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## 13 Archaeology and Cultural Heritage

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### Introduction and Methodology

- 13.1 This chapter considers with the likely effects of the project on cultural heritage resources, including buried archaeological remains, historic buildings and historic landscapes. In line with the terminology introduced in the draft *Heritage Protection Bill* (2008), these resources are referred to as 'heritage assets'. The assessment addresses temporary (construction) effects as well as any long term effects resulting from operation of the project.
- 13.2 Heritage assets could be affected in a number of ways, principally:
- i) Physical loss of, or damage to, archaeological remains, historic buildings and historic landscapes;
  - ii) Effects on the settings of significant monuments and buildings; and
  - iii) Effects on the quality and integrity of the overall historic landscape.
- 13.3 The methodology for the assessment was proposed within the Scoping Report that was submitted to the Department for Energy and Climate Change (DECC) in October 2009 (revised December 2009).
- 13.4 The basis of the methodology has been to collate all information from within defined study areas in order to identify known and potential heritage assets. The importance or value of each asset is assessed and the likely magnitude of impact upon them is considered using recognised methodologies and best practice.
- 13.5 Using a matrix approach that measures both asset value and impact magnitude, professional judgement has been used to assess the significance of the effect of the project on each asset.

### Baseline Data Collection

- 13.6 Baseline data collection was undertaken in 2007 by SLR Consulting. Those data have been used as the basis for this assessment, along with the results of a site visit undertaken by RPS in December 2009.
- 13.7 In accordance with the definition of a desk-based assessment described in the Institute for Archaeologists' *Standard and Guidance for Archaeological Desk-based Assessment* (1994, as amended), the baseline data were collected with regard to known and potential heritage assets within a defined study area. This study area was defined as the land within a 1km radius centred on the proposal site.
- 13.8 The types of heritage asset considered within a desk-based assessment (where relevant) include:

- i) *Internationally and nationally designated heritage assets such as World Heritage Sites, Scheduled Monuments, Listed Buildings, Registered Historic Battlefields, Registered Parks and Gardens of Special Historic Interest;*
- ii) *Locally designated heritage assets such as locally-listed Buildings, locally-identified Historic Parks and Gardens, Conservation Areas, Areas of Archaeological Potential (or similar);*
- iii) *Non-designated heritage assets such as buried archaeological remains and other sites recorded on the Cheshire Historic Environment Record (CHER), sites of former buildings or other features recorded on historic maps of the area or in primary and secondary documentary sources; and*
- iv) *The overall historic landscape.*

#### **Assessment of Resource Importance (Value) - Archaeological Remains**

- 13.9 There are no national government guidelines for evaluating the importance or significance (and hence the 'value') of heritage assets. For archaeological remains, English Heritage has proposed a series of recommended (i.e. non-statutory) criteria for use in the determination of national importance when scheduling ancient monuments and these are expressed in Annex 4 of *Planning Policy Guidance 16: Archaeology and Planning* (PPG 16). The criteria include period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity and potential, and can be used as a basis for the assessment of the importance of historic remains and archaeological sites. However the annex also states that *'these criteria should not be regarded as definitive ..... rather they are indicators which contribute to a wider judgement based on the individual circumstances of a case.'*
- 13.10 The criteria described above could be used as a basis for the assessment of the importance of archaeological remains of less than national significance. However the categories of regional and district/local importance are less clearly established than that of national, and implicitly relate to local, district and regional priorities which themselves will be varied within and between regions. Local, district and regional research agenda may be available and local or structure plans may also assist in this process.
- 13.11 Clearly a high degree of professional judgement is necessary, guided by acknowledged standards, designations and priorities. It is also important to recognise that buried archaeological remains may not be well understood at the time of assessment, and can therefore be of uncertain value.
- 13.12 The most recent guidance from any national agency regarding cultural heritage and Environmental Impact Assessment is from the Highways Agency, and is expressed in Guidance Note 208/07 (August 2007) that now forms part of the Design Manual for Roads and Bridges (DMRB, Volume II, section 3, part 2). Guidance Note 208/07 provides the following table as a guide for assessing the value of archaeological resources:

**Table 13.1: Factors for assessing the value of archaeological assets**

Value	Examples
Very High	<ul style="list-style-type: none"> <li>World Heritage Sites</li> <li>Assets of acknowledged international importance</li> <li>Assets that can contribute significantly to acknowledged international research objectives</li> </ul>
High	<ul style="list-style-type: none"> <li>Scheduled Monuments</li> <li>Undesignated assets of schedulable quality and importance</li> <li>Assets that can contribute significantly to acknowledged national research objectives</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Designated or undesignated assets that contribute to regional research objectives</li> </ul>
Low	<ul style="list-style-type: none"> <li>Undesignated assets of local importance</li> <li>Assets compromised by poor preservation and/or poor survival of contextual associations</li> <li>Assets of limited value, but with potential to contribute to local research objectives</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>Assets with very little or no surviving archaeological interest</li> </ul>
Unknown	<ul style="list-style-type: none"> <li>The importance of the resource cannot be ascertained</li> </ul>

