east of Flint, and 1 km north-east of Flint Mountain, Flintshire. The Proposed CO_2 Connection Corridor comprises a new proposed pipeline that measures approximately 422 metres (m) in length from an existing pipeline, and a connection to an Above Ground Installation (AGI) which is being constructed as part of a different consented DCO (the Hynet CO_2 Pipeline Order 2024).

2.1.5 The Surface Water Outfall Area is located on the foreshore of the River Dee, immediately bounding the northern extent of the Site and the existing Connah's Quay Power Station site. The Surface Water Outfall Area comprises the construction of a new outfall structure adjacent to the existing outfall (the Proposed Surface Water Outfall).

2.2 Geology and Topography

2.2.1 The geological bedrock of the Site is characterised by five geological bedrock formations. The Site is predominantly underlain by Pennine Lower Coal Measures Formation, a bedrock comprised of mudstone, siltstone and sandstone. This sedimentary bedrock formed between 319 and 318 million years ago during the Carboniferous period.

2.2.2 Pennine Lower Coal Measures Formation, which is comprised of sedimentary sandstone, is located across the eastern half of the Site, with a band of Etruria Formation, a sedimentary mudstone, sandstone and conglomerate, located in the centre of the Site.

2.2.3 Thin bands of Gwespyr Sandstone, comprised of sedimentary sandstone and argillaceous rocks, are located within the eastern area of the Site and within the Proposed CO_2 Connection Corridor.

2.2.4 Superficial deposits recorded within the Site and the Water Connection Corridor consist of Tidal Flat deposits comprised of clays, silts and sands (alluvium).

2.2.5 Superficial deposits of Till, Devensian – Diamicton are located within the eastern area of the Site and within the Proposed CO_2 Connection Corridor.

2.2.6 In addition, historic boreholes have identified the presence of peat across the Site at varying depths and thicknesses.

2.2.7 The Proposed CO_2 Connection Corridor comprises two agricultural fields separated by a hedgerow and lies on an average elevation of approximately 50 m Above Ordnance Datum (AOD).

2.2.8 The Surface Water Outfall Area comprises a section of the River Dee that flows through a large estuary into the Irish Sea which consists of coastal marshlands and sand, and an area of land reclaimed between 1749 and 1916 where it connects into the northern boundary of the Site.

2.3 Archaeological and Historical Background

2.3.1 The archaeological and historical background of the Site, including a 1 km study area, has been set out in detail in **Appendix 17-A: Terrestrial Heritage Desk-based Assessment** (**EN010166/APP/6.4**) and **Appendix 18-A: Marine Heritage Desk-based Assessment** (**EN010166/APP/6.4**) of the Environmental Statement, both of which are summarised here.

Palaeolithic and Mesolithic (1,000,000 BC to 4,000 BC)

2.3.2 The Palaeolithic period in Britain saw several changes in the environment, comprising glacial (cold) and interglacial (warmer) periods; there were at least three glacial episodes in the region during the Pleistocene period. Recent evidence suggests that early humans were occupying parts of the British Isles as early as 700,000 years ago, the archaeological evidence for which largely takes the form of stone tools, human bone and worked or butchered animal bone. North Wales contains some of the most nationally significant sites for the study of the British Palaeolithic, in the form of cave sites in the Clwydian Range at Bontnewydd Cave, Cae Gronw Cave, Cae-Gwyn Cave, Ffynnon Beuno Cave and Lynx Cave in Denbighshire and Gop Cave and Gwaenysgor Cave. These have produced important lithic, faunal and human bone evidence, including, at Bontnewydd Cave, the first evidence from Wales of Lower Palaeolithic early Neanderthals dating from c. 225,000 years ago. There is no substantial evidence of Palaeolithic activity outside of these caves known from Wales.

2.3.3 The warming of the climate that heralded the end of the last Ice Age, approximately 12,000 years ago, caused the steady melting of the ice sheets, the raising of sea levels and the isolation of Britain from the rest of Europe. The warmer climate and ensuing changes in vegetation during this period allowed the Mesolithic hunter-gatherers to exploit both land and marine resources, with settlement perhaps focused in coastal areas and river valleys. Nevertheless, there is some evidence of the use of the uplands in the early Mesolithic such as at Waun Fignen Felin in the Brecon Beacons. With that said, the distribution of known Mesolithic sites in Wales shows a definite concentration of sites in coastal locations, particularly along the north and south coasts, indicating that the Welsh shoreline offered an abundant source of food and other resources. Shell middens or mounds, many including human remains, recorded along the Severn Estuary and at sites

such as Prestatyn, suggest a long-term, often seasonal, exploitation of local resources.

2.3.4 In the later Mesolithic there is evidence of the increasing exploitation of upland areas, as seen at the presumed seasonal hunting sites around Llyn Brenig, Denbighshire. Excavations have also identified 'task sites' such as those for the processing of food or for making tools, like The Nab Head at St Brides Bay in Pembrokeshire. Alongside middens, spreads of stone tools, and waste from their manufacture, form the principal evidence for Mesolithic activity in Wales. In the area surrounding the Site, particular concentrations of such material have been recovered from Prestatyn, Rhuddlan and Rhyl.

2.3.5 Although no Palaeolithic or Mesolithic findspots, archaeological remains or sites are known within the Site, the Palaeogeographic study undertaken by Wessex Archaeology (**Appendix 18-A: Marine Heritage Desk-based Assessment** (**EN010166/APP/6.4**)) provided a study of recent Ground Investigation (GI) logs within the Site located on the reclaimed foreshore of the River Dee Estuary, which identified peat and organic rich alluvial deposits at a depth of between 2 m below ground level (bgl) and 18 m bgl, which was found to be partially surviving beneath the made ground deposits associated with the construction of the former and current power station site. These alluvial deposits have a high potential to contain palaeoenvironmental and faunal remains within them.

Neolithic to Bronze Age (4,000 BC to 700 BC)

2.3.6 Neolithic and early Bronze Age activity is mostly represented in the archaeological record by flint tools and funerary monuments. The presence of round barrows at Moel y Gaer and Pen y Parc illustrate the importance of the higher ground of the Clwydian Range as a focus for Bronze Age settlement and monument building. Neolithic stone tools and archaeological deposits identified during archaeological investigations at Moel y Gaer illustrate it was an important focus of activity even before the Bronze Age.

2.3.7 More widely, North Wales contains numerous Neolithic funerary monuments, and has also recently yielded evidence, from Llanfaethlu on Anglesey, of an early Neolithic village – the first to be discovered in North Wales – which reveals a cluster of four houses.

2.3.8 An assemblage of over 70 artefacts mostly of Neolithic and Bronze Age date were recovered from the peat shelf at Rhyl and include polished stone axes. Finds from peat deposits, such as the two bronze axes and a bronze dagger from the peat shelf off Llandudno, Conwy, and a bronze spearhead and a bronze axe found on the peat shelf at Rhyl, Denbighshire, are more likely to be an indication of Bronze Age exploitation of coastal environments which were later inundated. The mines within the Great Orme in Llandudno are thought to be the earliest metal workings in the UK and are nationally important Bronze Age copper workings.

2.3.9 Whilst there has been identified prehistoric activity within the wider landscape, only isolated small finds have been recorded within 1 km of the Site comprising a tanged flint arrowhead and a bronze celt.

2.3.10 Several other flints of broad prehistoric date have been recorded across the 1 km study area including a flint scraper and core and a hammerstone.

Iron Age (700 BC to AD 43)

2.3.11 The Iron Age is distinguished by the impressive numbers of surviving hillforts and settlements present in the archaeological record. However, archaeological excavations have been few and far between and the material culture for the Iron Age in Wales is correspondingly sparse. What there is, largely recovered from deliberately deposited hoards, is exotic and unusual rather than domestic and every day. Swords, spearheads and fine metalwork created in geographically widespread typological and artistic styles testify to broad cultural contacts and the presence of a warrior elite. However, the pottery or tools that could describe local society and the organisation of domestic life are usually lacking.

2.3.12 The area of the Site lies within the territory associated with the British tribe named by the Romans as the 'Deceangli'. Narratives of these people created by archaeologists have generally assumed a hierarchical society, due to the presence of 'high-status' hillforts in the Clwydian Range, such as Moel y Gaer, sitting in contrast to 'lower-status' enclosed farmstead sites, although this relies on modern interpretations of how these people may have understood the use and importance of these places. Excavation at Moel y Gaer has suggested use throughout the Iron Age, and the replacement of roundhouses with rectangular structures suggests a probable continuation of use into the Roman period, unlike many other similar sites across Britain.

