Cinderford Northern Quarter

Heritage and Archaeological Assessment

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Archaeology Service

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### Site details

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Contents
1 Introduction .......................................................................................................................... 6
1.1 The assessment .............................................................................................................. 6
1.2 Standards ..................................................................................................................... 6
1.3 Purpose and aims ......................................................................................................... 6
1.4 Sources ........................................................................................................................ 6
1.5 Field visits .................................................................................................................... 7
2 Location and description of the study area ................................................................. 9
2.1 Location ....................................................................................................................... 9
2.2 Landuse ....................................................................................................................... 9
2.3 Geology ....................................................................................................................... 10
2.4 Topography ............................................................................................................... 11
3 Archaeological and historical background to the study area ...................................... 13
3.1 General background to the Forest of Dean ................................................................. 13
3.2 Archaeological and historic background to the study area ....................................... 16
3.3 Cartographical evidence for the study area ............................................................... 18
3.4 Summary of previous archaeological work in the area ........................................... 19
4 Identified sites of very low archaeological potential ................................................. 21
4.1 Areas of open-cast coal and clay extraction ............................................................... 21
5 Areas with significant surviving structures and potential for below ground remains ................................................................................................................................. 27
5.1 Northern United Colliery ............................................................................................ 27
5.2 The Steam Mills area ................................................................................................. 30
5.3 New Town .................................................................................................................. 32
5.4 Broadmoor Chemical Works ...................................................................................... 33
6 Coal mining sites ........................................................................................................... 37
6.1 Later post-medieval coal mining sites ...................................................................... 37
6.2 Surface remains of shallow coal workings likely to be of earlier date ...................... 40
7 Other archaeological sites ............................................................................................. 45
7.1 Hawkwell Brick and Tinplate Works, and associated spoil heap .............................. 45
7.2 Tramroads/railway lines ............................................................................................. 46
7.3 Old Engine Brook ...................................................................................................... 50
7.4 Forest enclosure boundary ......................................................................................... 50
7.5 Undated stones .......................................................................................................... 52
7.6 Brick structure .......................................................................................................... 52
7.7 Dam Pool .................................................................................................................... 53
7.8 Other sites of lesser significance ................................................................................ 54
8 References ....................................................................................................................... 57
9 Acknowledgements ........................................................................................................ 62

Appendix A Northern united Colliery: Assessment of Significance, by David Cranstone ................................................................................................................................. 63
Appendix B Selected other sites in study area, by David Cranstone ........................................ 75
Figures
Figure 1: Cinderford Northern Quarter: General location of study area ................. 10
Figure 2: Area of open-cast coal and clay extraction .................................................. 24
Figure 3: Areas of significant surviving structures ....................................................... 27
Figure 4: Northern United Colliery from the 1961 Ordnance Survey map ............... 28
Figure 5: 19th and early 20th century coal mining sites ............................................. 37
Figure 6: Identified surface remains of shallow coal workings ............................... 42
Figure 7: Hawkwell Tinplate Works and associated spoil heap .............................. 46
Figure 8: All recorded tramroads and railways within the study area ...................... 48
Figure 9: Surviving tramroad and railway remains within the study area ............ 49
Figure 10: Miscellaneous sites with the study area ................................................... 51
Photographs

Photograph 1: Steam Mills, surviving mill structure ................................................................. 30
Photograph 2: Cottages to the North of Steam Mills ............................................................... 31
Photograph 3: Haywood Engine Works ...................................................................................... 31
Photograph 4: New Town. The central street with 19th century cottages to each side .......... 33
Photograph 5: Surviving remains of stables and smiths shop at Broadmoor Chemical Works .. 34
Photograph 6: Brick structure at NGR 363905 215631 .......................................................... 53
Summary

The following is a heritage and archaeological assessment of Cinderford Northern Quarter, to the northwest of Steam Mills, Cinderford, Gloucestershire. The work has been commissioned by Wendy Jackson of the Forest of Dean District Council to inform regeneration proposals for the area.

This assesses the character of archaeological or historical remains identified within the study area, in the form of standing structure, earthworks or buried archaeological remains, and their significance against the background of similar sites or features in the surrounding area and nationally.

An industrial archaeology specialist, David Cranstone, was commissioned to assess the importance of the remains of Northern United Colliery in the context of national policies for the conservation of coal industry related sites and structures. His report forms Appendix A. David Cranstone also offered advice on the significance of a number of other remains identified within the study area (see Appendix B).

1 Introduction

1.1 The assessment

This assessment was undertaken by Gloucestershire County Council Archaeology Service to investigate the heritage and archaeology of the area of Cinderford Northern Quarter, to the northwest of Steam Mills, Cinderford, Gloucestershire (Glos HER 33814). The work was commissioned by Wendy Jackson of the Forest of Dean District Council and was carried out by Jon Hoyle (Gloucestershire County Council, Archaeology Service). A specialist report assessing the importance of the Northern United Colliery against the background of similar structures in the surrounding area and nationally was carried out by David Cranstone, Cranstone Consultants and is included as Appendix A. In addition David Cranstone also commented on the significance of a number of other industrial sites within the study area (Appendix B). The project has been undertaken with reference to a task list and work programme dated 31st July 2009 and agreed with Wendy Jackson. In accordance with this, a summary of all the results of the research and recommendations was submitted to Leo Hammond of Alan Baxter and Associates at key points of the project.

1.2 Standards

The assessment was carried out in accordance with Standard and Guidance for Archaeological Desk-based Assessments produced by the Institute for Archaeologists (IfA 2008) which states that “A Desk-based Assessment will determine, as far as is reasonably possible from existing records, the nature of the archaeological resource within a specified area using appropriate methods of study which satisfy the stated aims of the project, and which comply with the Codes of Practice of the Institute for Archaeologists.”

1.3 Purpose and aims

The purpose of the assessment was to identify archaeologically or historically significant deposits, earthworks, structures or other remains within the specified area and make an assessment of their character, survival and significance to inform decisions about future development on the site.

1.4 Sources

A detailed survey of the historical and archaeological background of the study area has been carried out in addition to a search of selected map-based and photographic data. Sources consulted include:
Published sources of historical or archaeological value to the study area. This includes the Victoria County History, and published works on the industrial history of the Forest of Dean.

Unpublished research reports and archives held by relevant museums, local societies, and archaeological agencies concerning recent archaeological excavations or surveys.

Unpublished research reports and archives held by Gloucestershire County Council Archaeology Service as part of the Forest of Dean Archaeological Survey. This will include data from the Forest of Dean Lidar project.

Ordnance Survey maps of the site and its environs. These include the 1st 2nd and 3rd series maps (c.1880 – c.1925) and also more recent editions where these are considered to be appropriate.

Other early maps of the area. This includes rectified copies of 19th maps of mineral workings in the Forest of Dean, and selected original maps in the collection of Gloucestershire County Record Office.

Geological maps or digital geological information held by Gloucestershire County council.

Appropriate archaeological and historical journals and books.

Aerial photographs held by Gloucestershire County Council Archaeology Service, and the results of English Heritage’s Forest of Dean National Mapping Programme (aerial photograph transcription).

1.5 Field visits

In addition to the documentary research, site visits were carried out to validate features or structures identified during the documentary research and assess their current condition, and make an assessment of their vulnerability to any development. The following three site visits were undertaken:

• 17th August 2009 - Jon Hoyle (Gloucestershire County Council, Archaeology Service) and David Cranstone visited Northern United and selected sites within the search area.
• 19th August 2009 – Jon Hoyle (Gloucestershire County Council, Archaeology Service) visited remaining sites in the search area.
• 28th August 2009 – Nick Witchell (Gloucestershire County Council, Archaeology Service) visited the office building at Northern United Colliery which was not entered in the earlier site visit on account of its status as a bat roost. Nick Witchell was accompanied by John Knight of Environmental Resources Management who has the necessary licences to allow entry and photography.
2 Location and description of the study area

2.1 Location

The Cinderford Northern Quarter covers an area of c.925m² centred at National Grid Reference SO 64291552 c.1.5km to the northwest of Cinderford (Figure 1). With the exception of a small area (see below) the northern edge is bounded by the A 4136, and the northeastern edge is bounded by the A 4151. Parts of its southern, eastern and western boundaries are formed by minor roads, tracks or property boundaries, although other sections are less clearly defined on the ground. With the exception of a small area to the north of the A4136 which is in Drybrook Parish, the whole of the study area is within the Parish of Cinderford.

2.2 Landuse

The area includes extensive areas of woodland which is owned and managed by the Forestry Commission in addition to areas of open ground, some of which is currently managed for recreational use, including a large lake and a section of Cinderford Linear Park in the southern part of the area. This area includes a number of working industrial sites, including the Coleford Brick and Tile works, an auto spares/scrap yard and a waste disposal firm based in part of the Northern United Colliery complex, along with two domestic properties.

The eastern part of the study area includes housing and industrial units in the settlements of Newtown and Steam Mills on the northern fringes of the town of Cinderford.
2.3 Geology

The study area is within the northern part of the Forest of Dean coalfield with a solid geology of sandstones of the Supra Pennant Group of the Upper Carboniferous Series (BGS 1958). A number of coal seams and clays within the Pennant Sandstone outcrop in this area and deeper coal seams, such as the Coleford High Delf are found below the Supra Pennant Sandstone (see Appendix A for more detailed discussion of coal seams).

The southwestern part of the study area overlies an area of alluvium within the valley of the Cinderford Brook (BGS 2008).
2.4 Topography

Topographically the study area forms a roughly triangular area of relatively level ground (although much of the actual topography has been modified by recent land reclamation, see 4.1 below) within the wide shallow valley at the head of the Cinderford Brook at a height of between c.155 and 165 m AOD. The eastern side of the study area is within the valley, but its northern and southwestern sides are defined by the edges of the higher ground of Ruardean Walk to the north, which rises to c.195m AOD, and Birch Wood to the south which rises to c.195m AOD.
3 Archaeological and historical background to the study area

3.1 General background to the Forest of Dean

3.1.1 Settlement

Very little is known about prehistoric settlement patterns and landuse within the Forest of Dean.

Caves on the western side of the Wye Gorge in Herefordshire (just to the west of the study area) are known to have been inhabited from the earlier upper palaeolithic period (Darvill 1987), and finds from that period have also been found within the Forest of Dean itself (Walters 1989). Isolated finds from the mesolithic to the iron age also indicate that activity did take place during those periods (Walters 1992), although, with the exception of a number of iron age hillforts on the periphery of the higher ground (Saville 1984, Fig 1), and a few sites identified by artefacts (Walters 1992), there is little direct evidence of either patterns of settlement or any other activity during the prehistoric period. A notable exception to this general rule are the extensive prehistoric earthworks (probably dating to the late Bronze Age) which have recently been identified within woodland in the vicinity of Welshbury hillfort in the eastern part of the Forest of Dean (McOmish & Smith 1996).

The evidence for Romano-British settlement within the Forest of Dean tends to be limited to isolated villa or other “high status” buildings (Walters 1992, Fig 57). It has been suggested that the Forest of Dean was an imperial estate, dedicated to the production of iron ore for much of the Roman period (Sindrey 1990; Walters 1992), although this theory is based largely on a lack of evidence for other types of occupation or activity.

Throughout the medieval period there was little occupation within the Statutory Forest (an area approximately correlating with the large block of woodland between Cinderford and Coleford) with settlements growing up around its edges, often within relatively sheltered valleys. The industrial development of the post-medieval period led to rapid population growth, particularly in the 19th century. Many of the existing settlements expanded at this time, and some new settlements were founded. A characteristic form of settlement in the area remains one of sprawling hamlets of haphazardly positioned cottages at the edge of, and encroaching into, the Statutory Forest (Herbert 1996b, 293).

Outside the environs of the Statutory Forest the 19th population explosion had less impact on settlement patterns, and the economy of the area remained largely based on agriculture. Some of the towns in this area, however, particularly those with access to the River Severn, did develop into relatively important ports at this time, serving the distribution needs of the industries and settlements further inland.

3.1.2 Industrial exploitation of the area’s mineral resource

Since the later prehistoric period exploitation of the mineral and other natural resources of the Forest of Dean has been an important theme influencing settlement and other activities.

3.1.3 Iron ore

The Forest of Dean has long been recognised as an important source for iron ore derived principally from the iron ore-bearing Carboniferous Limestones along the western and eastern edges of the Statutory Forest. Iron ore extraction in the Forest of Dean may have begun in the later prehistoric period (Hart 1971; McWhirr 1981) using iron ore extracted from scowles, the irregular series of pits and hollows which follow the outcrops of Carboniferous Limestones around the edge of the Forest of Dean. Although these have traditionally been interpreted as the remains of open-cast iron ore extraction, recent research has suggested they are not entirely artificial but are essentially the surface expression of an iron ore filled cave system.
Although some iron ore may have been extracted from the surface of scowles, they may have acted as a conduit to subterranean deposits from an earlier period than has generally been recognised (Hoyle et al. 2007). The only real evidence for Iron Age iron ore extraction does not come from the scowles themselves, but from recent scientific analysis of the composition of datable iron artefacts or processing waste. Middle Iron Age currency bars (c.500-300 BC) excavated at Beckford in Worcestershire had been manufactured using iron smelted from low phosphorous ores, consistent with Iron Age and Romano-British smelting residues from the Forest of Dean or the Bristol Mendip region, suggesting that they had been manufactured in this area from local ores (Hedges and Salter 1979; Paynter 2006). Evidence that ore was exported in the late Iron Age (c.50 BC – AD 43) comes from iron slags excavated at Frocester in the vale of Gloucester, had a low uranium content, which may be consistent with the Carboniferous Limestone outcrops on the eastern side of the Forest of Dean (Thomas 2000 cited in Young pers. comm.). Iron ore continued to be exploited throughout the Roman period and the Forest of Dean is often cited one of the two major iron-producing areas during the 3rd and 4th centuries AD (Cleere and Crossley 1985; LUAU 1998, 9; Sim and Ridge 2002).