**Assessment of Resource Importance (Value) - Historic Buildings**

- 13.13 For historic buildings, the assessment of importance is usually based on the designations used in the Listed Building process. However, where historic buildings are not listed, or where the listing grade may be in need of updating, professional judgement is adopted.
- 13.14 The criteria used in establishing the value of historic buildings within the listing procedure include architectural interest, historic interest, close historic association (with nationally important people or events), and group value. Age and rarity are also taken into account; in general (where surviving in original or near-original condition) all buildings of pre-1700 date are listed, most of 1700-1840 date are listed, those of 1840-1914 date are more selectively listed, and thereafter even more selectively. Specific criteria have been developed for buildings of 20<sup>th</sup> century date.
- 13.15 At a local level, buildings may be valued for their association with local events and people or for their role in the community.
- 13.16 Guidance Note 208/07 provides the following table as a guide for evaluating the value of historic buildings:

**Table 13.2: Guide for establishing the value of historic buildings**

Value	Example
Very High	<ul style="list-style-type: none"> <li>Standing buildings inscribed as of universal importance as World Heritage Sites</li> <li>Other buildings of recognised international importance</li> </ul>

Value	Example
High	<ul style="list-style-type: none"> <li>• Scheduled Monuments with standing remains</li> <li>• Grade I and II* Listed buildings</li> <li>• Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing grade</li> <li>• Conservation Areas containing very important buildings</li> <li>• Undesignated structures of clear national importance</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Grade II Listed Buildings</li> <li>• Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical association</li> <li>• Conservation Areas containing important buildings</li> <li>• Historic Townscape or built-up areas with historic integrity in their buildings, or built settings (e.g. including street furniture and other structures)</li> </ul>
Low	<ul style="list-style-type: none"> <li>• 'Locally listed' buildings</li> <li>• Historic (unlisted) buildings of modest quality in their fabric or historical association</li> <li>• Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures)</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>• Buildings of no architectural or historic note; buildings of an intrusive character</li> </ul>
Unknown	<ul style="list-style-type: none"> <li>• Buildings with some hidden (i.e. inaccessible) potential for historic significance</li> </ul>

### Assessment of Resource Importance (Value) - Historic Landscapes

- 13.17 The sub-topic of Historic Landscape is recognised as having significant overlaps with other topics such as landscape and townscape and a multi-disciplinary approach to assessment is required. This is partially to avoid double-counting and also to avoid duplication of effort. There are also significant overlaps with the other cultural heritage sub-topics, including archaeological remains and historic buildings. The elements that are considered within those two sub-topics can make significant contributions to the historic landscape, and this latter subtopic should concentrate on the overall historic landscape character and its value rather than the individual elements within it.
- 13.18 All landscapes have some level of historic significance, as all of the present appearance of the urban and rural parts of England is the result of human or human-influenced activities overlain on the physical parameters of climate, geography and geology.
- 13.19 There are number of designations that can apply to historic landscapes, including World Heritage Sites (inscribed for their historic landscape value), Registered Parks and Gardens of Special Historic Interest, Registered Historic Battlefields, and Conservation Areas. Some local plans include locally designated Historic Landscape Areas and Historic Parks and Gardens (or similar).

13.20 A model has been produced by the Council for British Archaeology, whereby the historic landscape can be divided up into units that are scaled, from smallest to largest, as follows:

- Elements - individual features such as earthworks, structures, hedges, woods etc.;
- Parcels - elements combined to produce, for example farmsteads or fields;
- Components - larger agglomerations of parcels, such as dispersed settlements or straight-sided field systems;
- Types - distinctive and repeated combinations of components defining generic historic landscapes such as ancient woodlands or parliamentary enclosure;
- Zones - characteristic combinations of types, such as Anciently Enclosed Land or Moorland and Rough Grazing;
- Sub-regions - distinguished on the basis of their unique combination of interrelated components, types and zones; and
- Regions - areas sharing an overall consistency over large geographical tracts.

13.21 The model described above can be used as the principal part of the overall assessment usually known as Historic Landscape Characterisation (HLC). However, although HLC has been undertaken for much of England, there is no significant guidance or advice regarding the attribution of significance or value to identified historic landscape units.