2.3.13 The later development of a Roman silver and lead industry almost certainly focused around Halkyn Mountain and Pentre Bridge Roman Site has led to an assertion of the possible existence of a pre-Roman industry carried on by the Deceangli, although no evidence has yet been found to support this. There is a complete lack of any clear evidence from the area of Flintshire for Iron Age coastal activity, although it is clear that goods found within the area have been imported.

Roman (AD 43 to AD 410)

2.3.14 Evidence for Roman military activity along Deeside is limited, although the area would have fallen under the influence of the substantial military garrison at Chester from the Flavian period onwards. There are no confirmed military works associated with the early campaigns against the Deceangli, although Ostorius Scapula launched a campaign against them, possibly as early as AD 48. Suetonius Paulinus mounted three campaigns in Wales in AD 58-60, perhaps utilising the Dee Estuary; the last of these reached Anglesey, although the campaign was halted by the Boudican revolt. During the Roman occupation of Wales and England arterial roads were built to allow the quick and decisive movement of the Roman legions to subdue any rebellions quickly. Flintshire has several of these important roads crossing through it.

2.3.15 The only Roman road known within the study area is that linking Deva (Chester) with the unlocated fort at Varis. The route, as generally perceived, leaves Chester and then swings north-westwards along the edge of the Dee Estuary. Much of the course of this road is speculative, however, with the straight post-medieval coastal road (now the A548) assumed to be on the course of a predecessor. Aerial photographic analysis has identified the Varae to Deva Roman Road just to the south of the Site, following the modern route of the A548. A small section of cambered road surface was

identified approximately 300 m west of the Site, just north of the A548 road; it appears to potentially be a small road that connected to the St Asaph Roman road and lead to the river. Several archaeological investigations have identified sections of Roman road surface underneath the existing A548/Chester Road.

2.3.16 There is now a growing body of evidence for a Roman roadside settlement set out along the coastal road between the legionary fortresses at Chester and Caernarfon (Segontium). This settlement spans the later 1st to early 4th centuries and extends for at least 800 m between Pentre Farm and Leadbrook Drive. Chance finds and antiquarian reports also suggest the possibility of Roman settlement at both Flint and Greenfield, although the main focus appears to have been at Pentre Ffwrndan. There is certainly an inseparable link along Deeside between settlement and industry, with the evidence suggesting that much of the known Roman activity is related to the lead industry.

2.3.17 A heavy Roman presence is recorded in Flintshire, with an extensive Roman settlement previously identified at the southern extent of the settlement of Flint within the Pentre Ffwrndan area and Croes Atti.

2.3.18 Extensive excavation at the scheduled monument, Pentre Bridge Roman Site, has revealed a 'villa'-type complex thought to represent the residence of an official associated with the Imperial control of lead mining in the district. Elsewhere within Pentre Ffwrndan, various excavations have revealed evidence of lead smelting furnaces and associated industrial and domestic buildings within the wider roadside settlement.

2.3.19 The industrial settlement at Pentre Ffwrndan appears to have been sited on the shores of the Dee estuary in order to take advantage of transport by both sea and land. Other factors which may have influenced the siting of the settlement were the availability of water from the stream entering the Dee at this point and the availability of fuel. Until the later 17th century lead smelting remained heavily dependent upon the use of charcoal and it is likely that the felling of local woodland had a significant and perhaps long-lasting impact upon the local environment at this period.

2.3.20 The evidence suggests that a large, substantial sized permanent settlement was located close to the Chester to St Asaph Roman Road and would have acted as a stopping off point for travellers, with this extending between and included the two Roman scheduled monuments Pentre Bridge Roman Site and Croes Atti. Excavations in the early 1920s and throughout the 1980s recorded the remains of several substantial stone walls and timber remains in a concentrated area around Pentre Farm. Several linear and L-shaped stone walls were identified, along with a potential clay floor with timber posts.

2.3.21 Evidence of a bath site in the location of Pentre Farm was identified through archaeological investigations in the 1960s. The investigations identified a timber structure with a partitioned courtyard. Further investigations recorded a hypocaust floor, several sherds of pottery and several inhumations. Seven furnaces associated with cooking were also identified through geophysical survey at Pentre Farm, with subsequent investigations identifying intact furnaces or fragments of furnaces which have been recorded grouped

together; their grouping indicates that this may have been a distinct area of cooking for the settlement.

2.3.22 The settlement may have had a small cemetery associated with it, with three burials recorded in the fields north of Chester Road; these were discovered in the mid-19th century. A fourth burial was identified adjacent to Chester Road and may be part of this wider cemetery or a roadside burial associated with the Chester to St Asaph Road. A small cemetery was identified in 1846, with several lead smelting furnaces located nearby.

2.3.23 The potential eastern edge of the Roman settlement may be located at Quarry Farm. In this area, a square shaped enclosure and a small cremation cemetery comprising seven cremations (six of these were un-urned, with one urned and dating to between the 1st and 2nd century AD) were identified.

Early medieval (AD 410 to 1066)

2.3.24 The early medieval period in Wales (and North West Britain more generally) is perhaps one of the least well-known eras of the British past. This partly reflects the dearth of historical information as well as the difficulty in archaeologically identifying evidence from this period.

2.3.25 The history of North East Wales has inevitably been influenced by a geographical position straddling the English lowlands and the uplands of Wales. This natural divide is clearly relevant to early medieval activity in the area and is part of the initial transition from Roman imperial control to British regional kingdoms but more obviously to the evolving relationship of Anglo-Saxon and British political groups from the 7th century onwards. That later phase of change eventually led to the creation of Wales itself as one of its ultimate legacies, and created two of the most dramatic early medieval monuments in Europe - Wat's and Offa's Dykes. Viking incursions also reflect the strategic significance of the locality, and in a different way the same topographical and cultural fault-line also structured the development of the early church.

2.3.26 Offa's Dyke can be firmly dated to the later 8th century AD through a range of archaeological and historical evidence. Archaeological excavations on Wat's Dyke at Oswestry recently produced a radiocarbon date centred on the mid-5th century AD. The courses of Wat's Dyke and Offa's Dyke both avoid the Site, and lie to the south and west, with Wat's Dyke approaching the coast in the area of Flint and Holywell. In one sense, the course of Wat's Dyke marks the divide between the higher ground of the Clwydian Range and the lower coastal strip along the Dee estuary, perhaps suggesting that this difference in topography might also have marked a difference in the political landscape at one point in the early medieval period.

2.3.27 The Site lies within the early medieval cantref (a land division important in the administration of Welsh law) of Tegeingl, within the wider post-Roman Kingdom of Gwynedd. The name of the territory has its likely roots in the name of the Iron Age and Romano-British tribe who inhabited the area – the Deceangli – providing a notable indication of the persistence of the area's local identity through time. The cantref would have been administered by kings and princes on a local level at royal centres known as llysoedd (sing llys).

2.3.28 The later medieval castle site of Hen Blas, to the west of Flint, has been suggested as a candidate for the llys site of Coleshill, a site associated, albeit uncertainly, with Welsh royal use in around 1240, and almost certainly earlier than that. At Llys Edwin, a likely later, medieval moated site has also been tentatively suggested as the site of a llys associated with the historical figure Edwin of Tegeingl, who likely ruled the area in the 11th century.

2.3.29 Aside from potential royal sites, research by the CPAT in 1995/96 and 1998 has identified a number of churches in the area around the Site as likely having early medieval origins. Most notably, the Grade II* listed Church of St Deiniol at Hawarden and the Grade II* listed Church of St James in Holywell are thought to have developed from foundations in the 6th and 7th centuries.

2.3.30 The Site has no clear early medieval associations, although the wider historical background of the area illustrates clearly that it lay within a commonly contested area, at the edge of Welsh lordship and occasionally under the sway of Anglo-Saxon control throughout this period. This history contributes strongly to the significance of the historic assets which date from this time, or indeed have traditional associations to it, which is in no small part related to the vital importance of this period in the formation of Wales as a nation, and the national identity of the Welsh people.

Medieval (1066-1640)

2.3.31 The 11th century saw the first Norman incursions into Wales, their initial defeat by Gruffydd ap Cynan (d. 1137) and the start of a successful period of Welsh rule which was to end in 1282/3 with the death of Llywelyn ap Gruffydd and conquest by Edward I. During the tense period which led to his eventual campaign of conquest, in July 1277, Edward launched a punitive expedition into North Wales with an army of 15,500. From Chester the army marched into Gwynedd, camping first at Flint and then Rhuddlan and Deganwy, most likely causing widespread damage to the areas it passed through. Supported by an English fleet, the campaign relied on the Flintshire coastline as a route of supply and communication.