Although there are strong indications that the iron industry was an important feature of the Forest of Dean during the Roman period, evidence for its scale, or the way in which it was organised is limited, and needs to be re-examined. The most reliable data suggesting Roman mining in the Forest of Dean, comes from scientific analysis of dated artefacts, or smelting residues. Slags from 2nd and 3rd century contexts at Ariconium, and a fragment of iron ore identified as Limonite of a type common from the Carboniferous Limestones of either the Forest of Dean, or the Bristol/Mendip region has also been recovered from 4th century AD deposits at Frocester Roman Villa (Standing 2000). Slags from Roman deposits at both Usk and Carlæeon, to the west of the Forest of Dean, have a high uranium content, consistent with the chemical signature of ores from the western scowles (Thomas 2000 cited in Young pers. comm.). Throughout the medieval period, the extraction and processing of iron ore continued as one of the principal industries in the Forest of Dean (Cross 1982, 2) and regulations codified from the 13th or 14th centuries set out the legal limitations and rights of the “Free Miners”, who at that time were principally iron miners, in the Forest of Dean (Herbert 1996b, 291). Deeper mining was also practised from the medieval period, although it did not become the predominant form of extraction until the 17th century (Hart 1971).

Prior to the industrial revolution iron smelting tended to be carried out in small, temporary “bloomeries” fired by charcoal. 20 acres of woodland could be consumed in the production of a single ton of iron, and bloomeries would have been dismantled and re-located when surrounding fuel was exhausted (Jones 1996, 34). Consequently, bloomeries tended to be sited in woodland in preference to a proximity to the source of the iron ore.

Bloomeries were replaced by charcoal-fired blast furnaces from the late 16th century (Herbert 1996b, 291) which were in turn replaced by coke-fired furnaces from the latter part of the 18th century (Cross 1982, 12).

The iron industry in the Forest of Dean declined from the latter part of the 19th century due to a combination of Forest ore being unsuitable for the production of steel, and competition from cheaper imported ore. Despite a temporary revival during the First World War, most iron mines in Dean had closed by 1925, and the last commercial iron pit closed in 1945 (Cross 1982).

### 3.1.4 Coal

Other industrial activity based on the natural mineral resources of the Forest of Dean, may also have taken place from at least Roman times, and it has been suggested that coal was first exploited at this time (Bick 1980; Hart 1971). Coal was also extracted throughout the medieval and post-medieval periods, from both surface workings, drift mines and, later, from deep mines. The importance of coal increased during the post-medieval period as coke replaced charcoal as the principal fuel to fire blast furnaces (Cross 1982, 24). Like the iron ore industry, the importance of the Forest of Dean coal industry declined from the latter part of the 19th century and the last large commercial deep mine was closed in 1965 (Cross 1982, 24). Between the Second World War and 1985 some small areas of open-cast extraction followed...
surface outcrops of coal, although at the present time, extraction is limited to a small number of shallow drift mines run by a few surviving “Free Miners”, and producing no more than “a few thousand tonnes of coal a year”.

3.1.5 Stone

Stone quarrying has also been an important industry in the Forest of Dean “since earliest times” (Cross 1982, 26), although like many of the industries in the area, it is currently in decline when compared with its main period of expansion in the 18th and 19th centuries (Cross 1982, 26). Quarrying does, however, remain an important industry in some parts of the study area, especially where the lower Dolomite of the Carboniferous Limestone Series can be easily won at the edge of the Forest of Dean.

3.1.6 Transport

As major industries grew in the Forest of Dean during the post-medieval period, so too did a complex infrastructure of roads, railways and tramroads. This communications network, along with the availability of raw materials and a rapidly growing industrial workforce, attracted other industries, such as tinplate works, steel works and wire works, to the area. The rise and fall of these secondary industries closely mirrors that of the iron and coal industries.

3.1.7 Woodland in the Forest of Dean

The extent to which the area was wooded during the prehistoric and Romano-British periods is unknown, although large parts of the study area (not just the central extra-parochial “Forest”) were wooded, or within the woodland management cycle, throughout the medieval and post-medieval periods (Grundy 1936).

Pre-blast furnace iron ore smelting required considerable use of timber and large areas of woodland were felled to supply this industry (Jones 1996, 34). Although blast furnaces were introduced to the area from the late 16th century (Jones 1996, 25), these used charcoal until the 18th century, and consequently, large areas of the ancient woodland were destroyed in the production of charcoal for the iron industry. The re-establishment of woodland was encouraged from the 1660s, principally to ensure a supply of ship building timber. In the late 18th century maps of Gloucestershire (Taylor 1777) indicate extensive areas within the Statutory Forest which appear to be cleared of woodland. New enclosures were, however, created and planted in the early 19th century (Herbert 1996b) and by the 1830s woodland appears to have covered an area similar to that of today (OS 1891). As wooden war ships ceased to be constructed long before the plantations of the 19th century had time to mature, there was some uncertainty over the future of the Forest of Dean’s woodland. Timber products from the area proved to be a valuable resource during the First and Second World Wars, and in 1924 over 1000ha of woodland were transferred to the Forestry Commission. This is now managed primarily as commercial woodland, and consists of large areas of deciduous woodland, including areas of “Ancient Semi-natural Woodland” interspersed with tracts of coniferous plantation.

3.1.8 The Royal Forest

A large area of woodland and waste within the modern Forest of Dean was used as a Royal hunting reserve before the Norman conquest of 1066. This presumably formed the basis of the later Royal Forest, an area reserved as a royal hunting ground and subject to separate Forest Laws, which had been established in the Forest of Dean by the time of the Domesday Survey of c.1086 (Herbert 1996b; Grant 1991).

Between the 11th and 13th centuries, a large area of the Forest of Dean was “Forest” in the sense that it was subject to Forest Law (Hart 1945), although for most of the period since that time, the Forest of Dean proper has been limited to the Hundred of St Briavels which includes the central uncultivated area of woodland which comprised the Royal demesne and
approximates to the modern Statutory Forest. This area (c.9,308ha), the bounds of which were ratified in 1668, remained extra-parochial until the 1840s (Herbert 1996b). It has been either wooded, or within the woodland management cycle, throughout these periods and still comprises the core of the Forestry Commission landholdings in the area.

3.2 Archaeological and historic background to the study area

The following information regarding the general archaeological and historical background of the study area and its immediate surroundings (within c.1km) is taken from the Gloucestershire County Council Historic Environment Record (Glos HER).

3.2.1 Prehistoric

There is no direct evidence of either patterns of settlement or any other activity during the prehistoric period within the immediate vicinity of the study area. The only prehistoric artefact reported from within the study area was a Bronze Age palstave-type axe head (Glos HER 19916) which was found during clay digging works at Hawkwell Brickworks (now the Coleford Brick and Tile Works in 1974. The significance of this find is difficult to interpret, particularly in the Forest of Dean, where a general lack of evidence from this period is thought to be indicative of a combination of unfavourable conditions for the identification of archaeological sites combined with a lack of research, rather that a reflection of actual prehistoric activity (Hoyle 2008, 153). This isolated find can, therefore be interpreted as suggesting that evidence for more widespread prehistoric activity awaits discovery in the area.

3.2.2 Romano-British

There is no direct evidence of either patterns of settlement or any other activity during the Romano-British period within the immediate vicinity of the study area, although a Roman coin (Glos HER 6685) has been recovered from the Steam Mills area (although its precise provenance is unknown). Like the prehistoric period (see above), a general lack of evidence for Roman activity in this part of the Forest of Dean may not represent the actual distribution of Roman activity (Hoyle 2008, 162ff).

3.2.3 Medieval

The only evidence for medieval activity within the study area is a find of medieval occupation debris (Glos HER 9330) reported in the northwestern part of the study area. This was a redeposited assemblage of material thought to have originally been derived from Sherborne Abbey and does not indicate evidence for in situ medieval occupation. A number of the surface coal workings both within the study area (Glos HER 22702, 22705 and 33227) or in the immediate vicinity (Glos HER 27625) may be medieval in date but are thought likely to mainly date to the earlier post-medieval periods (see 6.2 below). Similarly evidence for charcoal burning (Glos HER 33231, 700m to the east and 400m to the south) and a single fragment of tap slag which suggests early iron smelting (Glos HER 28320), c.600m to the northeast) could also be indicative of medieval industries but are effectively undated.

A small rectilinear earthwork enclosure (Glos SME 4353) just under 1km to the east may be the remains of a medieval hunting lodge associated with the medieval management of the Royal Forest (Hoyle 2007, 34ff). This feature has not, however, been dated with any certainty.

The current A4136, which forms most of the northern limit of the study area was first recorded in 1608 (Clissold 1980) and may be a medieval route, which links with, or was part of the Spanneway (Glos HER 6779), the medieval route through the Forest of Dean from Gloucester to Coleford and Monmouth via Mitcheldean.
3.2.4 Post-medieval

Post-medieval archaeology both within and in the immediate vicinity of the study area is dominated by remains of the Forest of Dean’s industrial history.

Coal

The study areas industrial history is dominated by the coal industry. The extensive remains of surface or shallow coal workings within the study area (Glos HER 22702, 22705 and 33227) and the vicinity (Glos HER 27625) may date to the earlier post medieval period (or perhaps earlier), and there is considerable evidence for numerous deeper mines dating from the 18th to the 20th centuries (see 1 below). The latest phases of the Forest of Dean coal industry area also represented by the Northern United Colliery (Glos HER 4357), the last deep mine to be opened in the Forest and also the last to close, the remains of which are found in the northwestern part of the study area.

Although coal is the most extensive industry within the study area, other industries are also represented, and the study area and its immediate vicinity are a microcosm of the industrial history of the Forest of Dean more generally.

Brick

The study area includes evidence for brickworks, exploiting the clays within the coal measures of the Forest of Dean, including the still-active Coleford Brick and Tile Works (originally the Hawkwell Brickworks, Glos HER 4356) founded in the early 20th century on the site of an earlier tinplate works (Glos HER 5665).

Iron

The Hawkwell Tinplate Work (see above) reflects the importance of the iron industry in the Forest of Dean, and although iron ore deposits are not known within the study area, it is sited only c.1.5km to the west of a series of scowles, geomorphological features which may have been used as a source of iron ore since pre-Roman times (Hoyle et al 2007, 4.1.6.1ff), which are the surface expression of iron ore bearing carboniferous limestone which ring the central Forest. The 19th century Fair Play iron mine (Glos HER 33899) is only c.1.3km to the east, and the Forest Vale Iron works (Glos HER 9939), which operated from c.1850, was c.1.3km to the south.

Timber

Following the Dean Forest Reafforestation Act of 1668, in which 11000 acres of Dean was to be enclosed to ensure timber supplies for the Royal Navy (Jurica 1996c), the woodland resource of the Forest of Dean was managed form a series of lodges built to house Crown appointed keepers, each with the responsibility of patrolling a section of the Forest. Two of these lodges are known in the immediate vicinity of the study area. Herbert Lodge (Glos HER 22204), one of the original 17th century lodges created immediately after the Act is sited immediately to the northwest of the study area to the north of the A4136, whilst Haywood Lodge (Glos HER 22457), an early 19th century lodge, is c.1km to the east. Timber processing is also represented by the Broadmoor Wood Chemical Works (Glos HER 12929) discussed more fully in 5.4 below, the site of which was in use as a timber yard in August 2009.

Stone

No stone quarries are known within the study area, but these are a common features of the higher ground in its immediately vicinity with 13 known within 1km of the study area (Glos HER 10500, 10507, 10508, 10538, 10542, 10702, 22701, 22702, 22714, 22719, 22720, 22739 and 27947).
Other industries

Other industries within the study area include the 19th century Haywood Engine Works (Glos HER 10548) and the Steam powered Mill with gave the settlement of Steam Mills its name (Glos HER 10547) both of which are discussed more fully in 1 below.

Communications

From the 17th century these later post-medieval industries were served by a network of tramroads and railway lines, many of which were both within and in the vicinity of the study area (see 7.2 below). In addition to these, a short canal (the Cinderford Canal, Glos HER 20428) was constructed in the 1790s only c.250m to the southeast of the study area.

Settlement

19th century settlement, both within the study area and its immediate vicinity is represented by the industrial villages of Steam Mills and Newtown which are discussed more fully in 1 below.