13.22 Guidance Note 208/07 provides the following table as a guide for evaluating the value of historic landscape units:

**Table 13.3: Guide for Evaluating Historic Landscape Character Units**

Value	Example
Very High	<ul style="list-style-type: none"> <li>• World Heritage Sites inscribed for their historic landscape qualities</li> <li>• Historic landscape of international sensitivity, whether designated or not</li> <li>• Extremely well-preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s)</li> </ul>
High	<ul style="list-style-type: none"> <li>• Designated historic landscapes of outstanding interest</li> <li>• Undesignated landscapes of outstanding interest</li> <li>• Undesignated landscapes of high quality and importance, and of demonstrable national sensitivity</li> <li>• Well-preserved historic landscapes exhibiting exceptional coherence, time-depth, or other critical factor(s)</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Designated special historic landscapes</li> <li>• Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional sensitivity</li> <li>• Averagely well-preserved historic landscapes with reasonable coherence, time-depth, or other critical factor(s)</li> </ul>

Value	Example
Low	<ul style="list-style-type: none"> <li>• Robust undesignated historic landscapes</li> <li>• Historic landscapes with specific and substantial importance to local interest groups, but with limited sensitivity</li> <li>• Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>• Landscapes with little or no significant historical interest</li> </ul>

### Assessment of Impact Magnitude – Archaeological Remains

13.23 The magnitude of an impact is assessed without regard to the value of the heritage asset. In terms of the judgement of the magnitude of impact, this is based on the principle (established in PPG16) that preservation of the asset and its setting is preferred, and that total physical loss of the asset and/or comprehensive changes to its setting is the least preferred.

13.24 It is not always possible to assess the physical impact in terms of percentage loss, and therefore it can be important in such cases to try to assess the capacity of the heritage asset to retain its character following any impact. Similarly, impacts on the setting of archaeological remains may also be more difficult to assess as they do not involve physical loss of the resource and may be reversible.

13.25 Additional methodology regarding the assessment of effects on settings is provided below

13.26 Impact scales are defined thus:

- Major: Change to most or all key archaeological elements, such that the asset is totally altered, comprehensive changes to setting.
- Moderate: Changes to many key archaeological elements, such that the asset is clearly modified, considerable changes to setting.
- Minor: Changes to key archaeological elements, such that the asset is slightly altered, slight changes to setting.
- Negligible: Very minor changes to elements or setting.
- No change: No change.

### Assessment of Impact Magnitude – Historic Buildings

13.27 As for archaeological remains, the magnitude of impact in relation to historic buildings is assessed without regard to the value of the asset, so the total destruction of an insignificant building has the same degree of impact magnitude as the total loss of a high value building. In terms of the judgement of the magnitude of impact, this is based on the principle that preservation of the asset and its setting is preferred, and that total physical loss of the asset and/or total change to its setting is the least preferred.

13.28 Impacts on the setting of historic buildings may include vibration, noise and lighting issues as well as visual impacts, and may be reversible. Additional methodology regarding the assessment of effects on settings is provided below.

13.29 Impact scales are defined thus:

- **Major:** Change to key historic building elements, such that the asset is totally altered; total change to the setting
- **Moderate:** Change to many key historic building elements, such that the asset is significantly modified; changes to the setting of an historic building such that it is significantly modified
- **Minor:** Changes to key historic building elements such that the asset is slightly different; change to setting of an historic building such that it is noticeably changed
- **Negligible:** Slight changes to historic buildings elements or setting that hardly affect it
- **No change:** No change to fabric or setting.

#### **Assessment of Impact Magnitude – Historic Landscapes**

13.30 Historic landscapes cannot be destroyed or damaged but impacts on them can change their character. Impacts should be assessed using evaluated historic landscape character units, not the elements/parcels/components that contribute towards the character (see above). There may be impacts on the setting of identified units, especially with regard to designated historic landscapes.

13.31 Additional methodology regarding the assessment of effects on settings is provided below.

13.32 Impact scales are defined thus:

- **Major:** Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
- **Moderate:** Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
- **Minor:** Changes to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character.
- **Negligible:** Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or

sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.

- **No change:** No change to elements, parcels or components; no visual or audible changes; no changes arising from amenity or community factors.

### Assessment of Significance of Effects

13.33 The significance of an effect is a combination of the value of the heritage asset and the magnitude of impact on that asset. Effects can be adverse or beneficial. Beneficial effects are those that mitigate existing impacts and help to restore or enhance heritage assets, therefore allowing for greater understanding and appreciation. In line with Guidance Note 208/07 the following matrix is used as a basis for assessing significance, together with professional judgement, for all three sub-topics.

**Table 13.4: Cultural Heritage: Significance of Effects Matrix**

VALUE / SENSITIVITY	MAGNITUDE OF IMPACT				
	No Change	Negligible	Minor	Moderate	Major
<b>Very High</b>	Neutral	Minor	Moderate/ Major	Major or Substantial	Substantial
<b>High</b>	Neutral	Minor	Moderate/ Minor	Moderate/ Major	Major/ Substantial
<b>Medium</b>	Neutral	Neutral/ Minor	Minor	Moderate	Moderate/ Major
<b>Low</b>	Neutral	Neutral/ Minor	Neutral/ Minor	Minor	Minor/ Moderate
<b>Negligible</b>	Neutral	Neutral	Neutral/ Minor	Neutral/ Minor	Minor

13.34 Where the matrix provides a split in the level of effects, e.g. Moderate/Minor, the assessor will exercise professional judgement in determining which of the levels is more appropriate.