2.3.32 Flint Castle was commissioned by Edward I in 1277 to dominate the region which had been brought under firm English control following the rise of Llywelyn ap Gruffydd. The masonry fortress and its contemporary fortified town served as a base for further invasion into North Wales, and was instrumental in the final collapse of organised Welsh resistance to the English Crown when it was attacked on Palm Sunday 1282. Throughout the 14th and 15th centuries Flint Castle served as a financial and administrative centre for Flintshire, and was thus retained in good order. It was then garrisoned by royalists in 1642 and served as a base for the harrying of Chester during the English Civil War, during which it passed repeatedly from royalist to parliamentarian control before eventual surrendering to parliament in 1646. Flint Castle was demolished on the orders of parliament following the end of the Civil War, together with a number of other fortifications in Wales.

2.3.33 Ewloe Castle was a native Welsh stronghold built by Llywelyn ap Gruffydd following his seizure of much of modern Flintshire from the English Crown in 1257. Following the succession of Edward I in 1272 Llywelyn failed to answer five summonses to do homage to the new king, who declared his

intention to go to war against the proclaimed rebel. Within a year the Prince of Wales had been defeated; the castle fell to the English and was never to be used again as a fortified stronghold. Together, sharing historical and geographical ties, Ewloe and Flint represent an important pairing of monuments which embody the tumultuous history of this period of conflict.

2.3.34 Aside from the major castles of Ewloe and Flint, Hen Blas Castle, Bryn Castell Castle Mound and Bryn y Cwm Mound & Bailey Castle also lie within the wider landscape of Flintshire and illustrate the presence of lesser, native Welsh, earthwork castles of the 11th to 14th centuries. Alongside the moated sites at Llys Edwin, Hafod Wood Moated Site, Shotwick Hall moated sute and Puddington Old Hall, these monuments represent local elite centres of this earlier part of the medieval period. A number of these sites developed into later medieval manorial residences with late medieval houses, as at Shotwick and Puddington, illustrating continuity of elite use into this more settled period. Beyond these sites, manorial residences of this later period are further represented by similar houses at Northop Hall Farm (Llaneurgain) and Coed-y-cra Uchaf.

2.3.35 During the medieval period, Connah's Quay, as listed in the Domesday Book, was known as 'Wepre'. The village was recorded in the survey as having a total population of 6 households and woodland is also recorded, measuring half a league. The immediate area around the Site appears to have been in largely agricultural use, and relatively wooded, with only very small settlements at Golftyn, Leadbrook, Llys Edwin and Coleshill. The location of a stone town cross that may have belonged to the settlement of Pentre just south of the town of Pentre.

2.3.36 The Site has no clear medieval associations, although the wider historical background of the area illustrates clearly that it continued to lie within a commonly contested zone, particularly hosting very significant events in the Edwardian conquest of Wales.

2.3.37 The Site is situated in an area that was largely used for agricultural farming during the medieval period, with evidence of ridge and furrow located underneath the current location of the A548 roundabout.

Post-medieval (1640 to 1900)

2.3.38 The industrial boom from the 18th century onwards can be seen in the landscape across Flintshire, and more saliently around Connah's Quay. Perhaps the most significant post-medieval development in the vicinity of the Site, in terms of its proximity, is the creation of the Chester and Holyhead Railway. Dating, like many others, from the period of 'Railway-mania', the railway is one of Britain's most important main line routes, connecting London with mainland North Wales, and the Isle of Anglesey. The line was completed in 1850 under the direction of Robert Stephenson whose work included the highly significant tubular bridges that cross the river at Conwy and the Menai Straits near Bangor, the latter one destroyed by fire in 1970.

2.3.39 The line was built primarily to support British rule in Ireland, a physical connection which embodied the political union, but was later instrumental in developing North Wales as a major tourist destination. The line can be seen as the principal factor in the development of resorts such as Llandudno,

Rhyl, Colwyn Bay and Prestatyn during the later 19th century. Today the railway remains an important part of the Welsh and UK networks, providing trains that link North Wales with Cardiff and major English cities, as well as connecting with ferry services to Ireland.

2.3.40 A section of the Buckley branch of the London and North East Railway line is located centrally within Connah's Quay, just south of Connah's Quay Central Park. Several railway boundary posts are still extant in Pentre, just south of the existing railway line.

2.3.41 Much land has been made available for industry through extensive reclamation from the Dee's wide estuary. West of Chester, the river flows along an artificial channel excavated between 1732 and 1736. The channel was an attempt to improve navigation for shipping and reduce silting. Chester's trade had declined steadily since the end of the 17th century as sediment had prevented larger craft reaching the city, spelling the end for the Port of Chester.

2.3.42 After four years' work, the river was diverted from its meandering natural course, which passed Blacon, Saughall, Shotwick Castle, Burton and Parkgate and up the west shore of the Wirral. Instead, the new canalised section followed the coastal edge along northeast Wales. During this time, Sealand and Shotton were reclaimed from the estuary. Land reclamation in this area continued into the 20th century and includes the reclamation of the land within the Site in the early 20th century. The river's natural course can still be determined by following the bank and low bluffs that mark the western edge of the Wirral Peninsula. The former large expanse of tidal water that once filled the wider estuary is recalled in the Welsh name for Hawarden, Penarlâg, 'the hill above the lake'.

2.3.43 A number of maritime assets have also been identified within the study area including shipwrecks such as 'The Betsey', which was a wooden sloop that sank in 1875; and the wreck of the 'Lord Delamere' which is located at the edge of the tidal mudflats and was a wooden-built sailing barge, built in 1871 by Ann Deakin at Winsford, Cheshire.

2.3.44 With the land reclamation of the Dee Estuary undertaken throughout the 18th and 19th centuries, and an increase in industrialisation across Wales occurring, a port was quickly developed at Connah's Quay. The port and docks at Connah's Quay were originally established in 1737, with the dock still surviving today, surrounded by stone walls, however, areas of the dock were infilled with new concrete revetments in the late 19th century and are located along the banks of the River Dee. A small reservoir was built just to the south of the eastern shipyard, and is first recorded on the 1870 Ordnance Survey (OS) map, used to flush the inlets from the dock.

2.3.45 The port expanded relatively rapidly throughout the late 18th and 19th centuries, with several shipyards built in 1737. To accompany these shipyards, eastern and western slipways were built to allow movement of ships into and out of the River Dee. A riverside wall was recorded on the 1870 OS map, close to the eastern shipyard, however, no surviving remains of the wall have been recorded. A breakwater was built during this period of expansion on the northern bank of the River Dee.

2.3.46 Four wharfs were built in the mid to late 19th century. One of these wharf revetments was built from stone, and still survives; three of the wharf revetments were built from timber and are located between the shipyards. Much of the timber wharfage has been lost, however, there are still some remnants within the River. A causeway is located on the northern side of the River Dee, likely leading from the towns such as Chester to Connah's Quay.

2.3.47 The development of Connah's Quay and the surrounding landscape can be partially traced through cartographic analysis, with the earliest plan of the Site and surrounding area being the 1840 Northop Tithe map. The area surrounding the Site is shown as largely agricultural, with much of the land divided into very small parcels of land. Several roads or trackways are present leading from the Dee Estuary, and the location of the Site in the north, on a southern trajectory. A small farmstead is located at Oakenholt and at Kelsterton, with a small settlement located along the foreshore located at Connah's Quay and it had clearly not been developed into a substantial port yet.

2.3.48 The Flint Parish tithe map of 1840 highlights that the Proposed CO_2 Connection Corridor is located within agricultural fields during this period. The agricultural fields to the west and south-west of the Site are in general smaller in size, with many of the fields divided into thin strips of adjacent land.

2.3.49 The fields to the south of the Site underwent a major alteration between 1840 and 1871, with these smaller apportionments amalgamated into much larger fields. Kelsterton Lane and Paper Mill Lane were both established to connect Kelsterton Farm and Oakenholt Hall to the wider settlements in the area such as Connah's Quay. Several of the connecting trackways that were present on the earlier 1840 map have been abandoned and are not present by 1871.

2.3.50 By 1871, the port around Connah's Quay had become much more developed, with the town expanding greatly in the preceding 30 years. The B1529/Church Street was established by 1871, with several structures located along its route.

2.3.51 The expansion of Connah's Quay can be seen in the amount of civil structures built in the early 19th century, including St Mark's school which was built in 1837; The Old Quay House Inn which is first identified on the 1870 OS map, but likely dates to the late medieval/early post-medieval period and Rockcliffe Hall which was built in the Victorian period.