3.3 Cartographical evidence for the study area

3.3.1 18th and 19th century maps

The earliest known cartographic source which includes the study area (the 1608 map (Clissold 1980) does not extend south of the road which forms its northern edge – see 3.2.3 above) dates to around 1700 (PRO c.1700). This schematic map shows the study area as an apparently open area called “Broadmeadow” with woodland to the north. Around the south eastern part of the study area is a large triangular water body formed by a dam across the Cinderford Brook marked “Knave’s (?) old Green Upper Dam”. This pool, together with a second dam at Cinderford Bridge to the south was part of a water-storage system for Soudley blast furnace (David Cranstone, Appendix B) and is remembered in the name “Dam Green” in the central southern part of the study area, recorded on the most recent Ordnance Survey maps (OS 2009) although the map of 1856 (Gwatkin 1997) shows a water body known as “Dam Pool” apparently dammed by an embankment which in 1856 was used as the line of the Forest of Dean Tramroad (Glos HER 5705) immediately to the southeast of the study area. There is very little detail on this map although the area which approximately corresponds to the northeastern part of the study area is marked “Colepits” indicating that the coal seams which outcrop in this area were being exploited at that time.

Driver’s map of 1787 (Driver and Driver 1787) also shows this triangular pool and the woodland at the northern edge of the study area (corresponding to the modern Hawkwell Inclosure and marked as part of “the Delves”) although the open area in the central part of the study area was recorded as “Nofold Green” at that time. An area of woodland marked as Birchwood Enclosure, corresponding to the modern Birch Wood in the southwestern part of the study area is also recorded, as is the road forming most of the northern boundary of the study area (the modern A4136). No mines or other industrial working are marked on this map although the placename “the Delves” undoubtedly refers to the area of the small scale surface or shallow coal workings the eastern part of which is within the northern part of the study area (Glos HER 22702, see 6.2 below).

The Sopwith map of 1835 (Sopwith 1835) is the first map to record coal mining sites in any detail and mines known as Small Profit, Dipple, Ready Money, No luck at all, Nofold, Protection, Squib, Defender, Churchway Pit, Young Colliers, Winning Land and Winning Deep are recorded in the study area. This map also shows numerous unnamed pits in the woodland which, approximately corresponds to the surface or shallow mine workings recorded in the northern part of the study area (Glos HER 22702) and in the area later recorded as “The Delves” to the west (Glos HER 27625). Sopwith’s map also shows the road which forms part of the northeastern boundary of the study area (the modern A4151). This map also depicts the Forest of Dean Tramroad (Glos HER 5705).
A number of new coal mining sites (Hawkwell, Rush Pit, Catch Candle and Never Fear) are depicted on the Board of Guardian’s map of 1856 (Gwatkin 1997), whilst some of the earlier pits (Small Profit Dipple, Ready Money, Squib, Defender, and Young Colliers) had disappeared. No Luck at All mine recorded in 1835 was also not recorded in 1856, but appears to be on approximately the same site as Tump Pit. The Forest of Dean Tramroad is also depicted on this map also a branch to Nelson colliery which was laid in 1847 (Glos HER 9984).

More coal mining sites and tramroads are depicted on the First Edition Ordnance Survey Map of 1878 (OS 1878) along with additional industries, such as the Broadmoor Chemical Works (Glos HER 12929), and also the settlements of Steam Mills and Newtown. The road system and overall distribution of woodland, settlement and open industrial areas depicted on this map is broadly consistent with the present landscape.

3.3.2 20th century maps

The 20th century maps of the study area largely comprise subsequent editions of the Ordnance Survey maps (OS 1903, 1922, 1954, 1961) and show changes in the distribution of industrial sites, and tram and railway links within that landscape, details of which are discussed more fully in 6.2 below. The only significant additions to the landscape during this period are the building of Northern United Colliery (Glos HER 4357) in the northeastern part of the study area and first depicted on the OS map of 1954 (OS 1954), and the expanding clay pits associated with Hawkwell Brickworks, later the Coleford Brick and Tile Company (Glos 4356), in the central part of the study area.

In the eastern part of the study area, between Steam Mills and New Town, more recent landscape changes include the construction of industrial units between 1961 (OS1961) and the present day (OS 2009).

3.4 Summary of previous archaeological work in the area

The study area falls within a number of large scale archaeological surveys of the Forest of Dean. These include the National Mapping Programme analysis of aerial photography (Small et al 2006), the desk-based research stage of the Forest of Dean Archaeological Survey (Hoyle 2008) and the Forest of Dean Lidar survey (Hoyle 2007). The principal findings of these have now been added to the Gloucestershire Historic Environment Record.

Parts of the study area have been included in a number of earlier archaeological assessments:

- Glos HER 16657, Cinderford Linear Park (Parry 1991a).
- Glos HER 20169, Upper Lydbrook to Nailbridge pipeline (Kenyon 1998).
- Glos HER 22286; Forest Vale Spine Road, (Parry 1991b).

Archaeological fieldwork within the study area is limited to:

- A watching brief of the capping of two mineshafts at Winning Colliery (Glos HER 9982) and New Bowson Colliery (Glos HER 9976) (Hoyle 1995).
- A negative watching brief during the laying of the Upper Lydbrook to Nailbridge pipeline (Glos HER 20169) (Morton 1999).
4 Identified sites of very low archaeological potential

4.1 Areas of open-cast coal and clay extraction

An extensive area in the central part of the Cinderford Northern Quarter was subject to open-cast extraction of coal and clay in the 1960s and 1970s. The extent of the open-cast extraction shown on Figure 2 was derived from information in the Gloucestershire County Council Planning files produced by David Ingleby of the Minerals and Waste Planning Team (GCCMP 2009), and was borne out by field evidence gathered in August 2009. Prior to extraction the ground surface was covered with colliery waste from earlier coal workings estimated to be c.2 feet (0.60m) thick, and the coal seams which extraction was targeting (the Crow Delf and Twenty Inch coal seams) outcropped in the north-eastern part of this area sloping down to the southwest at a gradient of 1:10. Accordingly the depth of extraction varied from c.5 feet (1.52m) in the north-eastern part of this zone to up to c.60 feet (18.24m) to the southwest (GCCMP 2009, correspondence from BE Strong, dated 25/01/1967, reference F37/C). Since extraction the area has been re-landscaped and it is not clear how these depths relate the present ground surface.

4.1.1 Archaeological significance

This area contained evidence for numerous 19th and early 20th century mine workings, a 19th century brick kiln, sections of the course of a number 19th century tramroads and other miscellaneous sites. Although the remains of deep underground mine working may survive below the depth of the open-cast extraction it is likely that much of the surface and near surface remains of these industries will have been destroyed in areas where open-cast extraction has taken place.

4.1.1.1 Sites probably largely destroyed by open cast extraction

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12700</td>
<td>364170 215460</td>
<td>Mountpleasant Colliery, Cinderford. Buildings were recorded on this site but not named in 1856 (Gwatkin 1997). The site was recorded as “Mountpleasant Colliery (Disused)” in 1878 (OS 1878).</td>
</tr>
<tr>
<td>12701</td>
<td>364250 215340</td>
<td>Clay pit, probably of post-medieval date, located to the south of Nofold Green, Cinderford.</td>
</tr>
<tr>
<td>12702</td>
<td>364324 215326</td>
<td>Site of a post-medieval brick kiln, Cinderford, recorded on the OS map of 1878 (OS 1878).</td>
</tr>
<tr>
<td>12703</td>
<td>364430 215390</td>
<td>Site of New Mount Pleasant Coal Pit, located to the south of Nofold Green, Cinderford. This mine was first recorded in 1903 (OS 1903), but was not recorded as a mine in 1922 (OS 1922).</td>
</tr>
<tr>
<td>19916</td>
<td>364260 215380</td>
<td>Bronze-Age bronze palstave-type axe-head found during work at Hawkwell Brickworks in 1974.</td>
</tr>
<tr>
<td>21978</td>
<td>364360 215520</td>
<td>Site of post-medieval Nofold Colliery, located at Nofold Green, Cinderford. The site was first recorded in 1835, when two collieries, Nofold and Nofold Deep, were identified (Sopwith 1835). It was also recorded in 1856 (Gwatkin 1997) and 1878 (OS 1878) but not in 1903 (OS 1903).</td>
</tr>
</tbody>
</table>
### Sites on the edge of open-cast extraction: Current status unclear

A number of recognised sites are on the periphery of the area of open-cast coal and clay extraction. The survival of archaeological remains at these sites is not clear.

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21979</td>
<td>364600 215650</td>
<td>Approximate site of Rush Pit, recorded in 1856 (Gwatkin 1997), to the west of Steam-Mills, Cinderford.</td>
</tr>
<tr>
<td>22704</td>
<td>364590 215530</td>
<td>Possible site of Young Colliers Pit, and possible associated tramroad, identified from aerial photographs during the English Heritage Gloucestershire National Mapping Programme Project, Cinderford.</td>
</tr>
<tr>
<td>22706</td>
<td>364540 215610</td>
<td>A cluster of ten extractive pits visible on aerial photographs, Cinderford.</td>
</tr>
<tr>
<td>None</td>
<td>364410 215389</td>
<td>Site of Protection coal mine first recorded in 1835 (Sopwith 1835). The mine was also recorded in 1856 (Gwatkin 1997) but was not recorded in 1878 (OS 1878).</td>
</tr>
<tr>
<td>None</td>
<td>364530 215395</td>
<td>Site of Defender coal pit recorded in 1835 (Sopwith 1835) but not recorded in 1856 (Gwatkin 1997).</td>
</tr>
<tr>
<td>None</td>
<td>364582 215475</td>
<td>Site of Squib coal pit recorded in 1835 (Sopwith 1835) but not recorded in 1856 (Gwatkin 1997).</td>
</tr>
<tr>
<td>None</td>
<td>364427 215536</td>
<td>Two buildings recorded on the map of 1856 (Gwatkin 1997) but no longer recorded on the OS map of 1878 (OS 1878). These are associated with three pools and may be industrial perhaps part of Nofold colliery (Glos HER 21978).</td>
</tr>
<tr>
<td>None</td>
<td>364206 215320</td>
<td>Crane recorded in 1878 next to the railway (OS 1878). The crane was not recorded in 1903 (OS 1903).</td>
</tr>
<tr>
<td>None</td>
<td>364422 215322</td>
<td>Stone recorded in 1878 (OS 1878), possibly a Gale stone.</td>
</tr>
</tbody>
</table>

The Bronze Age palstave (Glos HER 11916) may be of some significance, as it is indicative of prehistoric activity in this part of the Forest of Dean, further evidence for which may survive as buried archaeological features within other parts of the search area.

### Sites on the edge of open-cast extraction: Current status unclear

Section of the 19th century Forest of Dean Tramroad (also known as the Bullo Pill Tramroad), from Bullo Pill to Churchway Engine with a branch to Whimsey.

Section of Brain's Tramroad, from Trafalgar Colliery to Bilson Sidings.

Site of a post-medieval coal shaft, located at Steam-Mills, on the west side of the Old Engine Brook. This was recorded as a circular depression on the Ordnance Survey map of 1903 (OS 1903).
<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12930</td>
<td>364715 215621</td>
<td>Post medieval coal shaft recorded in 1878 (OS 1878), located at Steam Mills, Cinderford.</td>
</tr>
<tr>
<td>22705</td>
<td>364640 215640</td>
<td>Shafts and spoil heaps from Medieval or Post Medieval coal mining operations and numerous pits and hollows from earlier workings mapped from aerial photographs, Cinderford. Some of these features are outside the area of open-cast extraction.</td>
</tr>
<tr>
<td>22712</td>
<td>364595 215265</td>
<td>One of two adjacent shafts from Post Medieval coal workings mapped from aerial photographs, Cinderford.</td>
</tr>
<tr>
<td>None</td>
<td>364281 215564</td>
<td>Site of Ready Money pit recorded in 1835 (Sopwith 1835).</td>
</tr>
</tbody>
</table>
Figure 2: Area of open-cast coal and clay extraction

4.1.2 Recommended action

Given that the impact of this area of extraction is unknown, particularly where identified sites are at the periphery of the known area of open-cast extraction, or in the north-eastern part of the area where the depth of extraction is known to have been shallower, it is recommended that, prior to any development in this area, archaeological field evaluation is undertaken to assess/confirm the depth of disturbed ground to ensure that development does not impact on any surviving remains below the level of open-cast extraction.

Particular attention should be paid to evaluation of those sites on the periphery of the area of open-cast extraction to establish the extent to which in situ archaeological deposits may
survive. Where archaeological remain are identified, further excavation and recording should be undertaken in advance of development as appropriate
5 Areas with significant surviving structures and potential for below ground remains.

Four areas were identified which contain significant surviving structural remains (see Figure 3).

Figure 3: Areas of significant surviving structures

5.1 Northern United Colliery. Glos HER 4357, NGR 363800 215500 (see Appendix A)

Northern United was the last deep mine to open in the Forest of Dean (1935) and the last to close (1965). The pithead, winding gear and some ancillary buildings have been demolished, but the complex nevertheless survives as a remarkably intact group.