13.35 Moderate or greater effects are generally considered to be significant in EIA terms for this topic area.

### Settings

13.36 The issues surrounding the identification of the 'settings' of heritage assets, and the nature and magnitude of impacts and consequently effects on such 'settings', have been subject to much recent debate within the historic environment profession. Legislation and guidance makes reference to the desirability of preserving or not adversely affecting 'settings', but there is no agreed definition of what this term actually means.

13.37 The most recent definition produced by English Heritage is in a document entitled Conservation Principles - Policies and Guidance for the Sustainable Management of the Historic Environment (April 2008), which states that:

- i) *'Setting' is an established concept that relates to the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape. Definition of the setting of a significant place will normally be guided by the extent to which material change within it could affect (enhance or diminish) the place's significance.*
- ii) *'Context' embraces any relationship between a place and other places. It can be, for example, cultural, intellectual, spatial or functional, so any one place can have a multi-layered context. The range of contextual relationships of a place will normally emerge from an understanding of its origins and evolution. Understanding context is particularly relevant to assessing whether a place has greater values for being part of a larger entity, or sharing characteristics with other places.*

13.38 A consultation paper on a new *Planning Policy Statement 15: Planning for the Historic Environment* was published by the Department for Culture, Media and Sport (DCMS) in July 2009. This document has the following different definition of setting:

- i) *The area surrounding a heritage asset within which development may affect the significance of that asset. The significance of an asset, or appreciation of that significance, may be enhanced or diminished by elements of the existing setting.*

13.39 Amongst the key points to emerge from these definitions and from recent debate within the historic environment profession is that 'setting' relates primarily to those aspects within the surroundings of a heritage asset that contribute towards the significance of the asset, along with people's ability to appreciate that significance.

#### *Methodology for the Assessment of Effects on Settings*

13.40 A methodology for the assessment of effects on the settings of heritage assets has been developed by RPS through use and application within a number of EIAs and planning submissions in recent years. It is based on existing guidance, consultation within the historic environment profession and published analysis of the concept of 'setting'. The methodology is flexible and responsive to the developing guidance that underpins this concept.

13.41 The methodology essentially seeks to identify those elements that comprise the setting of a heritage asset (i.e. those aspects within the surroundings of the asset that contribute to or detract from the significance of the asset, and/or people's ability to appreciate that significance). The change to any of these elements is then considered, leading to an overall assessment of the magnitude of impact of the project on the setting of the asset. This magnitude of impact is then examined against the sensitivity (to change) of the setting in order to produce an assessment of the actual impact of the project on the setting of the asset. The overall effect is then determined by combining the impact on the setting of the asset with the value of the asset using professional judgement and the main significance of effects matrix presented in Table 13.4 above.

- 13.42 Although assessments of effects on the settings of heritage assets can involve non-visual issues such as noise, it is more usually the visual aspects of a development that form the major part of the assessment.
- 13.43 The existence of direct lines of sight between the heritage asset and the proposed development is an important factor in judging the visual impact of the development. However it is possible for a setting to be affected even when such a relationship does not exist. For example, views towards a listed building from a frequently visited location, such as a park or a public footpath, may be affected by the presence of a larger development, even if the development is not directly visible from the building itself.
- 13.44 A key tool in making these assessments is the computer-generated ZVI (Zone of Visual Influence), which models those areas in the surrounding landscape from where there will be direct lines of sight, however slight, to the proposed development.
- 13.45 However, as described above, there may be effects on the settings of heritage assets even when there is no direct sight line between the asset and the proposed development. For this reason it can be important to consider views towards significant heritage assets that are actually outside the ZVI.
- 13.46 An assessment of visual impacts on the heritage assets and their settings needs to take into account a wide variety of factors including the location of the asset within the physical landscape, its relationship with contemporary and non-contemporary features within that landscape and the location, size and character of the proposed development in relation to these factors.
- 13.47 The assessment needs to take into account and balance the impact of these various considerations on the basis of informed professional judgment. Assessment of visual impacts is undertaken in accordance with the procedures expressed in the *Guidelines for Landscape and Visual Impact Assessment* (The Landscape Institute with the Institute of Environmental Management and Assessment, Second Edition, 2002). If there is the potential for effects on the setting of heritage assets due to noise or other impacts than these would be considered using appropriate procedures.