2.3.52 With the burgeoning mining and coal industry in North Wales, three coal landing stages were constructed at Connah's Quay to allow transportation of large amounts of coal into and from the transport ships.

2.3.53 The town of Connah's Quay developed and expanded with the development of the port during the 18th and 19th centuries. This development and increase in population led to a number of churches being built to serve the local laity. These included three Methodist Churches built in 1876 in a vernacular style and St John's Church (HER 124897).

2.3.54 Throughout the 19th century, other industrial buildings were built to accommodate and serve the local population, these included a smithy

workshop located along Church Street which is now used as a farmhouse. A boundary marker is located just south of Rockcliffe Hall, and may be associated with the fields the farmhouse used to serve.

2.3.55 Several industrial sites were also developed just north of Connah's Quay, including a chemical factory which is first recorded on the 1871 OS map, a sawmill and a brickyard.

2.3.56 Within the current location of Connah's Quay park, the location of a brickfield and several brickworks have been recorded, however, no visible trace has been found on the surface and were likely lost during the creation of the park. Wepre Tramroad was located close to these brickyards, with a further associated storage area located just south of these brick works.

2.3.57 Several rifle ranges were built in Connah's Quay and Flint, with Connah's Quay Rifle Range first recorded on the 1900 OS map, and likely dates to between 1870-1899. The rifle range was located in the south-eastern corner of the Site. A second rifle range was located in the marshland, on the southern bank of the River Dee. The rifle range (HER 84197) is also first recorded on the 1871 OS map and associated rifle shooting butts (earthen banks) are still extant.

2.3.58 Historic mapping of the rifle range at Connah's Quay suggests that the rifle range had targets and range markers, firing positions – which may have been trenches or earthen mounds – and a marker's hut or store. All of these are likely to have been very ephemeral, and none are considered likely to have survived the subsequent development of the area for the first phase of the original Connah's Quay power station in the early 1950s and subsequent redevelopment of the land within the Site.

2.3.59 The scheduled monument of Kelsterton Brewery is said to be the first brewery business in Flintshire. Established by Thomas Bate in 1818, the brewery exploited the water of the Kelsterton Brook. Having acquired the estate, Bate transferred his brewery business to Kelsterton, where the brewery was built in 1818. Around the same time, he rebuilt Kelsterton Hall on the opposite side of the road. The two historic assets of the brewery and hall together form an important historically linked group with a shared history which marks one of the area's earliest features related to the process of industrialisation, a theme now vital to the contemporary character of Deeside.

2.3.60 It was during the late 18th and 19th centuries that the agricultural landscape was altered though the various enclosure acts that amalgamated the previously open and irregular medieval field systems into a much more ordered and rigid pattern. It was during this period that many of the surviving and extant farmsteads were built to serve these new field systems.

2.3.61 The wider landscape includes a high number of 19th century farmstead complexes, including Bryn-Mawr Farmstead and Coed-Onn Farmstead.

2.3.62 The settlement at Kelsterton developed over the 18th and 19th centuries, with Kelsterton Farm located just to the south of the existing B5129. Several farmstead structures are associated with the farm. Further examples of post-medieval industrial expansion are visible in the establishment of a brewery, which was demolished in 1900, an associated brewery reservoir, and a stone

quarry. An embankment was built at Kelsterton as coastal protection and is located within the Site, enclosing the existing Connah's Quay Power Station site.

2.3.63 The settlement at Leadbrook developed over the post-medieval period. Leadbrook Hall is a 19th century Grade II listed dwelling, with associated Leadbrook Hall Farm and farm buildings. Remains of a coal mining operation are located in a field just east of Leadbrook farm. Evidence of industrial activities is present surrounding the settlement of Leadbrook, with the location of a limekiln and a 17th and 18th century coal pit. The nearby settlement of Little Leadbrook also contained a farmstead and associated ancillary farm buildings.

2.3.64 The town of Pentre, much like Connah's Quay, expanded and became more developed throughout the mid to late 18th and 19th centuries with the advent of coal mining and the expansion of Connah's Quay port. Indeed, a wharf was built at Pentre, just north-east of the town. The settlements of Flint and Pentre had a number of mills and associated buildings within the town, including a single structure and a flour mill and associated mill pond and sluice gate. One of the mills at Croes Atti had an associated pond and demolition debris.

2.3.65 The small settlement at Oakenholt was developed around St David's Church. A building survey by Clwyd-Powys in 2015 confirmed that the church was built in 1872. Oakenholt Hall dates to the Georgian period, with some elements of earlier farm buildings, and a well. Archaeological investigations have identified some of the old field boundaries that correlate to the boundaries observed on the 1871 OS mapping with drainage ditches and a footpath running adjacent to these old field boundaries.

2.3.66 Whilst agricultural farming was evident at Oakenholt, there is substantial evidence for a burgeoning industrial landscape. A colliery indicates that mining was an important industrial activity to the settlement, with evidence of a now-demolished mill and a limekiln located just outside of the settlement. A mound of earth has also been observed in one of these fields which has been identified as a probable dumping of rubble from a nearby quarry.

2.3.67 Across the landscape, marl extraction and quarrying was occurring on a large scale. This is evident through the amount of marl extraction and quarrying pits located across the local landscape. A spread of marl extraction pits was recorded in the fields to the west of Little Leadbrook; two of these pits are located within the Proposed CO_2 Connection Corridor, with the third located approximately 50 m west of the Site.

Modern (1900-Present)

2.3.68 In modern times, the principal interest in the area around the Site has been its development for industrial uses, including the widespread reclamation of land from intertidal areas within the Dee Estuary to accommodate large-scale industrial developments.

2.3.69 The 1900 OS map highlights very little change to the wider area; the land within the Dee estuary foreshore is still yet to be reclaimed. The agricultural fields to the south have been unaltered between 1871 and 1900. The map notes an old coal quarry and disused shaft just south of the Site and east of

Oakenholt. By 1910 the OS map indicates that a programme of land reclamation has commenced in the Dee estuary. Several small inlets are noted on the map within the Site.

2.3.70 The 1938 OS map shows Connah's Quay to have developed considerably since the early 20th century. Perhaps one of the earliest and most significant industrial developments within the immediate area was the creation of the Hawarden Bridge Iron Works later Shotton Steelworks on the northern bank of the River Dee. An imposing, decorative office building was added to the east of the main steelworks in 1907, which was supplemented with a further support building constructed in c.1950 at a time of great expansion of the steelworks.

2.3.71 The Second World War had increased demand for steel sheeting and during the post-war period of the 1950s the workforce rose to 10,000, with a large-scale expansion of the steelworks. The 1950s office and support buildings were constructed in a modernist style, influenced by the Festival of Britain, and with a surrounding and integral contemporary designed garden and landscape designed by the distinguished landscape architect Brenda Colvin (1897-1981).

2.3.72 Further industrial development is visible just north of Flint, with the construction of Flint Alkali Works. The Flint Alkali Works site was originally a leadworks built in 1852, and subsequently sold to Courtaulds in 1921 and converted to an Alkali works. It was demolished in the latter half of the 20th century, with no above-ground remains surviving.

2.3.73 Connah's Quay was an important port during the Second World War, used to transport materials from Wales to Chester and further afield. As such there are remnants of a number of World War II features within the study area. Due to Connah's Quay's importance as a working dock during the war, an aerial defence emplacement was built to protect Flint and the local area and Connah's Quay drill hall was used by the 5th Battalion during the Second World War. Kelsterton prisoner of war camp was a house used to house prisoners of war at Kelsterton. A second prisoner-of-war camp was located at Wern Hall, Northop. War memorials to fallen service people have been erected across the town of Connah's Quay.

2.3.74 The original coal-fired Connah's Quay power station was opened on 16 September 1954, built on reclaimed land south of the Dee estuary. The original coal-fired power station was closed in 1984 and demolished in 1992, and the site was cleared of all standing structures. The south-eastern corner of the Site is located on the site of the former coal-fired power station and, since demolition, this area has remained mainly undeveloped. A separate electrical substation was constructed in the 1970s. The land is now occupied by the existing National Grid 400 kV Deeside Substation and a 132 kV substation.

2.3.75 The current gas-fired power station was completed in 1996 on land to the west of the original coal-fired power station, occupying the south-eastern corner of the Site. The power station was constructed on reclaimed land and the former settlement lagoons which raised the site to its current height, which is generally 7 m AOD with localised variations. Beyond the Site, further large-scale industrial development has taken place at Connah's Quay

and Queensferry to the south-east, and at Deeside Industrial Park to the east, on the north side of the Dee.