The surviving remains have been summarised in an earlier study, although this did not comment on their significance, with the exception of stating that "Northern United retains the most complete assemblage of Colliery buildings in the Forest of Dean" (Feilden Clegg Bradley undated, section 4.0). The outcome of reported discussions with English Heritage in 2004, in
which the remains were deemed unsuitable for Listing could not be confirmed by the Heritage Protection Team of English Heritage when they were consulted in August 2009.

The history of the site and the surviving structural remains have been subject to a separate study by David Cranstone of Cranstone Consultants (Appendix A) commissioned to accompany this report. This includes a discussion of the significance of the site in the context of current heritage protection policies and recommendations for future action. The following is a summary of the archaeological significance of the site and those recommendations.

**5.1.1 Archaeological significance**

David Cranstone’s report (Appendix A) compares the Pithead baths with the near contemporary surviving bathhouses at Eastern United and Princess Royal Collieries and states that the Northern United baths are “a relatively well-preserved and rare survival of an early NCB baths building” which although “it does not have the architectural quality of Eastern United, … is arguably more typical”. Cranstone goes on to say that “it also retains its context in terms of contemporary colliery layout, in a way that Eastern United and Princess Royal do not” and “is probably among the best surviving examples in England of the important early-NCB phase of pithead bath provision at smaller collieries”
He also discusses the value of the mining complex as a whole stating that “Northern United retains most of the buildings of its 1930s western (workshop) yard, and of its 1930s-1950s eastern yard, the latter demonstrating the development of administrative and social provision over the period. The buildings are consistently utilitarian, with little formal architectural quality and no apparent attempt to impress, express symbolism, or make ‘statements’ (except to the extent that utilitarianism may itself be a statement). However they are probably more typical of the working reality of smaller British collieries than the more architecturally impressive ‘set-pieces’ on which protection has so far focussed, and their extensive survival gives them a group value beyond that which any of them would hold in isolation.

Northern United also retains its overall layout, showing a particularly clear and rationalist zoning from east to west into ‘clean’ eastern yard, ‘dirty’ workshop western yard (both largely intact), pithead and coal handling area (visible in outline, with probably some earthwork and below-ground survival), and spoil disposal (including a small but reasonably-intact conical spoil tip, a feature-type that dominated coal-mining landscapes for much of the 20th century but is now a rare survival).”

Cranstone makes it clear that “Northern United is of appreciable conservation value (as a whole, and with the pithead baths as the most valuable single element),” and is of high importance as a survival of one of the Forest of Dean’s most important later post-medieval industries, which makes a significant contribution to the distinctive character of the area and to its sense of local identity, distinctiveness and history.

Cranstone also states that “Northern United was initially shortlisted for assessment under the MPP (Monuments Protection Programme) Step 3 coverage of the Coal Industry, but was removed from the shortlist when this had to be substantially trimmed due to financial constraints; no MPP assessment was therefore made. On the information now available, it would have been graded at * (i.e. of national importance under the Scheduling-based MPP Coal Industry criteria, but at the lower end of this range).

5.1.2 Recommended action

When making his recommendation for Northern United Cranstone states that the surviving structures should be retained “in some form of viable use” and that “this retention should include the overall layout and zoning and the exterior form of the buildings, with full recording of internal features and fittings and retention where possible. At a minimum, the site clearly requires an overall landscape and full building recording by a team familiar with 20th century industrial sites, paying particular attention to the surviving internal fittings and the functional interpretation of the building interiors”

He also however, states that “although a case can be made for Scheduling (under the criteria of former typicality, group value, and demonstrating chronological evolution, in relation to MPP Coal Industry policies)” it is not clear whether “under current legislation and policies” the site “would in practice qualify for statutory protection.”

It should be stressed that this does not diminish the value of the surviving structures, but is the consultant’s view of their position in relation to current English Heritage policies on designation. Given that the structures can be demonstrated to be of national importance, but are of “borderline” status in terms of their eligibility for statutory protection, it is recommended that English Heritage should be consulted as soon as possible to determine whether the Northern United buildings merit designation either as Listed Buildings or as a Scheduled Monument, and to discuss future development proposals for the site.

Even if the outcome of this discussion is that English Heritage does not consider the site suitable for statutory protection, the surviving structures are clearly of significant heritage value, both locally and within the wider context of late post-medieval mining remains. There is no doubt that they would be included on any local list of non-designated heritage assets which contribute to a sense of local identity, distinctiveness and history that might be
compiled in the future, and there should be a strong presumption in favour of their repair and reuse as part of any development proposal.

5.2 The Steam Mills area, NGR 364818 215654

The settlement of Steam Mills was created in the 1840s when a steam powered corn mill (Glos HER 10547), which gave the settlement its name was founded. The following elements within the settlement are of historical and archaeological significance.

5.2.1 Steam powered corn mill, Glos HER 10547, NGR 364839 215630 (see Appendix B)

The steam powered corn mill at Steam Mills was constructed by Timothy Bennet shortly before 1846 (Jurica 1996a, 346). One of the original buildings recorded on the OS map of 1878 (OS 1878) was demolished to make way for the Haywood Engineering Works, although the mill, which is recorded as “flour mill” on the OS map of 1903 (OS 1903) continued in use, and new equipment was installed in the early 1900s (Hart 1971, 376). The site is marked as “flour mill (disused)” on the OS map of 1922 (OS 1922) and the site was subsequently used as a machine tool factory and, later, as a store for plastics (Hart 1971, 376).

Surviving structures from the original mill complex consist of:

- A large four storied stone building, perhaps the original mill building, currently used as a carpet outlet. This building, appears to be generally sound condition, and, although only the eastern façade was viewed in August 2009, appears to retain many of its original; architectural features.
- The house to the south of the large stone building (NGR 364837 215616) is on the footprint of a mill structure recorded on the OS map of 1878 (OS 1878) and may also be one of the original mill buildings. This building is used as a dwelling and the front wall at least was rendered. In August 2009 it appeared to be undergoing renovation work.

Photograph 1: Steam Mills, surviving mill structure

5.2.2 Cottages to the north of Steam Mills, NGR 364817 215685

The row of 10 cottages to the north of the mill building, and fronting the western side of the Nailbridge Road, were constructed between 1856 and 1878 to house people working in local industries (Jurica 1996b, 324).
These cottages have two roof levels (see Photograph 2) which may indicate two separate phases of construction, but could simply reflect the downward slope of the Nailbridge Road to the north. These cottages are currently in use as houses and appear to be in good condition. The façade of six of these are rendered, although the remaining four retain their stone façade.

5.2.3 Haywood Engine Works, Glos HER 10548, NGR 364800 215600 (see Appendix B)

The Haywood Engine Works were founded in 1888 by Moses Edward Teague as a foundry and a machine shop on the site of one of the earlier Steam Mills buildings (Hart 1971, 165). The works specialised in the maintenance of pumping and winding engines used throughout the mining industry of the Forest of Dean (Jurica 1996a, 347). The works were still in operation in 1971 (Hart 1971, 165), although appear to have closed and were deserted when they were visited in August 2009. Accordingly, it was not possible to gain permission to inspect them in detail or access their interior, however it is clear that the main structures survive on this site as roofed brick and stone buildings, although they have corrugated iron and breeze block additions and appear to be in a poor condition.
5.2.4 Archaeological significance

The surviving late 19th century structures in this area are all elements of the industrial landscape of Steam Mills and both collectively and individually contribute to the distinctive character of the area and to its sense of local identity, distinctiveness and history.

Of particular significance is the large stone building representing a surviving part of the mid 19th century steam mill building (see Photograph 1), and perhaps also the smaller house to its south, which are not only significant industrial remains but have an enhanced value based on their association with the steam mill which gave the settlement of Steam Mills its name.

The surviving Haywood Engine Works buildings are also a significant survival of a local industry which supported the Forest of Dean’s mining industry, and may contain surviving features of value to future research into 19th century foundries and engineering works. The English Heritage Strategy for the Historic Industrial Environment (SHIER) which includes engineering works has not been completed (Keith Falconer, English Heritage - email to David Cranstone 28/08/2009) and the significance of these structures within the national context is difficult to determine with any confidence.

5.2.5 Recommended action

The complex of late 19th century industrial and domestic buildings in this area should be considered a site of local heritage importance. It would be appropriate to include them on any local list of non-designated heritage assets which contribute to a sense of local identity, distinctiveness and history of the area that might be compiled in the future. As such there should be a presumption in favour of their repair and reuse as part of any development proposal.

Of particular significance in this group is the large surviving 19th century steam powered corn mill building which should be considered for designation either as a listed building under normal architectural criteria (David Cranstone, Appendix B) or as a scheduled monument, and it is recommended that English Heritage’s Heritage Protection Team should be consulted at an early stage to determine its eligibility for this.

A detailed photographic, written and, where appropriate, drawn record should be made of the mill building and Haywood Engine works in their current condition before any development takes place. Archaeological field evaluation, followed if appropriate by excavation and recording should be undertaken in advance of any development on these sites where the ground surface is to be disturbed.

5.3 New Town, NGR 364764 215478 (see Appendix B)

The collection of cottages of New Town, c.150m to the south of Steam Mills, was constructed between 1856 and 1878 to provide workers cottages to serve the industries of the Steam Mills area (Jurica 1996a, 324). In 1878 it consisted of a discrete group of 10 houses, with yards and outhouses on either side of a central street (OS 1878). By 1903 some additional housing had been built along the central street and some buildings had been constructed in area to the west of Newtown Road c.30m to the east of the settlement (OS 1903). Further expansion between 1922 and 1961 consisted mainly of non-domestic structures in the area between the original western edge of the settlement and Old Engine Brook c.35m to the west. In August 2009 the basic layout of the settlement, its configuration on either side of the central street, and its relatively isolated and discrete position in relation to Steam Mills clearly reflects its original 19th century character.

The majority of the cottages on either side of the central street are currently used as domestic houses, and have been rendered and few retain their original stone façade.
5.3.1 Archaeological significance

The surviving late 19th and early 20th century structures in New Town are all elements of the industrial landscape of the area to the north of Cinderford which collectively and individually contribute to the distinctive character of the area and to its sense of local identity, distinctiveness and history. However, the significance of individual buildings is enhanced by their inclusion as part of the townscape of New Town, which retains much of its original character as a discrete 19th century industrial settlement.

5.3.2 Recommended action

The whole settlement of New Town and all of its surviving 19th and early 20th century buildings should be considered a site of local heritage importance. It would be appropriate to include them on any local list of non-designated heritage assets which contribute to a sense of local identity, distinctiveness and history of the area that might be compiled in the future. As such there should be a presumption in favour of their repair and reuse as part of any development proposal.

Given the importance of 19th century industry to the history of the Cinderford area, this group of buildings may be eligible for consideration for conservation area status as an area of ‘special architectural or historic interest’ (David Cranstone, Appendix B). The current appearance of the structures may militate against this and early consultation with the Forest of Dean District Council Conservation Officer is recommended to clarify this situation before any development proceeds in this area.

5.4 Broadmoor Chemical Works, Glos HER 12929, NGR364700 215250 (see Appendix B)

The Broadmoor Chemical Works were built c.1864 by John and Thomas Powell, manufacturing chemists, and by 1881 were making acetic acid into sugar of lead (Hart 1971, 351). By 1886 the Broadmoor Chemical company, now owned by George Church, was
described as "manufacturers of charcoal, sugar of lead, acetate of lime, naphtha etc." (Hart 1971, 351). These were products of the wood distillation process in which wood was heated in cylindrical vessels (retorts) to separate liquids and solids, and the liquids further processed, through distillation to separate it into its constituent elements (see Appendix B). The process was introduced to the Forest of Dean around 1835 at Cannop as a means of profitably utilising unsalable timber (Russell 2000, 207-208).

The works closed around 1900 and much of the plant was dismantled and put up for sale (Hart 1971, 352) and in August 2009 it was in use as a timber yard.

5.4.1 Archaeological significance

Elements of the stone perimeter wall survive, the inner face of which could "retain substantial evidence of the buildings ranged against it" (David Cranstone, Appendix B). Two of the original structures also survive in the southern part of the site. These were reported by the present owner to be an old stables and smithy and presumably are the stables and smiths shop listed in the particulars of sale (Hart 1971, 352). Both of these structures were in poor condition and engulfed by more recent buildings associated with its use as a timber yard (Photograph 5). Access was not gained in 2009, although Hart (1971, 353) reports that the bellows and hearth survived in the smiths shop in 1971.

Photograph 5: Surviving remains of stables and smiths shop at Broadmoor Chemical Works

Although the majority of the buildings have been demolished, the site appears to have been reused rather than extensively redeveloped since the chemical works was closed and the footings of these structures is likely to survive below ground. Similarly, although many of the fittings appear to have been sold (see above), Hart (1971, 353) suggests that some of the below ground fittings, such as underground storage tanks, may also survive on the site, and below ground survival of archaeological remains relating to the chemical works is likely to be high (David Cranstone, Appendix B). In addition to structural remains, residues of the distillation may also survive on the site, which could "yield valuable information on the process, if subjected to scientific examination" (Cranstone & Rimmington 2000, 50).