**Table 13.5: Magnitude of Change to the Setting of Heritage Assets**

<b>Impact Magnitude</b>	<b>Comment</b>
<b>None</b>	The proposals would have no appreciable impacts, either positive or negative, on the setting of a heritage asset
<b>Low</b>	The proposals would slightly alter the setting of a heritage asset
<b>Moderate</b>	The proposals would significantly alter the setting of a heritage asset
<b>High</b>	The proposals would severely alter the setting of a heritage asset

13.48 Appraisal of the sensitivity to change of the setting of a heritage asset incorporates a number of factors that together contribute towards considerations of how certain aspects within the surroundings of a heritage asset contribute towards the significance of that asset, and / or people's ability to appreciate that significance.

13.49 The levels of sensitivity (to change) of the setting of a heritage asset are identified thus:

- **Reduced:** The significance of an asset is not likely to be affected by development within its surroundings - there are already several detracting elements within the setting and few contributory elements.
- **Restricted:** The significance of an asset may be slightly diminished by development within its surroundings - there are some detracting elements within the setting and some contributory elements.
- **Notable:** The significance of an asset may be substantially diminished by development within its surroundings - there are several contributory elements within the setting and few detracting elements.
- **Elevated:** The significance of an asset may be wholly diminished by development within its surroundings - there are a number of contributory elements within the setting and almost no detracting elements.

13.50 In the table below, the overall effect of the project on the settings of significant cultural heritage resources is evaluated by combining the assessment of the magnitude of change to the setting of the heritage asset (as indicated in Table 13.5 above) with the identified sensitivity (to change) of that setting.

13.51 This is not designed as an absolute predictive tool, but to make the professional judgements contained within this report as transparent as possible. Where the table gives two possible outcomes, e.g. Minor/Moderate, the allocation of one of these outcomes is made by the assessor on the basis of the individual circumstances of the asset, the nature of the impact and the sensitivity (to change) of the setting, using professional judgement and expertise. For example, a moderate magnitude of change to a setting with a notable sensitivity (to change) would result in a Minor or Moderate effect on the setting of the asset, and the assessor would decide which one of these is the most appropriate. The overall effect would be dependent on the value of the asset.

**Table 13.6: Overall Effect on Settings of Heritage Assets**

Sensitivity (to change) of setting	Magnitude of change to the setting of heritage asset				
	None	Low	Moderate	High	Very High
<b>Reduced</b>	No change	Neutral	Neutral	Minor	Moderate
<b>Restricted</b>	No change	Neutral / Minor	Neutral / Minor	Minor / Moderate	Moderate / Major

Sensitivity (to change) of setting	Magnitude of change to the setting of heritage asset				
	None	Low	Moderate	High	Very High
<b>Notable</b>	No change	Neutral / Minor	Minor / Moderate	Moderate	Major
<b>Elevated</b>	No change	Minor	Moderate	Moderate / Major	Major

13.52 The effects described in the table above can be adverse or beneficial.

### Baseline Conditions

13.53 The locations of identified heritage assets discussed in this section are shown on Figure 13.1.

### Planning and Legislative Context

13.54 The relevant planning and legislative context is set out in Appendix 13.1.

### Designated Sites and Features

13.55 The project site is not located within a World Heritage Site or within a site included on the *Tentative List of Future Nominations for World Heritage Sites* that was issued by the Secretary of State for Culture, Media and Sport in 1999.

13.56 There are no Scheduled Monuments within or adjacent to the project site. The closest Scheduled Monuments are the Lion Salt Works and remains of part of the Alliance Salt Works at Marston (1.8 km to the north-west) and the Halford Hall moated site (2.8 km to the north-east).

13.57 There are no listed buildings within or adjacent to the proposal site. Within the defined study area there is only one listed building: a Grade II listed cast-iron milepost on the towpath of the Trent and Mersey Canal directly adjacent to the proposed relocated coke store. This is a canal milepost - it records the distances along the canal to Shardlow (82 miles) and Preston Brook (7 miles) – and is inscribed with the date 1819.

13.58 The Trent and Mersey Canal passes through the main part of the project site (outside of the red line boundary) and along the eastern edge of the proposed relocated coke store. The canal was constructed in the second half of the 18<sup>th</sup> century subsequent to approval via a parliamentary act passed in 1766. The initial work was carried out under the direction of the experienced canal-builder James Brindley; the canal was opened in 1777 and extended for a distance of approximately 150 km from Derwent Mouth on the River Trent to Preston Brook on the Bridgewater Canal.

13.59 The whole of the route of the Trent and Mersey Canal has been designated as a Conservation Area, the boundary of which is drawn tightly along the canal and includes the towpath. Where appropriate, the boundary widens out to include buildings and areas of direct historic association with the canal, such as wharfs and docks. There are no such extended

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areas in the immediate vicinity of the project site, but at Broken Cross to the south and at Wincham Wharf to the north are wharves that are included as extensions to the otherwise linear designation.