3. Scope of Work

3.1 Overview of Scope

Archaeological Monitoring and Recording

3.1.1 Two areas within the Site have been identified as requiring archaeological monitoring and recording, these are:

- the Proposed CO_2 Connection Corridor; and
- the Surface Water Outfall Area.

The Proposed CO_2 Connection Corridor

3.1.2 Works within the Proposed CO_2 Connection Corridor comprise open cut trenching for a new pipeline, a temporary compound and construction laydown area.

3.1.3 The **Terrestrial Heritage DBA** (**Appendix 17-A** (**EN010166/APP/6.4**)) has identified a medium potential to encounter below ground archaeological remains dating to the Roman period within this area of the Site. However, there is the potential to encounter archaeological remains dating to all periods.

3.1.4 Archaeological monitoring and recording of any below ground works during construction in this area will be required, including any topsoil / subsoil striping to facilitate the construction of compounds and laydown areas, and the cutting of the trench for the pipeline.

3.1.5 Trial trench evaluation is proposed within the Proposed CO_2 Connection Corridor as part of the HyNet Carbon Dioxide Pipeline project (Ref 4). Should those evaluation works be completed prior to the start of the construction phase of the Proposed Development, and the results made available to the Applicant, the results will be reviewed to assess the requirement for further archaeological mitigation in this area, and as such, the archaeological monitoring and recording within the Proposed CO_2 Connection Corridor set out in this Overarching WSI may be subject to change, in consultation with the Archaeological Advisor to the LPA.

Surface Water Outfall Area

3.1.6 Works within the Surface Water Outfall Area comprise maintenance works to clear debris and repairs to the existing surface water outfall. Construction of a new outfall structure for surface water drainage discharge will also be required, adjacent to the existing outfall. This will require excavation works within the edge of the saltmarsh, which may entail trenchless construction methods or open excavation. Excavation will be undertaken either by hand or use of mini diggers.

3.1.7 The **Marine Heritage DBA** (**Appendix 18-A** (**EN010166/APP/6.4**)) has identified a medium potential to encounter archaeological remains (including shipwreck and aircraft material) and deposits of palaeoenvironmental potential within the Surface Water Outfall Area. Additionally, operation of the

Surface Water Outfall Area could lead to erosion of deposits which could expose previously unrecorded archaeological remains.

3.1.8 Archaeological monitoring and recording of any below ground works during construction in this area will be required.

3.1.9 In addition, a walkover survey once the new outfall is operational will be required to assess any eroded deposit and whether any previously unrecorded archaeological remains have been exposed. Should any archaeological remains be identified during this walkover, the excavation and recording strategies outlined for the archaeological monitoring and recording works will be implemented (refer to Section 3.3).

Protocol for Unexpected Archaeological Discoveries

3.1.10 In addition to the two components of the Proposed Development discussed above which require archaeological monitoring and recording, a protocol for unexpected archaeological discoveries will be implemented across the entire Site for all components of the Proposed Development. The methodology for this is set out in Section 3.4.

3.2 Aims and Objectives

General Aims and Objectives

3.2.1 The general aims and objectives of the archaeological works are:

- to identify the presence or absence of surviving archaeological remains within relevant areas of the Site;
- to characterise and date any archaeological features, deposits or finds recovered; and
- to produce a report on the findings of the archaeological works.

Research Framework and Regional Research Agendas

3.2.2 Consideration of research themes is key to understanding the potential evidential significance of archaeological remains. The Archaeological Contractor will set out specific research frameworks and agendas relevant to the scope of works for that element of the Proposed Development, within the Site-specific WSI.

3.3 Methodology for Archaeological Monitoring and Recording

Document Requirements

3.3.1 Prior to the start of works for each component of the Proposed Development set out above in Section 3.1, a Site-specific WSI will be required to be prepared by the Archaeological Contractor and approved by the LPA, following consultation with the Archaeological Advisor to the LPA (Heneb) and the RCAHMW.

3.3.2 A general outline of the requirements of the content of the Site-specific WSI is set out in Section 4 below.

3.3.3 In addition, the Archaeological Contractor shall prepare and submit a Risk Assessment and Method Statement (RAMS) for the archaeological works prior to the commencement of the works for each component of the Proposed Development set out above in Section 3.1. The draft RAMS will be submitted to the undertaker and its appointed Principal Contractor for their review and approval prior to the commencement of the fieldwork.

Constraints

3.3.4 The undertaker will be responsible for identifying all constraints within the Construction and Operation Area, including landscape and ecological considerations, utilities, Unexploded Ordnance (UXO), contaminated ground etc, and will make all relevant information and reports on any such constraint available to the Archaeological Contractor.

3.3.5 The undertaker and its appointed Principal Contractor will be responsible for identifying all hazards on site and shall be aware of the hazards of working close to overhead and buried services, including high voltage overhead cables, and shall be responsible for taking the necessary precautions to ensure all personnel, including the Archaeological Contractor, maintain a safe working distance at all times.

Archaeological Monitoring

3.3.6 The Archaeological Contractor will be present on site as necessary to monitor all excavation and/or soil disturbance for the defined parts of the Site that require archaeological monitoring and recording as outlined above in Section 3.1.

3.3.7 If archaeological remains are identified, works will cease in the affected areas and the Archaeological Contractor will be given sufficient time to investigate, observe and record the remains as appropriate, before the works can be recommenced.

Hand Excavation

3.3.8 Archaeological remains identified for sample excavation will be cleaned and hand excavated in an archaeologically controlled and stratigraphic manner sufficient to meet the aims and objectives of the archaeological monitoring and recording. A sufficient sample of deposits/features will be investigated through sample excavation to record the horizontal and vertical extent of the stratigraphic sequence to the level of undisturbed natural deposits. Sample excavation will also target the interrelationships between features and major feature intersections to understand and record their relationships, where these are revealed / identified.

3.3.9 The area of works will be located and mapped using suitable electronic surveying equipment resulting in a digital pre-excavation plan (even if they reveal no archaeological features). The plan will be overlaid at an appropriate and recognisable scale onto the OS national grid (using digital map data).

Archaeological Recording

3.3.10 A full written, drawn and photographic record will be made of all archaeological remains, in accordance with standard archaeological methodologies.

3.3.11 The location and depth of areas monitored will be recorded. The stratigraphic sequence encountered will also be recorded, even where no archaeological deposits have been identified.

3.3.12 Where appropriate, i.e. where archaeological remains are encountered, detailed hand-drawn plans and sections of features will be produced at an appropriate scale (normally 1:50 or 1:20 for plans and 1:10 for sections). All plans and sections will include spot heights relative to Ordnance Datum in metres, correct to two decimal places.

3.3.13 Digital photography (minimum 12-megapixel resolution) will be used to record the archaeological works and will follow Archaeological Data Service (Ref 5) advice for secure long-term storage and migration of files. In addition to records of archaeological features, a number of general site photographs will also be taken to give an overview of the works area.

3.3.14 Indices of context records, drawings, samples and photographs will be maintained and checked. These will form part of the project archive. These indexed registers will be fully cross-referenced.

3.3.15 On completion of the field project the site archive will be consolidated, checked to ensure it is internally consistent and ordered as a permanent archive.

Artefact Recovery

3.3.16 All artefacts will be collected, stored and processed in accordance with standard methodologies and national guidelines. All finds, except for modern artefacts, will be collected and retained; with the exception of any potential modern aircraft or shipwreck material which will be collected and retained.

3.3.17 The Archaeological Contractor will clarify their Selection and Retention Strategy in their Site-specific WSI and will ensure that it is in line with CIfA guidelines (Ref 6). Each 'significant find' will be recorded three dimensionally. Similarly, if artefact scatters are encountered these should be also recorded three dimensionally. Bulk finds will be collected and recorded by context.

3.3.18 All recovered artefacts will be stabilised, conserved and stored in accordance with the current (at the time of the works being undertaken) national conservation guidelines and standards. If necessary, a conservator will visit the works area to undertake 'first aid' conservation treatment.

3.3.19 Artefacts will be stored in appropriate materials and conditions and monitored to minimise further deterioration.

Environmental Sampling

3.3.20 The Archaeological Contractor's Site-specific WSI will outline an appropriate environmental sampling strategy that conforms to this Overarching WSI.

Provision will also be made for the recovery of material suitable for scientific dating.