Although the wood-based chemical industry was generally small-scale and of limited importance in its own right, it represents the first stages in technological developments which became of major importance in the later chemical industries based on coal and oil. This industry has been little studied and all known sites with surviving structures or good potential for below ground remains should be considered of potential significance (Cranstone &
Rimmington 2000, 51). Under the current Monuments Protection Programme Chemical Industries Step 1 criteria, this site would be eligible for assessment for Scheduling (David Cranstone, Appendix B).

5.4.2 Recommended action

It is recommended that English Heritage’s Heritage Protection Team should be consulted at an early stage to assess the suitability of Broadmoor Chemical Works for designation as a Scheduled Monument.

Even if the outcome of this assessment is that English Heritage does not consider the site suitable for scheduling, the surviving 19th century structures should be considered a site of local heritage importance. It would be appropriate to include them on any local list of non-designated heritage assets which contribute to a sense of local identity, distinctiveness and history of the area that might be compiled in the future. As such there should be a presumption in favour of their repair and reuse as part of any development proposal. A detailed photographic, written and, where appropriate, drawn record should be made of the structures in their current condition prior to any development, and full archaeological mitigation involving evaluation and excavation and recording, if appropriate, should be undertaken in advance of any development on this site where the ground surface is to be disturbed.

It should be noted that “Contemporary references to ‘sugar of lead’ production indicate that contamination with lead is very likely to be present, and other toxic or carcinogenic contamination may also be present; appropriate Health and Safety advice should be obtained before any on-site investigation.” (David Cranstone Appendix B)
6 Coal mining sites

6.1 Later post-medieval coal mining sites

Although a number of later post-medieval (mainly 18\textsuperscript{th}, 19\textsuperscript{th} and early 20\textsuperscript{th} century) mining sites have either been removed, or significantly truncated by open-cast mining activity (see 4.1 above), a number of examples of this type of site survive in other parts of the search area.

![Map of coal mining sites in Cinderford Northern Quarter](image-url)

Figure 5: 19\textsuperscript{th} and early 20\textsuperscript{th} century coal mining sites (Numbers are Gloucestershire HER numbers)
These can be summarised as follows:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9976</td>
<td>364400 215100</td>
<td>New Bowson colliery, one of the first mines to sink a shaft to the Coleford High Delf seam, was sunk between 1863 and 1867 and was operational until 1925 (Oldham 2002, 37). In August 2009 this site was partly under woodland, and partly in open ground. Some structural remains survived including two mine shafts which were capped in 1991. Some piles of rubble, presumably derived from demolished buildings, were scattered about the site. The spoil heaps associated with this mine appear to have been levelled, perhaps partly as a result of landscaping associated with the creation of Cinderford Linear Park. The site has the potential to contain buried structural remains associated with the colliery, perhaps sealed below spreads of coal waste.</td>
</tr>
<tr>
<td>9980</td>
<td>363800 215320</td>
<td>Never Fear Colliery, recorded in 1856 (Gwatkin 1997), and marked as “old coal shaft” in 1878 (OS 1878). The site was within woodland in August 2009 and consisted of heavily overgrown mounds. These have the potential to conceal structural remains and the site also contains the remains of a limekiln recorded as “old” in 1878 (OS 1878) much of which is buried by dumped material (D Bick pers. comm., reported in Glos HER entry 9980). In 1835 three shafts marked “Young Colliers” were recorded in this area (Sopwith 1835), although these do not seem to be part of the Young Colliers mine (Glos HER 22704) discussed in 4.1 above).</td>
</tr>
<tr>
<td>9981</td>
<td>363980 215355</td>
<td>Churchway Colliery, opened in 1740 (Glos HER entry 9981), recorded in 1835 (Sopwith 1835), 1856 (Gwatkin 1997), and marked as buildings and an associated tramroad in 1878 (OS 1878). The site was marked as disused in 1903 (OS 1903) and in August 2009 was within woodland and consisted of heavily overgrown mounds. These have the potential to conceal structural remains, and the remains of arches and a possible engine house have been reported (D Bick pers. comm., reported in Glos HER entry 9981).</td>
</tr>
<tr>
<td>Glos HER</td>
<td>NGR</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9982</td>
<td>36400 214900</td>
<td>Winning Colliery, probably opened by 1825 (see Glos HER entry 9982), recorded as Winning Land and Winning Pit in 1835 (Sopwith 1835), Winning Pits in 1856 (Gwatkin 1997) and marked as disused by 1903 (OS 1903). The site, which was mainly under conifers, is immediately adjacent to the Forest of Dean Branch of the Great Western Railway (Glos HER 5704) and the wall of the coal wharf adjacent to this was recently reported to survive (D Bick pers. comm. in Glos HER entry 9982). The foundations of a small structure were also recorded in this area in July 1991 (Parry 1991, 10), although the area was extremely overgrown in August 2009 and no structural remains were visible in other parts of the site. A rectilinear depression at NGR 364372 214994 corresponds to the site of a coal shaft recorded in 1878 (OS 1878). The spoil heaps associated with this mine appear to have been levelled, perhaps partly as a result of landscaping associated with the creation of Cinderford Linear Park. The site has the potential to contain buried structural remains associated with the colliery, perhaps sealed below spreads of coal waste.</td>
</tr>
<tr>
<td>10538</td>
<td>363973 215246</td>
<td>Site of a coal shaft recorded as an unlabelled feature in 1856 (Gwatkin 1997) and as “Old shaft” in 1878 (OS 1878). The site was in woodland in August 2005 and survives as a distinct hollow within a depression.</td>
</tr>
<tr>
<td>10540</td>
<td>364300 205900</td>
<td>Hawkwell Colliery originally opened in 1841, but abandoned shortly afterwards due to problems with water. It was reopened in 1874 and continued in production until 1895 (Oldham 2002, 29), although the main shaft was reopened in 1935 to act as a ventilation and an emergency exit for Northern United (Pope and Karau 1997b, 272). Structures were recorded on the site in 1961 (OS 1961), and structural remains, such as a capped mineshaft, have been recorded in more recent site visits (Jane Isaac 1991, reported in Glos HER entry 10540). The remains of a curved wall, which may have been associated with the embankment for the tramroad serving the site (Glos HER 20196), was visible in August 2009. Much of the site is within woodland and consisted of heavily overgrown mounds which have the potential to conceal structural remains associated with colliery, although a large section of the spoil heap had been recently quarried away. See Appendix B for more details about this site.</td>
</tr>
<tr>
<td>10541</td>
<td>364559 215910</td>
<td>Site of a coal shaft recorded as a building in 1856 (Gwatkin 1997, a coal shaft in 1878 (OS 1878) and simply as an earthwork in 1903 (OS 1903). In August 2009 this was under woodland and was visible as a hollow.</td>
</tr>
<tr>
<td>10544</td>
<td>364721 215708</td>
<td>Site recorded as “old coal shaft” with some associated earthworks and structures in 1903 (OS 1903). No structural remains were visible in August 2009, although these may survive below ground, and the associated spoil heap appears to have been levelled or spread.</td>
</tr>
</tbody>
</table>
Gloucestershire County Council, Environment Directorate, Archaeology Service
Cinderford Northern Quarter, Heritage and Archaeological Assessment, September 2009

<table>
<thead>
<tr>
<th>Glos</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10545</td>
<td>364803 215760</td>
<td>Site of Catch Candle coal mine recorded in 1856 (Gwatkin 1997) and as &quot;old coal shaft&quot; with an associated mound in 1878 (OS 1878). The site was an area of waste ground in August 2009 and although no surface remains were visible these may survive below ground.</td>
</tr>
<tr>
<td>12926</td>
<td>364650 215760</td>
<td>Site of Tump Pit recorded in 1856 (Gwatkin 1997) and recorded as &quot;old coal shaft&quot; and associated earthworks in 1903 (OS 1903). In 1835 a mine named as &quot;No Luck at All&quot; was recorded at what appears to be the same site. No structural remains were visible in August 2009, although these may survive below ground, and the associated spoil heap appears to have been levelled or spread.</td>
</tr>
<tr>
<td>None</td>
<td>364244 215636</td>
<td>Approximate position of a mine marked as &quot;Dipple&quot; in 1835 (Sopwith 1835) but not recorded on later maps.</td>
</tr>
<tr>
<td>None</td>
<td>364441 216053</td>
<td>Approximate position of a mine marked as &quot;Small Profit&quot; in 1835 (Sopwith 1835) but not recorded on later maps.</td>
</tr>
<tr>
<td>None</td>
<td>364866 215569</td>
<td>Site of coal shaft, associated spoil heap and a building recorded in 1903 (OS 1903) and 1922 (OS 1922). In August 2009 the site of these features was below industrial units constructed since 1961. Although any surface remains of this coal shaft and associated building are likely to have been destroyed by later development, below ground remains may survive.</td>
</tr>
</tbody>
</table>

6.1.1 Archaeological significance

All of these sites have the potential to contain surviving archaeological remains associated with the later post-medieval Forest of Dean coal mining industry (see above). Even where no surface evidence is visible these sites have the potential for buried archaeological remains just below the ground surface, and in some instances there is the potential for a high degree of preservation below thick deposits of colliery spoil.

6.1.2 Recommended action

Where development is to affect any of these sites full archaeological mitigation involving evaluation and excavation and recording, if appropriate, should be undertaken in advance of any development which involves ground disturbance. Where sites are in woodland this should be preceded by a ground survey undertaken at an appropriate time of year (January to March) to identify any structural remains obscured by undergrowth in August 2009.

6.2 Surface remains of shallow coal workings likely to be of earlier date.

Three areas of surface remains of shallow coal workings have been identified within the search area. The exploitation of coal has a long history in the Forest of Dean and coal has been identified at Romano-British villa sites in the Forest of Dean where it was probably used either for industrial heating or other processes, such as ore roasting, which did not need very high temperatures (Fulford & Allen 1992). Coal is also known to have been exploited throughout the medieval period, and would have continued to be exploited by means of irregular surface workings until deep mining became the norm as drainage techniques improved from the 17th century (Hart 1971). Extensive areas of surface coal workings to the
west of the study area (The Delves, Glos HER 27625) are thought to date to the 16th and 17th centuries (Youles 2003, 2004, see also Dave Cranstone, Appendix B), and are certainly recorded by 1678 (Hart 1995, 152, 166) whilst others to the east date to c.1656 (Hart 1995, 146-7, see also David Cranstone, Appendix B). Surface and shallow workings continued to be worked on a smaller scale and in an ad hoc way after this period and some surface coal extraction is reported from the 20th century (Brian Johns pers. comm.). Although workings of this type are generally considered to be late medieval or early post-medieval in date, no examples in the Forest have been dated with any degree of certainty. It has been suggested that the earliest exploitation of coal deposits may have taken place in those areas closest to the iron ore outcrops around the edge of the Statutory Forest (Hoyle et al 2007) as these would have been able to make use of the existing communications infrastructure set up for iron ore exploitation in these areas (D Bick pers. comm.). No serious archaeological exploration to determine the date of individual areas of surface coal workings has, however, been undertaken.

The surface coal workings identified within the study area are:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22702</td>
<td>364070 215690</td>
<td>Extensive area of surface pits and spoil heaps, identified principally from Lidar evidence, which can be interpreted as the remains of surface and shallow coal workings. These were within woodland in August 2006 and were clearly visible as irregular pits and associated mounds. Although features of this type have a potential date-range from the Roman period until the 20th century (see above), recent research into the Delves, a series of similar surface coal workings immediately to the west (Glos HER 27625) suggests that this type of site in this area is likely to date to the 16th-17th centuries (Youles 2003, 2004). Even where not visible on the surface, early mining remains associated with these may survive below ground, or sealed beneath later deposits, such as the spoil heap from Hawkwell Colliery (see above) or below the Northern United Colliery.</td>
</tr>
<tr>
<td>22705</td>
<td>364640 215640</td>
<td>Shafts and spoil heaps from medieval or post-medieval surface coal workings recorded from aerial photographs. These features broadly correspond to an area marked as “Colepits” on the map of c.1700 (PRO c.1700) suggesting that they were active at that time. The southern part of this group of features had been removed by open-cast extraction in the 1960s and 1970s (see 4.1 above). The northern part of this group is north of the open-cast extraction area (see Figure 6), although in August 2009 no surface remains were seen in an area of open ground with some scrub, early mining remains associated with these may survive below ground in this area.</td>
</tr>
<tr>
<td>33227</td>
<td>364184 215230</td>
<td>Six small hollows identified through Lidar in woodland. It is not clear whether these relatively widely spaced hollows represent surface coal workings or are the remains of some other small scale surface extraction.</td>
</tr>
</tbody>
</table>
6.2.1 Archaeological significance

Although features of this type are not uncommon in the Forest of Dean, where extensive areas of surface extraction pits have been identified through Lidar (Hoyle 2007, 43), they have been the subject of very little archaeological research, and are poorly understood. They are a resource of archaeological information which could inform understanding of an important Forest of Dean industry from the earliest periods, and are also significant landscape features in their own right which contribute to the distinctive character of the area and to its sense of local identity, distinctiveness and history.
6.2.2 Recommended action

Where these survive as visible surface features (Glos HER 2272, 3327) they should, wherever possible, be preserved *in situ*. Where preservation is not possible, any areas which contain the surface remains of shallow workings, and which are to be affected by development should be subject to full archaeological mitigation involving detailed topographical survey, followed by evaluation and excavation and recording, if appropriate.