- 13.60 The next nearest Conservation Area is at Marston, approximately 1.5 km to the north-west of the project site.
- 13.61 The defined study area contains seven buildings that have been designated by the former Vale Royal Borough Council as 'Locally Important Buildings'. None of these are close enough to the site to be affected in any way by the project.

### **Non-Designated Sites and Features**

- 13.62 There are no known archaeological sites or find-spots of artefacts of prehistoric date within the defined study area.
- 13.63 The projected course of a Roman road known as King Street passes through the western part of the project site on a north-north-west/south-south-east alignment. The location and alignment can be more firmly identified to the south along the route of the present A530 road to Middlewich (the Roman town of *Salinae*). Only 400m to the north of the main part of the project site, King Street crosses another Roman road (Watling Street) and continues northwards towards a significant Romano-British settlement at Wilderspool near Warrington.
- 13.64 The Roman road known as Watling Street passes 150m to the north of the proposed relocated coke store on a north-east/south-west alignment, represented by the present A559 Manchester Road. During the Roman period Northwich (*Condate*) was a significant site for salt production (from brine) and Watling Street linked Northwich with the important towns of Chester (*Deva*) and Manchester (*Mamucium*).
- 13.65 Any intersection of Roman roads should be considered as a potential location for settlements and cemeteries are often located adjacent to roads on the approach to towns. However, there is no record of the discovery of any features or artefacts of Roman date in the vicinity of the intersection of Watling Street and King Street, despite considerable development activity taking place here.
- 13.66 Similarly, the presence of King Street passing through the western side of the project site brings with it the enhanced potential for roadside settlement of that period, but nothing has been found in the vicinity of the Roman road despite the extensive industrial development that has occurred here.
- 13.67 There are no known archaeological sites or find-spots of artefacts of early medieval date (AD 44 – 1066) within the defined study area.
- 13.68 There are no known archaeological sites or find-spots of artefacts of medieval date (AD 1067 - 1499) within the defined study area. Two sites of this period are recorded within the defined study area; at Broken Cross some 900m to the south of the proposal site is the alleged site of

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a boundary cross (HER 2122/1) at the Norman sanctuary of Rood or Rudheath, whilst there is a possible medieval road crossing over the Wade Brook approximate location within the existing Brunner Mond site or at Lostock Gralam Bridge which is c. 600m to the east of the project site (HER 728/1).

- 13.69 No settlement is recorded at Lostock in the survey that resulted in the Domesday Book, but there is a record of a township of that name in a deposition of 1386. That document reports that Lostock was a possession of an individual named 'Hame' who had died in the battle of Nantwich. The vill was then divided into two parts; Nether Lostock and Over Lostock. The former was given to Hugh de Runchamp and it then passed to his son, Gralam.
- 13.70 There were several settlement foci in the area during the medieval period, including Northwich to the west of the project site, Broken Cross to the south and Lostock Green to the east.
- 13.71 Early available maps of the area do not provide much detail regarding land use. Greenwood's map of 1819 shows two rectangular buildings within the project site at NGR 368300 374100. The tithe map for Lostock Gralam (c. 1845) confirms the presence of those two buildings and they are shown clearly on the Ordnance Survey 25" map of 1877-1880 (Fig 13.2) where they appear to represent a small farmstead for which no name is indicated.
- 13.72 The tithe map also shows a larger group of buildings to the north of the Wade Brook and this is marked on the Ordnance Survey mapping as Overstreet Farm. This farm was first documented in 1631 and at one time was also known as Platts Hall. The principal timber-framed building at this site was constructed in 1655.
- 13.73 The Chester to Manchester railway was opened in 1875 and the embankment of this railway forms the northern edge of the proposed relocated coke store. In conjunction with the canal, the railway provided a key element of transport infrastructure for the imminent industrial development in the area.
- 13.74 The Ordnance Survey 6" map of 1882 (Fig 13.3) shows the general area immediately prior to the establishment of the industrial development. This map illustrates the predominantly rural nature of the landscape, including the presence of large regular fields that represent the effects of Parliamentary enclosure. Overstreet Farm is clearly visible, along with Limekiln Farm to the east of Griffiths Road. The name of the latter farm, along with the Bone Mill shown adjacent to the canal at Bonners Green, indicates the nature of the existing industrial activity. On the west side of the canal at Wincham Wharf is another mill, this one for the processing of corn as well as bone. The projected line of the Roman road known as King Street is indicated on the map.
- 13.75 Although salt had been extracted through brine processing in Northwich during the Roman period, the presence of rock salt was 'rediscovered' in the later 17<sup>th</sup> century. This had resulted in extensive mining leading to subsidence in several areas, possibly including land in

the general vicinity of Lostock Gralam where 'rock salt pits' are indicated on Cowley's 1744 map of Cheshire.