3.3.21 Any samples taken must come from appropriately cleaned surfaces, be collected with clean tools and be placed in clean containers. They will be adequately recorded and labelled, and a register of all samples will be kept. Once the samples have been obtained, they should be stored appropriately in a secure location prior to being sent to the appropriate specialist.

Human Remains

3.3.22 If human remains are discovered during the archaeological monitoring and recording, the remains shall provisionally, in accordance with current (at the time of the works being undertaken) good practice, be covered and protected and left in situ.

3.3.23 In the event of the discovery of human remains, the Archaeological Contractor will notify the Archaeological Advisor to the LPA (Heneb), the RCAHMW, and His Majesty's Coroner immediately, and all works in the vicinity of the remains should stop until an agreement has been made as to how to manage the remains.

3.3.24 The removal of human remains, if this is deemed necessary in consultation with the Archaeological Advisor to the LPA (Heneb) and the RCAHMW, will only take place in accordance with a Ministry of Justice licence and under the appropriate Environmental Health regulations and the Burial Act 1857 (Ref 7).

Treasure

3.3.25 Any artefacts which are recovered that fall within the scope of the Treasure Act 1996 (Ref 8) and Treasure (Designation) (Amendment) Order 2023 (Ref 9) will be reported to the undertaker, the Archaeological Advisor to the LPA (Heneb), the RCAHMW, and His Majesty's Coroner immediately.

3.3.26 The Archaeological Contractor will ensure that the procedures relating to the Treasure Act 1996 and the Treasure (Designation) Order 2023 are enforced, and all the relevant parties (refer to paragraph 3.3.25) are kept informed. A list of finds that have been collected that fall under the Treasure Act 1996 and related legislation will be included in the fieldwork report.

3.3.27 Artefacts that are classified as 'treasure' will be removed to a safe place. Where removal cannot be affected on the same working day as the discovery, suitable security measures must be taken to protect the finds from damage or unauthorised removal.

Wreck

3.3.28 There is a legal obligation under the Merchant Shipping Act 1995 (Ref 10) that all material identified as 'wreck' must be reported to the Receiver of Wreck[2] within 28 days of discovery. The Receiver of Wreck's remit covers all tidal waters, but does not extend to lakes or rivers beyond tidal reach.

[2] https://www.gov.uk/government/groups/receiver-of-wreck

3.3.29 According to the Merchant Shipping Act 1995, 'wreck' can be defined as 'jetsam, flotsam, lagan and derelict found in or on the shores of the sea or any tidal water' that have come from a ship, aircraft or hovercraft (vessel) and includes cargo and equipment.

3.3.30 Wreck material is reported to the Receiver of Wreck by completing a 'Report of wreck and salvage' form (MSF 6200) (Ref 11). A droit number will be assigned to each report of wreck, which could include a single or multiple objects from one location/wreck site.

3.3.31 The Receiver of Wreck's remit is to research and establish who owns the wreck and to liaise with the finder, owner or other interested parties including archaeologists and museums.

3.3.32 All material reported as wreck must be retained and held on indemnity to the Receiver of Wreck's orders whilst the droit remains open, which could extend beyond a year. The location(s) of such storage will be confirmed following discussion between the undertaker and/or its appointed Archaeological Contractor. The Receiver of Wreck must be made aware of these storage locations and any further movement of reported material.

3.3.33 If the Receiver of Wreck has not found ownership of any recovered wreck material, the material becomes 'unclaimed' and as such the property of the Crown. The Receiver of Wreck can then dispose of these items on behalf of the Crown. For material that is of historical or archaeological importance, the Receiver of Wreck will try to ensure that it is offered to an appropriate museum. If an appropriate museum or institution is not found, then the Receiver of Wreck may offer the material to the finder *in lieu* of salvage. Due to the longevity of this process, it is essential that the undertaker and/or its appointed Archaeological Contractor are fully aware of the obligations of the Merchant Shipping Act 1995 and frequently liaise with the Receiver of Wreck until a decision on ownership has been made and the droits can be formally closed.

Aircraft

3.3.34 Should aircraft material be encountered, based on the precautionary principle, it should be assumed to be military until proven otherwise. Under the Protection of Military Remains Act 1986 (Ref 12), it is an offence to tamper with, damage, move or unearth any items related to a military aircraft crash site, unless the Ministry of Defence has issued a licence authorising such an activity. Consequently, anyone wishing to recover a military aircraft or excavate a military aircraft crash site in the UK is required to obtain a licence from the Joint Casualty and Compassionate Centre (JCCC). A license is required irrespective of whether the aircraft was in the service of another nation's armed forces.

3.3.35 Application for a licence, and any subsequent work, should be undertaken in line with the Ministry of Defence's *Military Aircraft of Historical Interest: Licensing of Excavations in the UK: Notes for Guidance of Recovery Groups* (Ref 13). Should human remains be discovered, they should not be touched, but must be reported immediately to the Ministry of Defence (as per paragraph 15 of the guidance).

3.3.36 For the archaeological assessment of aircraft remains, the Archaeological Contractor will refer to available guidance such as *Military Aircraft Crash Sites: Archaeological Guidance on their significance and Future Management* (Ref 14), and *Caring for Military Sites of the Twentieth Century* (Ref 15).

Finds Processing

3.3.37 Initial processing of finds (and if appropriate other samples) will be carried out concurrently with the fieldwork. The processing of finds will be finished shortly after completion of the investigations. The finds will be retained (according to the Artefact Recovery section), washed, marked, bagged and logged on a MS Access or GIS database (or equivalent), together with their locations (if applicable) according to the National Grid (eastings, northings) and Ordnance Datum (height), accurate to two decimal places.

3.3.38 The finds assemblage will be treated, labelled and stored in accordance with the appropriate and current (at the time of the works being undertaken) guidance. At all times the Archaeological Contractor shall ensure that the processing of the assemblage is in accordance with the requirements of the LPA.

3.3.39 If appropriate, each category of find or each material type will be examined by a suitably qualified archaeologist or specialist and the results incorporated into a fieldwork report.

3.3.40 The deposition of any finds collected during the archaeological monitoring and recording and the related archive forms the final stage of this project.

Unexpectedly Significant or Complex Discoveries

3.3.41 In the event of significant or complex unanticipated archaeological discoveries during the archaeological monitoring and recording, an additional WSI, or addendum to the existing Site-specific WSI, may be required. The WSI or SS WSI addendum will set out the methodology for the detailed recording of the archaeological remains, and to allow adequate time within the construction programme. Under these circumstances the Archaeological Contractor will notify the undertaker immediately, and the discoveries will be protected from damage. If the discoveries require investigation beyond the resources allocated to the archaeological monitoring and recording, the Archaeological Contractor will estimate the additional time and resources needed to complete the archaeological investigation and will inform the undertaker. The additional WSI, or addendum, will be prepared by the Archaeological Contractor and approved by the LPA, following consultation with the Archaeological Advisor to the LPA (Heneb) and the RCAHMW.

Monitoring, Progress Reports and Meetings

3.3.42 Regular progress reports will be sent to the Archaeological Advisor to the LPA (Heneb) and RCHAWM by the Archaeological Contractor whilst the fieldwork is on-going, the timings of which are to be agreed between these parties.

3.3.43 The archaeological monitoring and recording may be subject to monitoring visits by the Archaeological Advisor to the LPA and the RCAHMW who will

have unrestricted access to the investigation, site records and any other information. The archaeological works will be inspected to ensure that it is being carried out to the required standards and that it will achieve the stated objectives.

3.3.44 A minimum of five working days' notice will be provided to Archaeological Advisor to the LPA (Heneb) and RCHAWM of the commencement of the archaeological works.

Completion of Fieldwork

3.3.45 The Archaeological Contractor shall confirm completion of the works to the undertaker, the Archaeological Advisor to the LPA (Heneb) and the RCAHMW within one working day of completing the archaeological works.

3.3.46 The work areas will be left in a tidy, professional and safe condition, and the Archaeological Contractor will ensure that all materials brought onto site are removed.

3.3.47 A fieldwork report will be prepared in accordance with the requirements set out in Section 5.

3.4 Protocol for Unexpected Archaeological Discoveries

3.4.1 In the event of unexpected archaeological discoveries being made during construction activities where no archaeological mitigation works are being undertaken (as specified in this Overarching WSI), the undertaker will notify the Archaeological Advisor to the LPA (Heneb) and the RCAHMW immediately. It is anticipated that all construction works within the vicinity of the unexpected remains will be suspended until completion of any required archaeological excavation and recording is completed in that area.

3.4.2 An additional Site-specific WSI may be required to set out the methodology for the recording of the archaeological remains, and to allow adequate time within the construction programme. The undertaker will liaise with its appointed archaeological advisor in order to determine whether the remains require further investigation.