Where these no longer survive as visible surface features (Glos HER 22705), the areas in which they have been recorded should be subject to full archaeological evaluation, followed, if appropriate, by excavation and recording, where development is proposed.
7 Other archaeological sites

7.1 Hawkwell Brick and Tinplate Works, Glos HER 4356 & 5665, and associated spoil heap
Glos HER 23535, NGR 364180 215360 (see Appendix B)

A tinplate works was constructed in 1878-9 and worked successfully until the early 1890s, but closed in 1895 before a brief reuse as a polish factory. What appears to have been a substantial spoil heap, made up of slag from the tinplate works, was at least partly removed for reprocessing in 1899-1903 (Pope and Karau 1992, 248-250). The site was then re-used as Hawkwell Brickworks (1904-c 1925) and the Coleford Brick & Tile Co works (1936-present) (Pope and Karau 1992, 251-256). Although one of the Tinplate Works buildings appears to have been retained until the mid 1920s (OS 1922), this had been replaced by new buildings by 1961 (OS 1961). Hawkwell formed the most easterly works in the South Wales/Dean core area of the historic tinplate industry (a major factor in the survival of the late 18th and early 19th century iron industry of the Forest), but was relatively small and short-lived by national standards (Minchinton 1957, 29, 32, 77, from David Cranstone, Appendix B).

7.1.1 Archaeological significance

"Tinplate was not specifically addressed in the 1990s Monuments Protection Programme coverage of the Iron Industry, and no national or regional criteria for protection policies are known to exist, although this situation does not reflect the manifest importance of tinplate manufacture in the development of the 17th-19th century iron industry, nor its regional importance to the Forest of Dean" (David Cranstone, Appendix B).

In August 2009 the whole of this site was occupied by the modern Coleford Brick and Tile Company works and the potential for the survival of any standing-structures or earthworks of archaeological significance is low. Evidence for the earlier, 19th century Hawkwell Brickworks and Hawkwell Tinplate Works may, however, survive as buried archaeological remains. The large spoil heap to the west of the Tinplate works (see Figure 7) survives as an earthwork and probably comprises waste material from the Hawkwell Tinplate Works and may contain information of value to a study of this industry.

7.1.2 Recommended action

Where development is to affect this site full archaeological mitigation involving evaluation and excavation and recording, if appropriate, should be undertaken in advance of any development involving groundworks. Any surviving slag (or other process-residue) deposits would also merit archæo-metallurgical examination (David Cranstone, Appendix B) and an appropriate expert should be consulted if evaluation demonstrates the survival of substantial kilns or other features.
7.2 Tramroads/railway lines

Numerous 19th and 20th century tramroads and railways which served the industrial sites of the Forest of Dean have been recorded within the study area. These are:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4632</td>
<td>Tramroad from Woodside and East Slade Collieries to Churchway, constructed by 1850, but no longer in use by 1922 (OS 1922).</td>
</tr>
<tr>
<td>Glos HER</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>5670</td>
<td>Westbury Brook (or Edge Hill) Tramroad. The tramroad was laid in c.1842, but had fallen out of use and been lifted by 1908 (Pope &amp; Karau 1997, 348).</td>
</tr>
<tr>
<td>5704</td>
<td>Forest of Dean Railway, a branch of the South Wales Railway laid on the course of the former Forest of Dean Tramroad (Glos HER 5704) in 1854, and later partly utilized by the Great Western Railway as an extension to the Forest of Dean Railway.</td>
</tr>
<tr>
<td>5705</td>
<td>Forest of Dean Tramroad (also known as the Bullo Pill Tramroad), from Bullo Pill to Churchway Engine with a branch to Whimsey and a branch to Nofold Colliery. This horse drawn tramroad, which opened in 1809, was the earliest example of a planned rail network, opened in 1809. In 1854 it was replaced with the broad gauged Forest of Dean Railway (Glos HER 5704).</td>
</tr>
<tr>
<td>9984</td>
<td>Tramroad to the Forest of Dean line from Nelson Colliery. The tramroad was laid c.1847 and replaced by a broad gauged railway in c.1856.</td>
</tr>
<tr>
<td>10536</td>
<td>Post medieval tramroad incline located at East Slade Colliery, East Slade, Drybrook. The colliery was operational between c.1838 and 1902 (Oldham 2002, 27).</td>
</tr>
<tr>
<td>10540</td>
<td>19th century tramroad between Hawkwell Colliery and Churchway. The tramroad was constructed c.1879 and removed in 1901.</td>
</tr>
<tr>
<td>12148</td>
<td>Private tramroad (Bishop's Tramroad) laid in 1834, from Newbridge Engine Pits to the Forest of Dean Tramroad at Whimsey. The tramroad was lifted in 1842.</td>
</tr>
<tr>
<td>12704</td>
<td>Brain's tramroad, from Trafalgar Colliery to Bilson sidings. Constructed c.1862 the tramroad fell out of use between 1891-2 and the track was removed between 1901 and 1925.</td>
</tr>
<tr>
<td>20408</td>
<td>Tramroad at Winning and Duck Collieries. The tramroad is recorded in 1878 (OS 1878) but had been removed by 1903 (OS 1903).</td>
</tr>
<tr>
<td>20806</td>
<td>Former Mitcheldean Road and Forest of Dean Junction Railway, from Whimsey to Mitcheldean Road (Herefordshire), never fully opened and later partly utilized by the GWR as an extension to the Forest of Dean Railway. The railway was completed in 1880, and the section within the search area was opened for mineral traffic in 1885 and for passengers in 1907. The railway was closed between 1930 and 1953.</td>
</tr>
<tr>
<td>None</td>
<td>In August 2009 a section of rail was visible in the surface of a metalled trackway at c.NGR 364549 215208 in the southeastern part of the study area. This may indicate the line of a tramroad not recorded in other sources.</td>
</tr>
</tbody>
</table>
Figure 8: All recorded tramroads and railways within the study area
Much of the system is fossilised in the existing network of trackways and paths through the study area, although in a few places, principally in areas of woodland, these survived as visible embankments or cuttings. In addition a number of wooden fence posts which originally demarcated the railway boundary were identified in the southern part of the study area adjacent to the line of the Forest of Dean Railway (Glos HER 5704).
7.2.1 Archaeological significance

The remains of rails or tramroad setts can survive in areas which have formerly been used as tramroads or railways, even where there is no visible evidence for these features or the route is currently in use as a trackway (see above). Where visible remains (e.g. cuttings or embankments) survive, these features have some significance as landscape features which reflect the distinctive character of the area and to its sense of local identity, distinctiveness and history.

7.2.2 Recommended action

Surface remains of the tram or railway system should be preserved where possible. Any such remains which are to be affected by development should be subject to appropriate archaeological investigation and recording. Even where no surface remains survive or the former rail or tramroad is currently in use as a trackway, archaeological evaluation should be undertaken where these are to be affected by development to identify any surviving railway lines or tramroad setts, which may be sealed beneath modern surfacing.

7.3 Old Engine Brook

Old Engine Brook is a canalised water course which served industries in the eastern part of the study area. The course of this has been altered as part of the restoration of the area of open-cast coal and clay extraction. The remains of its 19th and early 20th century course survive as a linear hollow and although the northern section of this feature was still a water course, much of the southern part was dry when visited in August 2009.

7.3.1 Archaeological significance

The surface remains of Old Engine Brook are of limited archaeological potential, although they are significant as a landscape feature which reflects the distinctive character of the area and its sense of local identity, distinctiveness and history.

7.3.2 Recommended action

The surface remains of Old Engine Brook should be preserved where possible. Any remains which are to be affected by development should be subject to appropriate archaeological investigation and recording.

7.4 Forest enclosure boundary

Forest enclosure boundaries are a feature of the woodland in the Forest of Dean and represent the remains of various episodes of enclosure of Crown woodland between the 17th and 19th centuries, primarily for the purpose of preserving timber supplies for naval use. These currently survive as narrow low banks often enclosing large areas of woodland (Hart 1995, 228ff). The remains of a Forest enclosure boundary recorded on the Board of Guardian’s map of 1856 (Gwatkin 1997) was visible in the woodland in the northern part of the study area, surviving as an earth bank, with a ditch to its east.

7.4.1 Archaeological significance

The remains of the post-medieval forest enclosure boundary is of limited archaeological potential, although it does have some significance as a landscape feature which reflects the distinctive character of the area and its sense of local identity, distinctiveness and history.
7.4.2 Recommended action

The visible remains of the boundary should be preserved where possible. Any section of it which is to be affected by development should be subject to appropriate archaeological investigation and recording as deemed necessary on a case-by-case basis.

Figure 10: Miscellaneous sites with the study area
7.5 Undated stones

A number of stones were recorded from early map evidence within the search area. As none of these were located in August 2009 (many were within woodland which was too overgrown to survey at that time of year), their status, or survival is not clear, although some may represent Gale Stones. These were used in the later post-medieval period to demarcate the “area granted for the working of coal or iron ore within the Hundred of St Briavels” (Hart 2002, 555-6), an area known as a Gale within the Forest of Dean. The following stones were identified:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12273</td>
<td>364136 215866</td>
<td>Post medieval enclosure boundary stone located south-west of Hawkwell Colliery.</td>
</tr>
<tr>
<td>27939</td>
<td>363733 215275</td>
<td>Undated stone located north of Cinderford.</td>
</tr>
<tr>
<td>None</td>
<td>364649 215310</td>
<td>Stone recorded in 1878 (OS 1878).</td>
</tr>
<tr>
<td>None</td>
<td>364697 215452</td>
<td>Stone recorded in 1878 (OS 1878).</td>
</tr>
<tr>
<td>None</td>
<td>363732 215275</td>
<td>Stone recorded in 1903 (OS 1903).</td>
</tr>
</tbody>
</table>

7.5.1 Archaeological significance

These stones are of limited archaeological potential, but are significant features reflecting the distinctive character of the area and to its sense of local identity, distinctiveness and history.

7.5.2 Recommended action

These stones should be preserved where possible. If any are to be affected by development they should be archaeologically recorded, carefully removed to prevent damage to the stone, and removed to an appropriate museum for long-term curation.

7.6 Brick structure

A brick structure (Photograph 6) was recorded within woodland in August 2006 and corresponds with the site of a small rectangular building recorded in 1961 (OS 1961) at NGR 363905 215631. The structure had no windows (although it did have a number of air vents high in the walls), a thick concrete roof, and doorways at either end which appeared to have had strengthened doors (now removed). The purpose of this structure is not clear, but it appears to be too recent to have been associated with the 19th century Hawkwell Colliery (Glos HER 10540). The Ordnance Survey map of 1961 (OS 1961) shows this structure to be linked to the Northern United Colliery Site (Glos HER 4357) by a trackway through the woodland and it would seem likely that it was connected with Northern United, perhaps as an explosives store.

7.6.1 Archaeological significance

If the structure is a surviving part of the Northern United complex it is of considerable archaeological and historical significance as part of the most complete assemblage of surviving Colliery buildings in the Forest of Dean (see 5.1 above).
7.6.2 **Recommended action**

The structure is interpreted as part of the remains of Northern United Colliery and should therefore be considered to be of significant heritage value, both locally and within the wider context of late post-medieval mining remains. They would certainly be included them on any local list of non-designated heritage assets which contribute to a sense of local identity, distinctiveness and history of the area that might be compiled in the future, and there should be a strong presumption in favour of its repair and reuse as part of any development proposal. A record should be made of its current condition in advance of any proposed works.

![Photograph 6: Brick structure at NGR 363905 215631](image)

7.7 **Dam Pool**

Site of a large triangular pool formed by a dam across the Cinderford Brook and first recorded as “Knave’s (?) old Green Upper Dam on a map of c.1700 (PRO c.1700). This pool, together with a second dam at Cinderford Bridge to the south, was part of a water-storage system for Soudley blast furnace (David Cranstone, Appendix B) and is remembered in the name “Dam Green” in the central southern part of the study area. The map of 1856 (Gwatkin 1997) shows this pool, marked as “Dam Pool” and dammed by an embankment used as the line of the Forest of Dean Tramroad (Glos HER 5705) to be outside the study area, but immediately to its southeast. It is not clear whether the pool originally extended into the study area.

7.7.1 **Archaeological significance**

It is likely that this pool, which has now been filled in, originally lay outside the study area. However, if any part of it originally extended into the southeastern part of the study area, water-logged deposits which may contain environmental evidence may survive.
7.7.2 Recommended action

Any development in the southeastern part of the study area should be subject to an appropriate level of archaeological field evaluation to assess/confirm the presence of environmental deposits associated with this pool.