- 13.76 The subsequent Ordnance Survey 6" map was published in 1899 (Fig 13.4) shows the considerable industrial development that had taken place in the last two decades of the 19<sup>th</sup> century. The expansion of the salt extraction and processing was clearly a significant part of this development, although there were other extraction-based industries such as a Brick Works to the east of Griffiths Road and a Brick and Tile Works to the north of the railway.
- 13.77 To the south of the railway the 1899 map indicates the extensive presence of the Lostock Works. This had been established in 1891 by Bowman Thompson & Co. Ltd. and was split into three main components; the Lostock Alkali Works (for the manufacture of soda ash using ammonia soda technology and depicted on the 1899 map as the Lostock Works), the Lostock Salt Works (west of the proposal site), and the Lostock Bleach Works (constructed directly over the projected line of King Street). The sodium chloride for all of these works was to have come from three 'salt shafts' sunk on the western side of the site (clearly marked on the 1899 map). However, salt reserves here were found to be limited and the salt was later provided by pipeline from other nearby sources.
- 13.78 The construction of the Lostock Alkali Works had required the removal of the un-named group of buildings to the south of the Wade Brook, although Overstreet Farm was still present. The more detailed Ordnance Survey 25" map of 1898 (Fig. 13.5) shows several small areas of land enclosed by irregular earth bunds to the south-west of the Alkali Works; these were probably used for the settling of waste, particularly calcium carbonate held in solution. The land to the south of the Alkali Works, currently occupied by the disused power station, appears to be slightly raised and this represents the dumping of 'limewaste' from the Alkali Works.
- 13.79 The Alkali Works was linked to the railway by dedicated sidings and these extended through to a wharf on the canal indicating the importance of this waterway as a transport route in addition to the railway. To the north of the Alkali Works a reservoir had been constructed on the Wade Brook.
- 13.80 John Brunner and Ludvig Mond had formed the Brunner Mond industrial chemical company in 1874 at a site in Winnington, approximately 3.5 km to the west of the project site. The company manufactured soda ash (sodium carbonate) using salt and limestone. Soda ash has a range of industrial uses including glass production, soaps and detergents, paper manufacture and baking powder. Bowman Thompson & Co. Ltd. was sold in 1900 to Brunner Mond; the Lostock Salt Works and the Bleach Works continued to operate, but the ammonia soda operation carried out at the Alkali Works was immediately stopped and was not re-commissioned until 1907.
- 13.81 The revised Ordnance Survey 6" map published in 1910-1911 (Fig. 13.6) shows the recent expansion of industrial development following the re-opening of the Alkali Works in 1907.

Additional buildings have been constructed to the south of the main works (and partially within the current proposal site) - Brunner Mond records indicate the completion of a new boiler plant in 1908 and this is likely to be one of the additional buildings shown on the 1910-1911 map. The area of settling tanks has been extended as far as the neighbouring Lostock Salt Works. Overstreet Farm has survived but is surrounded by industrial development.

- 13.82 It is known that during the First World War a new works was constructed for the manufacture of ammonium nitrate, barium nitrate and calcium nitrate, but no maps are available to indicate the detailed layout for these activities. In 1926 Brunner Mond was amalgamated with three other industrial chemical companies to form the Imperial Chemical Industries plc (ICI).
- 13.83 No detail of the industrial sites in the vicinity is provided on the next revision of the Ordnance Survey 6" map (published in 1938-1947) because of the Second World War. The Lostock Salt Works had closed at some time during the period 1910 -1930 and in 1938-39 a new plant was constructed in that area for the Ministry of Supply (i.e. for the war effort). This was known as the Wade Works and it manufactured chlorine, mono-chloro-benzene, carbon tetrachloride, sodium hypochlorite and tropical bleach.
- 13.84 The next map to show the area in any detail was published in 1954 (Fig 13.7). This indicates the Lostock Alkali Works as 'Chemical Works'; it has expanded further to the south (into the elevated area formerly used for the dumping of 'limewaste'). Very large settling tanks have been established to the south-west and to the south-east on the opposite side of Griffiths Road.
- 13.85 The now-disused power station present within the main part of the project site is first indicated on the 1963-1964 Ordnance Survey 1:1250 map (Fig 13.8). This map provides additional details regarding the Brunner Mond works, including the network of railway lines that extended along the edge of the canal and the settling tanks.
- 13.86 An Ordnance Survey 1:10,000 map of 1976-77 (Fig. 13.9) shows that the settling tanks to the east of Griffiths Road have extended further to the south-east. A new access road now leads off this road into the Brunner Mond site, replacing a footbridge over the canal. There are few substantive changes between this map and the 1999 Ordnance Survey map (Fig. 13.10), although Limekiln Farm is not present on the later map and had apparently been demolished during the period 1977-1993. Overstreet Farm (Platts Hall) survived within the Brunner Mond site until 1998, when it was subject to detailed recording and was then dismantled. The west wing was re-erected at Bostock Hall, to the south of Northwich.
- 13.87 A programme of Historic Landscape Characterisation has been undertaken for the county of Cheshire. This was carried out by the Natural and Historic Environment Team of Cheshire County Council. It shows that the project site is wholly located within an area of 20<sup>th</sup> century industrial development (Fig. 13.11).