4. Site-specific Written Scheme of Investigation

4.1 General Requirements

4.1.1 The Archaeological Contractor will be responsible for the production of Site-specific WSIs prior to the start of each stage of archaeological fieldwork. The Site-specific WSIs will be drafted in accordance with the principles and methods set out in this Overarching WSI.

4.1.2 The Archaeological Contractor will be responsible for the delivery of the archaeological works programme in accordance with this Overarching WSI and the Site-specific WSIs, and this responsibility will include all on-site and off-site archaeological works and recording.

4.1.3 The Site-specific WSIs will be approved by the LPA, following consultation with the Archaeological Advisor to the LPA (Heneb) and the RCAHMW, prior to the start of works.

4.1.4 The Site-specific WSIs will be prepared in accordance with current (at the time of writing) standards and guidance and should include the following sections as a minimum:

- a statement on the technical, research and ethical competences of the project team, including relevant professional accreditation;
- site location (including map) and descriptions;
- context of the project;
- geological and topographical background;
- archaeological and historical background;
- general and specific research aims of the project, with reference to Regional Research Frameworks;
- methodology;
- collection and disposal strategy for artefacts, ecofacts, and all paper, graphic and digital materials (including Data Management Plan and Selection Strategy);
- arrangements for immediate conservation of artefacts;
- post-fieldwork assessment and analysis of project data;
- report preparation (including details of the section headings);
- publication and dissemination proposals, as required;
- copyright;
- details of finds storage;
- programme and staffing;
- health and safety considerations;
- environmental protection considerations; and

- monitoring procedures.

5. Reporting

5.1 Fieldwork Report

5.1.1 A fieldwork report will be required following the completion of each stage of archaeological works as set out in Section 3.1.

5.1.2 The fieldwork report will include the following as a minimum:

- a summary of the results;
- a plan of the site location;
- a plan of the area of investigations;
- archaeological and historical background;
- detailed plans and sections to a known scale (if appropriate);
- general and detailed photographs, as appropriate;
- copies of on-site recording sheets and drawing, as appropriate; and
- archive deposition information including archive content list and archive deposition location statement.

5.1.3 The Archaeological Contractor will submit a copy of the draft report to the undertaker, the Archaeological Advisor to the LPA (Heneb) and the RCAHMW. In finalising the report, the comments of the Archaeological Advisor to the LPA (Heneb) and the RCAHMW will be taken into account. The finalised report will be submitted in digital (PDF) format to the Heneb Historic Environment Record, and to the undertaker.

5.1.4 An OASIS entry shall be completed at the end of the fieldwork, irrespective of whether a formal report is required. The Archaeological Consultant will complete the online form at http://ads.ahds.ac.uk/project/oasis/ within one month following completion of the fieldwork. Should technical advice be required the Archaeological Consultant will contact OASIS (oasis@ads.ahds.ac.uk).

5.2 Archive Preparation and Deposition

5.2.1 Prior to the start of each stage of archaeological fieldwork, the Archaeological Contractor will contact the recipient museum to determine the requirements for the preparation and deposition of the physical archive and finds and agree any accession numbers.

5.2.2 The archive will be prepared in accordance with the CIfA guidelines, including the Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA 2020) (Ref. 5).

5.2.3 The Archaeological Contractor will compile a Data Management Plan and Selection Strategy in line with CIfA guidelines (CIfA 2020) and include it in their Site-specific WSI.

5.2.4 The digital archive must be deposited with a Trusted Digital Repository, such as the Archaeological Data Service (ADS 2011), and it is anticipated that the repository will have in-house Data Management Plans to allow for the long-

term preservation of the digital archive data, including plans for data back-up and migration to new digital formats as they emerge.

6. General Requirements

6.1 Programme and Access

6.1.1 The programme for each stage of archaeological investigation shall be agreed between the undertaker and the Archaeological Contractor. The Archaeological Advisor to the LPA (Heneb) and the RCAHMW will be notified of the programme for the fieldwork in a timely manner.

6.1.2 Access to the defined area where archaeological mitigation works are required will be arranged and organised by the undertaker.

6.2 Confidentiality and Publicity

6.2.1 All communication regarding this project is to be directed through the undertaker. The Archaeological Contractor will refer all inquiries to the undertaker without making any unauthorised statements or comments.

6.2.2 The Archaeological Contractor will not disseminate information or images associated with the project for publicity or information purposes without the prior written consent of the undertaker.

6.3 Copyright

6.3.1 The Archaeological Contractor shall assign copyright in all reports, documentation and images produced as part of this project to the undertaker. The Archaeological Contractor shall retain the right to be identified as the author or originator of the material. This applies to all aspects of the project. It is the responsibility of the Archaeological Contractor to obtain such rights from sub-contracted specialists.

6.3.2 The Archaeological Contractor may apply in writing to the undertaker to use or disseminate any of the project archive or documentation (including images). Such permission will not be unreasonably withheld.

6.4 Adherence to WSI

6.4.1 The Archaeological Contractor will undertake the works in accordance with this Overarching WSI, the Site-specific WSI and in accordance with the relevant RAMS. No variation from, or changes to, the Overarching WSI, Site-specific WSI and/ or RAMS will occur except by prior agreement with the undertaker, and where appropriate, consulted on with the Archaeological Advisor to the LPA (Heneb) and the RCAHMW.

6.5 Insurances and Health and Safety

6.5.1 The undertaker is responsible for providing information on any relevant constraints within the Site, including, but not limited to, recently conducted service and utility searches (for both buried and overhead services) and UXO reports.

6.5.2 The Archaeological Contractor shall prepare a RAMS and a project specific Health and Safety Plan and submit these to the undertaker for approval prior to starting on site. These should include staff CVs which should detail the

Health and Safety qualifications held by the Archaeological Contractor site team, including Site Management Safety Training Scheme (SMSTS) and Site Supervisors Safety Training Scheme (SSSTS).

6.5.3 The Archaeological Contractor shall at all times maintain a safe working distance from any overhead and buried services / utilities. In addition, the Archaeological Contractor shall be responsible for any requirements with regard to work in the vicinity of watercourses.

6.5.4 The Archaeological Contractor's on-site personnel will wear personal protective equipment (PPE) as defined by the Archaeological Contractor's approved RAMS undertaken in accordance with mandatory requirements. Any visitors to the investigations will require a site induction in accordance with the Archaeological Contractor's Health and Safety requirements and will have read the appropriate Archaeological Contractor's site-specific RAMS. The Archaeological Contractor will ensure that any visitors to the investigations are equipped with suitable PPE prior to entry to the site. All equipment that is used in the course of the fieldwork must be 'fit for purpose' and be maintained in a sound working condition that complies with all relevant Health and Safety legislation and recommendations.

6.5.5 The Archaeological Contractor will assure the provision and maintenance of adequate, suitable and sufficient welfare and sanitary facilities at appropriate locations for the duration of the works. The locations for the temporary site welfare facilities and vehicle parking will be agreed with the undertaker prior to the start of the works. Facilities, roles and responsibilities shall adhere to the provisions of the relevant Health and Safety Executive guidance (Ref 16).

6.5.6 All site personnel will familiarise themselves with the following:

- site emergency and evacuation procedures;
- the site's health & safety coordinator;
- the first aider; and
- the location of the nearest hospital and doctor's surgery.