7.8 Other sites of lesser significance

A number of other sites were identified in the course of the survey. These are as follows:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9330</td>
<td>363750 215420</td>
<td>Medieval occupation debris at Limekiln Farm.</td>
</tr>
<tr>
<td>12925</td>
<td>364757 215740</td>
<td>Post medieval weighing machine at Steam Mills recorded in 1878 (OS 1878) but not recorded on subsequent editions of the Ordnance Survey map. No trace of this was visible in August 2009.</td>
</tr>
<tr>
<td>None</td>
<td>363683 215283</td>
<td>Nelson Green Brickworks recorded in 1878,(OS 1878) but demolished by 1922 (OS 1922). Only the associated clay pit, which survives as a water-filled feature, is within the Cinderford Northern Quarter search area.</td>
</tr>
<tr>
<td>None</td>
<td>364008 215181</td>
<td>Building recorded in 1922 (OS 1922), but not recorded in 1961 (OS 1961).</td>
</tr>
<tr>
<td>None</td>
<td>364455 215732</td>
<td>Building recorded in 1856 (Gwatkin 1997) and still recorded in 1922 (OS 1922), but not recorded in 1961 (OS 1961).</td>
</tr>
<tr>
<td>None</td>
<td>364538 215937</td>
<td>Building recorded in 1856 (Gwatkin 1997) but not recorded in 1878 (OS 1878).</td>
</tr>
<tr>
<td>None</td>
<td>364329 215636</td>
<td>Building recorded in 1856 (Gwatkin 1997) but not recorded in 1878 (OS 1878).</td>
</tr>
<tr>
<td>None</td>
<td>363959 215423</td>
<td>Pools recorded in 1856 (Gwatkin 1997), as an area of wet ground in 1878 (OS 1878), and as a rectilinear enclosure in 1903, and 1922 (OS 1903, 1922). This enclosure was not recorded in 1961 (OS 1961) at which time the site was part of the Hawkwell Brickworks (Glos HER 4356).</td>
</tr>
</tbody>
</table>

7.8.1 Archaeological significance and recommendations

The following recommendations are made for the miscellaneous sites recorded in the Study area:

<table>
<thead>
<tr>
<th>Glos HER</th>
<th>NGR</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>9330</td>
<td>363750 215420</td>
<td>The medieval occupation debris is of no archaeological significance as the HER record suggests that this material was introduced to the area from Sherborne Abbey and does not indicate the likelihood of in situ medieval archaeological remains.</td>
</tr>
<tr>
<td>Glos HER NGR</td>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>12925 364757 215740</td>
<td>The post-medieval weighing machine is of limited archaeological significance. Although no trace of this feature was visible in August 2009, structural remains may survive as below ground features, and although these are of limited archaeological potential, any development proposals which affect these should be preceded by archaeological evaluation, and, if appropriate, further excavation and recording.</td>
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<td>None 363683 215283</td>
<td>These water-filled clay pits are of limited archaeological significance, but should be subjected to an appropriate level of recording if they are to be affected by development.</td>
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<tr>
<td>None 364008 215181</td>
<td>Remains of this building may survive as below ground features, and although these are of limited archaeological potential, any development proposals which affect these should be preceded by archaeological evaluation, and, if appropriate, further excavation and recording.</td>
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<td>None 364455 215732</td>
<td>Remains of this building may survive as below ground features, and although these are of limited archaeological potential, any development proposals which affect these should be preceded by archaeological evaluation, and, if appropriate, further excavation and recording.</td>
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<td>None 364538 215937</td>
<td>Remains of this building may survive as below ground features, and although these are of limited archaeological potential, any development proposals which affect these should be preceded by archaeological evaluation, and, if appropriate, further excavation and recording.</td>
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<tr>
<td>None 364329 215636</td>
<td>Remains of this building may survive as below ground features, and although these are of limited archaeological potential, any development proposals which affect these should be preceded by archaeological evaluation, and, if appropriate, further excavation and recording.</td>
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<tr>
<td>None 363959 215423</td>
<td>The pools recorded in the area of Hawkwell brickworks are of limited archaeological potential, and appear to have been infilled during expansion of the Hawkwell Brickworks. Their infill may, however, contain environmental evidence and they should be subjected to an appropriate level of recording if they are to be affected by development.</td>
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9 Acknowledgements

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- John Knight of Environmental Resources Management who accompanied Nick Witchell on the visit and authorised photography within the designated Bat Roost.
- The South West Regional Development Agency who allowed access to the Northern United Colliery site.
- David Ingleby of Gloucestershire County Council’s Minerals and Waste Planning Team who provided information on the extent of open-cast coal and clay extraction within the study area.
- Jan Wills, The Gloucestershire County Archaeologist, who edited the report and discussed the results with the author.
Appendix A Northern United Colliery: Assessment of Significance, by David Cranstone

Introduction

An extensive area of land (the ‘Cinderford Northern Quarter’) northwest of Cinderford is currently the subject of an archaeological assessment by Gloucestershire County Council (GCC) in advance of potential development; the study area contains extensive remains of coal mining, railways/tramroads and other coal- and woodland-related industries of various dates from at least the 17th to the 20th centuries, of which the most prominent are the surface features of Northern United Colliery (centred at SO 638 155).

As part of their assessment, GCC requested the present author to visit the Northern United site and advise on its interpretation and possible importance in terms of national policies for the conservation of coal-industry sites and structures. This report is based on a site visit on 17th August 2009, arranged and accompanied by Jon Hoyle of GCC, plus background research as referenced and acknowledged. Given the brief nature of the assessment, its conclusions should be regarded as tentative and liable to modification by more detailed site recording and other research. The report concentrates on Northern United, but brief notes on other sites within the study area are appended.

Geological and landscape context

The study area lies in the northern part of the Forest of Dean coalfield, a syncline (geological basin) of Coal Measures bounded by Carboniferous Limestone (which contains important deposits of iron ore) and other pre-Coal Measures rocks. Over most of the study area (including Northern United) the strata dip gently to the south, but towards the east side the dip swings from south to west, approaching the eastern margin of the coalfield. The surface strata consist of Supra-Pennant Beds in the upper Coal Measures, including workable brickmaking clays and several thin coal seams which were worked by the pre-20th century collieries; however Northern United was sunk through these beds and the thick Pennant Sandstone below them, to work the thick Coleford High Delf seam below the Pennant Sandstone.

Topographically, the SE part of the study area lies in the valley of Old Engine Brook (a headwater of Cinderford Brook) at 150-160m OD. A wide shallow valley feeds into this from the west between Birch Wood to the south and the lower slopes of Ruardean Walk to the north, both rising to around 190m OD on the margins of the study area. Northern United lies on the north side of this valley at c 180m OD, and is secluded except from the lower ground to the SE; its spoil tip to the west (outside the study area) occupies a gentle col between the Cinderford and Lydbrook valleys and is a relatively prominent skyline feature from much of the study area, and from the north end of Cinderford. The floors of both valleys are largely open grassland (much of it on reclaimed ground) with several lakes (landscaped from mineral extraction); the remainder of the study area is largely wooded, forming part of the extensive historic woodlands of the Forest of Dean. The east edge of the study area lies on the urban fringe of Cinderford, and includes varied 19th-20th century industry and industrial housing.

Historical summary

The NW part of the study area, including the later Northern United site, lay within a series of enclosures called ‘The Delves’ in 1856 (Gwatkin 1997). The name probably refers to Medieval and early Post-Medieval mining, and extensive earthwork remains survive to the west of the study area along the outcrop of the Supra-Pennant seams (Youles 2004). These workings appear to have been abandoned by 1787 (perhaps by 1662 – see Appendix B). An important mid-17th century mining development at Haywood probably lay just outside the east edge of the study area (Hart 1995, 146-7; see Appendix), but coal pits were active within the
east side of the study area in c 1710 (Hart 1995, 206-7). The later development of more nucleated mining can be followed on the Sopwith 1835 map (I Standing pers. com.), the 1856 map, and successive OS editions of 1878, 1903, 1922, 1954, and 1961 (publication dates). In particular, Hawkwell Colliery (SO 643 159) was opened in 1841, sunk to the Coleford High Delf seam in 1876 (after the erection of a second-hand Cornish pumping engine), and closed in or just after 1895 (Pope and Karau 1992, 248-9); this was later reused as the second-access and ventilation shafts of Northern United, with an electric winding engine in the cut-down Cornish engine house and a new Sirocco fanhouse. From at least 1856 onwards, much of the later Northern United surface yards area was occupied by a series of railways and tramroads, serving East Slade, Woodside (both to the NW of the study area) and perhaps other collieries; sidings and screens for East Slade were constructed in 1872. These were abandoned by 1922, but survived as earthworks in 1931 when the land was acquired for Northern United (Pope and Karau 1992, 270); below-ground archaeological remains may survive on the site.

Northern United colliery was developed by Henry Crawshay & Co in the early 1930s, nationalised in 1947 (along with the rest of the coal industry), and closed in 1965. Its history is described in detail by Bent (1988), concentrating on social aspects rather than structures or technology, and Pope and Karau (1992), concentrating on railways and coal-handling but with high-quality reproductions of contemporary photographs. The surface layout is shown in detail by Bent (1988, 82; slightly diagrammatic), and Pope and Karau (1992, 285; labelled as c 1948 but including the pithead baths constructed in 1950-1952). The OS 1:2500 1st (surveyed 1878, published 1878), 2nd (revised 1901, published 1903) and 3rd (revised 1921, published 1922) editions show the area before the colliery was developed. For the 4th edition (published 1954) only the 1:10,000 sheet has been consulted; the survey date must be between 1943 and 1952 (at latest) since it includes the canteen but not the pithead baths, and it is probably slightly simplified relative to the other map sources. The 5th edition 1:2500 (published 1961) shows the colliery in detail in its later years; the survey date is not known, but clearly post-dates both the pithead baths and the 1955 remodelling of the pithead and coal-handling area.

The Northern United ‘gale’ (mineral royalty area) was acquired by Henry Crawshay & Co in 1931, but work initially concentrated on the Hawkwell site, and on the concrete foundations and engine house for the main Northern United pithead; this phase included the buildings of the western colliery yard (by the pithead contractors) and the offices (by Crawshays) (Pope and Karau 1992, 272-4). A manager’s house, ‘Dean Crest’, was also built, opposite Hawkwell on the north side of the A4136 road (but within the study area, unlike the adjacent 19th century Hawkwell Cottages) (Bent 1988, 30-31). The Northern United shaft was sunk in 1933-4, and production from the shaft appears to have started in 1935, when the surface coal-handling arrangements were completed. The canteen was built in 1942-3 (by Crawshays), and the pithead baths in 1950-52 (by the NCB, after nationalisation). The pithead area was remodelled in 1955, but there is no reference to this reorganisation extending to the colliery yards. The colliery closed in December 1965, marking the end of deep mining in the Forest of Dean. Northern United had operated at a loss for most of its working life; although it had been planned to employ up to 1500 miners (Bent 1988, 24), actual employment (at least after nationalisation) ranged from 500 to 638, declining to 215 in the final years (Bent 1988, 71).

The pithead and coal-handling structures were demolished at the time of closure, but most surface buildings in the eastern and western colliery yards were retained, and adapted where necessary for light industrial use. The western yard remains in industrial use, but the eastern yard and its surrounding buildings (including the pithead baths) are now derelict; the yard is fenced off, and the buildings are heavily boarded up.

Description

The colliery site is bounded to the E by a metalled side road, running S from the A4136 road; it is entered from its NE corner by a metalled track off this. It consisted from E to W of four major zones:
• The eastern colliery yard, seemingly a ‘clean’ area, dominated by social and administrative buildings with vehicle but not rail access; largely surviving.
• The western colliery yard, a narrower N-S space surrounded by workshops, connected to a narrow-gauge rail line along its centre and crossed by the access track. Largely surviving to the S of the track (which now terminates here); the N end survives as foundations and floor slabs, and merged into an area of further narrow-gauge lines centred on two small sawmills, across the N end of the site.
• The core of the colliery, a relatively narrow N-S strip running from the winding house via the pithead itself and coal-handling rail lines and conveyers to the screens (and later washery) over the E-W mineral line that bounds the site to the S. Poorly preserved, and not inspected; the boundary of the study area runs approximately along its W side
• The spoil tips, dominated by a conical tip deposited from a rope-hauled rail incline. Largely surviving, but outside the study area and not inspected.

Description runs clockwise round the first two of these areas, starting at the NE corner and concentrating on the pithead baths.

Office and Canteen

The Office Block is externally intact, though derelict and severely overgrown; internal access was not possible, although a later visit by Nick Witchell of Gloucestershire County Council Archaeology Service, in the company of John Knight of Environmental Resources Management, confirmed that the interior had been largely stripped of its fixtures and fittings. It consists of a surprisingly domestic-looking single storey terrace facing W onto the access track, with domestic-scale windows (boarded up) and a central dormer for a clock in the W elevation, and a series of domestic scale chimneys along the ridge of the roof. It was presumably completed in May 1934, when the clock was fitted (Bent 1988, 74) and is clearly shown in photographs of 1948 (Bent 1988, 34; Pope and Karau 1992, 286), 1955 or after (Bent 1988, 115), and undated (Bent 1988, 142, 143). The N end was originally the company’s boardroom, later the area scientific laboratory (Bent 1988, 114); the S end may have been the Union office (Bent 1988, 99).

The area to the S of the Office Block was occupied by a coal sampling shed (perhaps of corrugated iron construction) and staff garages, both constructed by 1948, and now surviving as areas of overgrown concrete yard and floor surface. They are shown on the 4th and 5th edition OS maps; apparent differences in ‘footprint’ may reflect genuine alterations, or merely simplification on the 1:10,000 4th edition consulted.