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### Summary of Baseline Conditions

- 13.88 A canal-based Conservation Area and the projected line of a Roman road (King Street) pass through the project site and a Grade II listed structure is directly adjacent to the site. A study of historic mapping indicates that a small farmstead (of no known name) was formerly located within the project site.

### Construction Assessment

#### SEP

- 13.89 The effect of the construction of the proposed SEP on any buried archaeological remains, including those associated with the Roman road (King Street) and a former farmstead, would be neutral. Extensive industrial development during the late 19<sup>th</sup> and 20<sup>th</sup> centuries is likely to have resulted in the loss of any possible traces of either the Roman road and associated activities or the former farmstead.
- 13.90 The effect of the construction of the proposed SEP on the setting of any designated heritage asset would be neutral. The setting of the Lion Salt Works (the closest Scheduled Monument to the project site) is one dominated by industrial processes. To the north of the Lion Salt Works are the open meres known as Ashton's Flash and Neumann's Flash - although recently established as a local recreation facility for nature conservation, these actually represent part of the industrial legacy of the area as they were originally formed as a result of subsidence due to the extraction of brine from the underlying geological formations. To the south of the Lion Salt Works, including in the direction of the proposed SEP, the setting includes a number of large-scale built industrial facilities, one of which is the existing Brunner Mond site. The effect of the construction of the SEP on the setting of the Lion Salt Works would be neutral.
- 13.91 The Trent and Mersey Canal Conservation Area passes through the project site (outside of the red line boundary) but there would be no change to the setting of the Conservation Area; the current setting of the canal in the vicinity of the project site is dominated by modern industry and the construction of the project would not alter this setting. A Grade II listed canal milepost is directly adjacent to the proposed relocated coke store; the current setting of the milepost is predominantly based on the canal and the industrial development through which it passes and again the construction of the project would not significantly alter the setting of this milepost.
- 13.92 The effect of the construction of the proposed SEP on the overall historic landscape would be neutral. The Historic Landscape Characterisation shows that the project site is wholly located within an area of 20<sup>th</sup> century industrial development and the construction of the proposed SEP would continue this industrial development into the 21<sup>st</sup> century.

**Grid Connection**

- 13.93 The proposed route of the grid connection passes alongside existing highways and the construction of this connection would have no effects on any designated or undesignated heritage asset.

**Operational Assessment****SEP**

- 13.94 The effect of the operation of the SEP on the setting of any designated heritage asset would be neutral. The Trent and Mersey Canal Conservation Area passes adjacent to the main SEP site but there would be no change to the setting of the Conservation Area; the current setting of the canal in the vicinity of the proposal site is dominated by modern industry and the operation of the project would not alter this setting. A Grade II listed canal milepost is directly adjacent to the proposed relocated coke store; the current setting of the milepost is predominantly based on the canal and the industrial development through which it passes and again the operation of the proposed development would not significantly alter the setting of this milepost.
- 13.95 The effect of the operation of the proposed SEP on the overall historic landscape would be neutral. The Historic Landscape Characterisation shows that the project site is wholly located within an area of 20<sup>th</sup> century industrial development and the operation of the proposed SEP would continue this industrial development into the 21<sup>st</sup> century.

**Grid Connection**

- 13.96 The proposed route of the grid connection passes alongside existing highways and the operation of this connection would have no effects on any designated or undesignated heritage asset.

**Decommissioning**

- 13.97 The effect of the future decommissioning of the SEP on any buried archaeological remains, including those associated with the Roman road (King Street) and a former farmstead, would be neutral.
- 13.98 The effect of the decommissioning of the proposed SEP on the setting of any designated heritage asset would be neutral.
- 13.99 The effect of the decommissioning of the proposed SEP on the overall historic landscape would be neutral.

**Recommendations for Further Mitigation**

- 13.100 No further mitigation is proposed with regard to archaeology and cultural heritage.

### **Cumulative Effects**

13.101 No other developments (either already consented or where planning permission is being sought) have been identified that would result in cumulative effects on any heritage asset.

### **Summary**

13.102 An assessment has been undertaken of the likely effects of the project on archaeological remains and other cultural heritage receptors. This has not found any significant effects on any heritage receptor.