References

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Ref 15. Cadw (2009). Caring for Military Sites of the Twentieth Century. Available at: https://cadw.gov.wales/sites/default/files/2019-04/Caring_for_Military_Sites_EN.pdf. (accessed 21/07/2025)

Ref 16. Health and Safety Executive (HSE) (2007). Guidance for employers on welfare provisions. Available at: https://www.hse.gov.uk/pubns/indg293.htm. (accessed 21/07/2025)

Abbreviations

Abbreviation	Term
AOD	Above Ordnance Datum
bgl	below ground level
CCGT	Combined Cycle Gas Turbine
CCP	Carbon Capture Plant
CIfA	Chartered Institute for Archaeologists
CO_2	Carbon Dioxide
DCO	Development Consent Order
ES	Environmental Statement
FCC	Flintshire County Council
GI	Ground Investigation
ha	hectares
JCCC	Joint Casualty and Compassionate Centre
km	kilometre
LPA	Local Planning Authority
m	metre
OS	Ordnance Survey
PPE	personal protective equipment
RAMS	Risk Assessment and Method Statement
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
SMSTS	Site Management Safety Training Scheme
SSSTS	Site Supervisors Safety Training Scheme
UXO	Unexploded Ordnance
WSI	Overarching Written Scheme of Investigation

Figure 1 Site Location Plan

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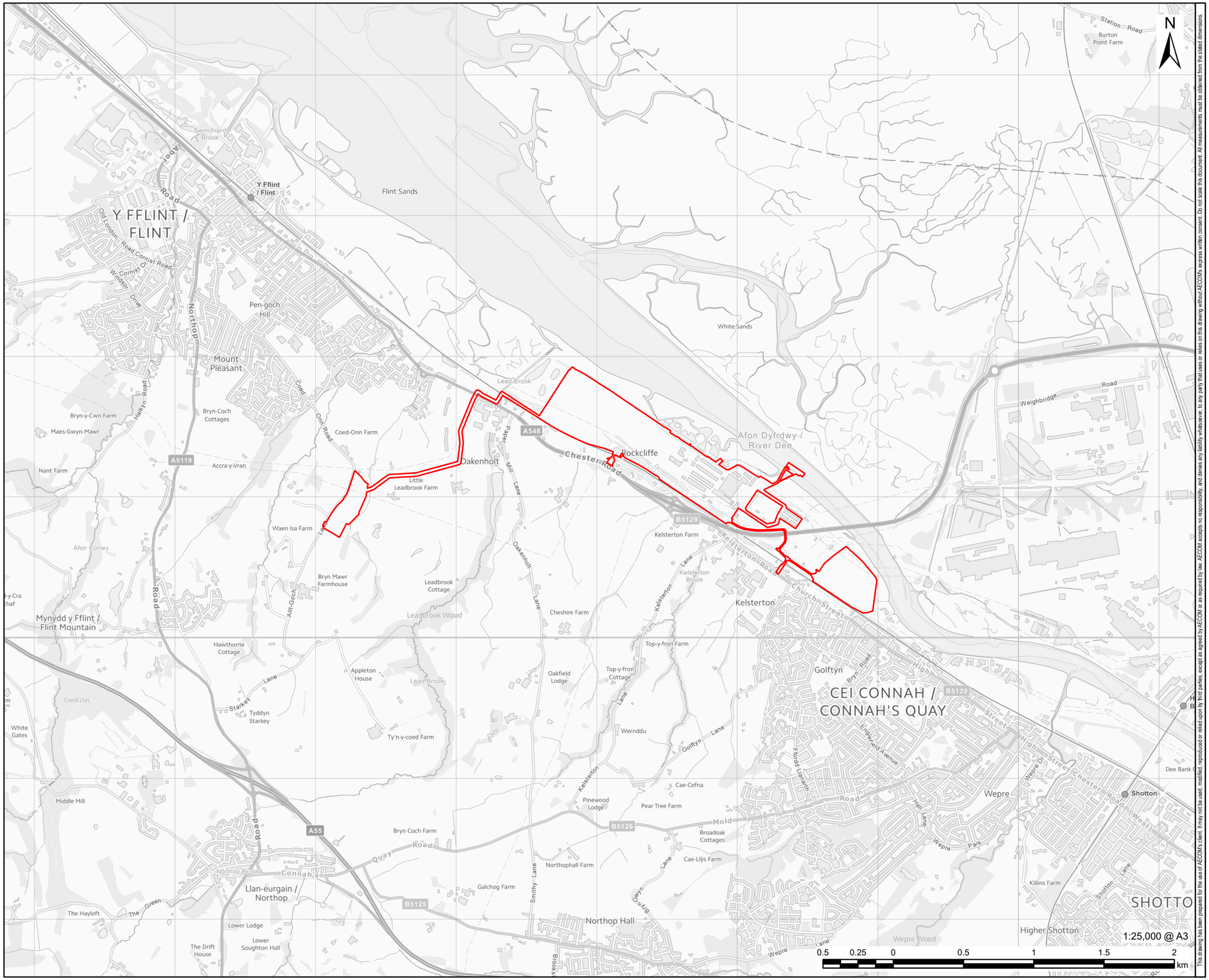

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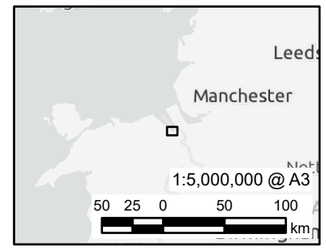
LEGEND

Construction & Operation Area



NOTES

ISSUE PURPOSE

WSI for Archaeological Mitigation

DATE

July 2025

PROJECT NUMBER

60717119

FIGURE TITLE

Site Location Plan

FIGURE NUMBER

Figure 1

Figure 2 Archaeological Mitigation Areas

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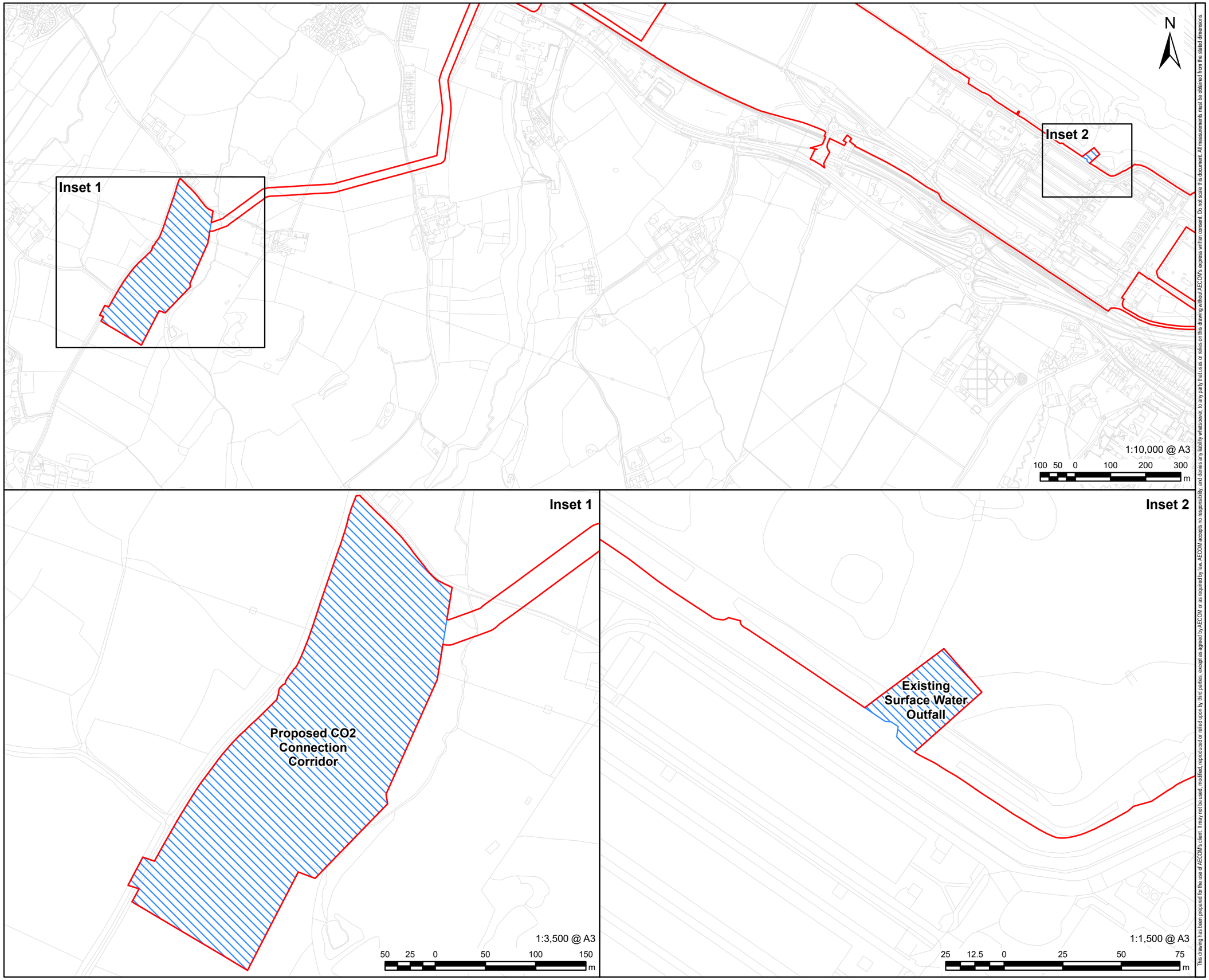

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LEGEND

- Construction and Operation Area
- Archaeological Mitigation Area

NOTES

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FIGURE TITLE

Archaeological Mitigation Areas

FIGURE NUMBER

Figure 2

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