To the S of these, the canteen block is a flat-roofed brick building roofed with long narrow N-S concrete slabs resting on E-W steel joists, behind parapets. The main room was well-lit by a row of six large and two small windows in the W elevation (Bent 1988, 142); two of the former have been destroyed by the post-colliery insertion of a lorry door, but the remainder survive boarded-up. Much of the interior is taken up by the single large eating-space, with a large recess in its E side marking the site of the counter and serving area. Remaining small rooms were not closely inspected, but include a probable pantry in the N end, retaining brick-and-concrete shelving. The canteen was opened in 1943, but the counter and floor were tiled and the kitchen refitted when the pithead baths were opened in 1952; from this time (if not before) it was divided into clean and dirty sides (Bent 1988, 131-135, 139-140; Pope and Karau 1992, 284-5).

Immediately to the S of the Canteen, the red-brick flat-roofed cycle shed survives (Bent 1988, 82, 115, 142; motor cycle shed according to Pope and Karau (1992, 285)); this was added when the Baths were constructed (i.e. c 1952) (Bent 1988, 141). To the S again, a lorry garage (Bent 1988, 82) does not survive; it is visible as a gabled building in a photo of 1955 or later (Bent 1988, 115). The gabled roofing is reminiscent of the 1933-4 office block (above) and fitting workshops (below); its absence on the 1:10,000 4th edition OS could be due to simplification, but the fact that the mapped vehicle track terminates at the canteen suggests otherwise, and it is certainly absent on the 5th edition (published 1961, surveyed c 1960?); although the vehicle standing that it opens onto in Bent’s photo is mapped. It may therefore
have been a short-lived 1950s feature, or a late feature only added after the 5th edition OS survey (in which case the photo on Bent 1988, 115 is later than he seems to imply).

Pithead Baths

The Pithead Baths occupies the whole S side of the eastern yard; construction started in 1950, the baths were opened in August 1952, and it is clearly shown in two 1950s photographs (Bent 1988, 115, 142). Its working life is described by Bent (1988, 138-143). Its main element is a rectangular block with an asymmetric very low-pitched double-pitch roof draining to eaves and guttering; the roof can be seen internally to consist of long very narrow concrete slabs, pitched symmetrically over the northern suite of internal rooms (the clean and dirty locker rooms, below) and resting on rather light steel trusses, with a catslide continuation over the southern rooms to the E of the tower. The east end forms a separate (though contemporary) structural element, slightly narrower and lower with a flat parapeted roof. The extreme west end also forms a lower parapeted westward projection, containing the ‘dirty’ entrance (clearly visible on the two 1950s photos but not on the ground, due to close vegetation and lack of external access to this end). The tower is a plain rectangular structure set towards the rear (south) of the main element; its S side projects very slightly from the S elevation, with a lower but longer projection immediately to its E. The tower is windowless except on its S face (where the form of its windows cannot be seen due to boarding-up), and appears to have a flat parapeted roof; the topmost courses of most of most of the N and E sides have been removed, but it is unclear whether this was deliberate or due to random damage. There is no adjacent chimney (unlike the Eastern United baths), either surviving or on the 1950s photographs, though the latter do show either one or two vertical pipes near the E side of the tower. The area E of the tower, though conforming to the plan ‘footprint’ of the main element, is carried up slightly higher, to what appears to be a flat parapeted roof. All structural elements are built of coursed 1950s-style red brick. The north elevation, onto the eastern yard, contains a row of closely-spaced windows, now boarded up and interrupted by an inserted lorry opening opposite the tower and another near the west end; one of the 1950s photos (Bent 1988, 142) shows the elevation as being plain and utilitarian, with no openings in the main element apart from the row of windows. No contemporary photos showing the S elevation are known to exist; the area immediately W of the tower (corresponding to the Shower Room internally) has slight projecting buttresses or pilasters (perhaps to take the thrust of the catslide roof), but from here W the elevation is obscured and inaccessible due to dense vegetation.

Since all the windows are thoroughly boarded up their form cannot not be seen, and for the same reason the internal light levels were very bad, ranging from dim near openable doors or areas of damage communicating to the open air, to pitch-black in rooms with neither; no internal plan was available. Inspection was therefore by torchlight and was limited for safety reasons in the darker and more encumbered spaces. However most rooms and elevations are in fact well fenestrated, and the environment within the working building would probably have been bright and not shut off from the outside world (unlike the top-lit and largely windowless Eastern United baths).

Access to the interior was obtained by a door into the lower eastern element, in the recessed angle formed by its join with the wider main element (and therefore far from prominent; see Bent 1988, 142). This doorway can be identified fairly confidently as the ‘clean entrance’, and was approached on the 1961 OS by a wide splaying path or vehicle track from the north (i.e. from the colliery entrance). This opens into a lobby area, with a suite of rooms to its left occupying the E end of the building. The main room in this suite, on the N side, is tiled with plain white tiles from floor to ceiling, and the ceiling has been painted white. Several built-in cupboards or recesses are also tiled. Smaller rooms in this suite include a toilet, but were not closely inspected due to lack of light. This suite is tentatively identified as the First Aid Room and Medical Centre (Bent 1988, 139, 141).

To the right (west), the lobby opens into a large room, occupying the E half of the main element to more than half its width, and identified with reasonable confidence as the Clean Locker Room. The room is open to the roof, with the steel trusses exposed, and would have
been well lit by a row of windows along its N wall; it also has a circular ventilation opening just below the apex of the E wall. Its walls are tiled to half-height, with guttering in the floor along the N and S walls, and a surviving row of coathooks on the N wall near the E end. The west wall contains an original doorway at the S end and an inserted lorry opening further north, both leading into the probable Dirty Locker Room (see below). There are three doorways in the S wall; the easternmost (about half way along the length of the room) is plain, led into the base of the tower (see below) and is now blocked except for a small opening at head height, whereas the other two doorways have projecting tiled surrounds and both lead into the probable Shower Room.

The room identified as the Shower Room occupies the south side of the building to the west of the tower, and opposite the west half of the putative Clean Locker Room and the east half of the Dirty Locker Room. It is entered by the two doorways just mentioned from the Clean Locker Room, and by one similar original doorway and a much wider inserted lorry door from the Dirty Locker Room; in use it would have been well-lit by an almost-continuous row of windows along its upper south wall. The room could also be observed (but not entered) from the probable Attendants' Room to the W, by at least one observation hatch or window. It is open to the roof, consisting of a very gently-pitched catslide extension of the Locker Room roofs, though resting on concrete beams rather than steel trusses. It is tiled to half-height on all walls, and has gutters alongside both N and S walls and also along the centre of the room.

Returning to the N side of the building, the western half is occupied by a single large room, very similar to the putative Clean Locker Room and identified as the Dirty Locker Room. As well as post-colliery lorry doors in its N, E and S walls (which may have removed original doorways or other features), it has an original doorway to the Clean Locker Room in the S end of the dividing wall, one (of an original two?) original doorway to the Shower Room towards the E end of its S wall, and a doorway further W in this wall leading to the probable Attendants' Room (below). A wide but relatively low rectangular opening in the dividing wall to the Clean Locker Room (just below roof level, to the south of centre) may have carried pipework or ducting. Other features are similar to the Clean Locker Room.

The remaining rooms, occupying the SW quadrant of the main element and the whole of the small western projection, are small, rather varied in plan and internal features, and currently very dark; they could not be fully understood on a single visit without the benefit of a ground plan.

To the west of the probable Shower Room, a doorway from the Dirty Locker Room gives access to a relatively narrow room extending to the S wall (where it is fenestrated), but partly subdivided by an L-shaped wall extending E than S from the centre of the W wall. The rear (S) side of this wall is occupied by electrical fittings (including switches labelled with room names in the baths, showing that they date from the colliery use of the building), and a series of ducts along the upper N part of the W wall probably carry the wiring from these. A lagged pipe runs along the top of the E wall (this lagging may well contain asbestos), which also contains at least one observation hatch or window into the Shower Room and (to the east of this) the 'ghosts' of shelving. The N wall contains the doorway from the Dirty Locker Room to the W and, to the E of this, a double hatch with 'ghosts' of a counter below it. The walls are not tiled, but have been painted to half-height in either white or pale blue. Given the presence of hatches to the Shower and Dirty Locker Rooms, and the control gear for the electrics of the building, this room was presumably the base of the baths attendants (Bent 1988, 143), to whom access was probably restricted. The hatch to the Dirty Locker Room may have been used for handing-in and returning locker keys, as miners passed along the S side of the Dirty Locker Room, and/or for issuing soap and towels to miners passing from the Dirty Locker Room to the Shower Room. It may also have served as a Lamp Room (often located in the ‘dirty end’ of pithead baths buildings), where electric cap lamps were stored, recharged, and issued to miners via the hatch; Bent (1988, 82) shows this as being in a totally-separate building in the western yard near the pithead, but he also (1988, 109) indicates that both electric and carbide lamp were in use (by officials and by ordinary miners respectively), and his Lamp Room may only have served the latter (or, if the Northern United baths are an
example of a standard NCB design, this design may have included a Lamp Room that was not in fact needed for this purpose at collieries where carbide lamps were permitted).

The remaining SW corner of the main element consists of several small rooms, whose use is not immediately apparent (apart from a toilet). From these, a doorway leads into the S end of western projection, a slightly-lower flat-roofed element of the building. Most of this is occupied by what appears to have been a boot-cleaning room, with a probable scrubbing machine on its E side and a low-level ledge and gutter along the W side, below a row of boarded-up windows. This in turn leads to the ‘dirty entrance’ in the N wall of the projection, now largely bricked-up and obscured externally by scrub, but originally a doorway with a projecting surround externally, making it a slightly more prominent feature than the ‘clean entrance’ (Bent 1988, 142). The 5th edition OS shows that this opened onto a narrow path running N along the W side of the eastern yard, to the clocking-in house at the main entrance to the western yard and pithead.

The description of the bathhouse so far has broadly followed the route taken by miners arriving clean and changing for their shift, and in reverse by miners entering the building dirty at the end of their shift (though the actual showers would only be included in the latter), except for the ‘Attendants Room’ to which access was probably restricted. This has omitted the tower on the S side and the rooms to its E, now only accessible from the exterior since the doorway from the Clean Locker Room is bricked-up. This distinction probably reflects the day-to-day experience of the miner (though not of the Baths Attendants) who would probably not have access to the water-processing areas in and E of the tower; the different treatment of the doorway from the Clean Locker Room (plain as opposed to the projecting tiled surrounds of the doorways to the Shower Room) hints at this.

Externally, the tower is a plain rectangular structure rising above the S side of the main element immediately E of the Shower Room and projecting slightly from the S elevation. Its walls are featureless apart from a double doorway central to the S face, and a suite of windows above this, seemingly of similar width and extending to the top of the first internal storey; the fenestration is obscured by boarding-up, but there is no indication of any Modernist flourishes such as that at Eastern United. There are two changes in the colour of brickwork, probably corresponding to upper floor levels internally, but these probably reflect merely the use of different batches for successive ‘lifts’ during construction, rather than any alterations or changes of plan. The element to its E conforms to the ‘footprint’ of the main element further W, but is carried up to a flat parapeted roof (originally with a pyramidal projecting rooflight (Bent 1988, 142)) slightly above the ridge level of the main element; it could be regarded as a second, lower, tower. It has a blocked original double door in its S face near the E end, and a window above this. Most of the space between these features and the main tower is occupied by a single-storey southward projection, also with a flat parapeted roof, containing a doorway in its S end and windows in its E side. The E face of the ‘second tower’ contains a window at upper level, above a further single-storey projection, with an original lorry door occupying most of its E end.

Internal inspection of these elements was very limited, due to encumbrance with large debris, safety considerations (a metal stair to the upper floors appeared sound, but was not risked), and concern over disturbance to roosting bats (one bat was observed flying round the interior during the visit, and a protected roost is believed to exist somewhere within the Baths). Some features observed may relate to post-colliery re-use, rather than the original function as part of the Baths. Ground floor level is similar to the external levels to the S, and perhaps c 0.8m below the floor level of the remainder of the Baths building.

The ground floor of the main tower contains a solid concrete plinth along its W side. To the N of this, concrete steps lead to a (largely bricked-up) doorway into the Clean Locker Room, and to the base of a steep metal staircase against the N and E walls, leading to the upper levels; these were not inspected, but could be seen to include a landing at first floor level, with a closed-off room to the S (not necessarily original). To the E, the ground floor of the tower opens into a large chamber occupying the whole of the ‘second tower’ and probably
extending to roof level; it has a wide opening though its E wall leading to the lorry door in the eastern projection, as well as the blocked opening in the S wall visible externally.

This suite of rooms can be identified in general terms as the water-handling and –processing area of the Baths. The water supply came from the pit, via a storage pond W of the entrance road opposite the Offices; it would therefore need pumping to the 9,000 gallon header tank, presumably in the top of the main tower, and it was treated with filters and steam chlorifiers (Bent 1988, 82, 138). Since there is no evidence that the building ever had a chimney, water heating (both for the showers and the steam chlorifiers) may have been by electricity. A logical arrangement would be for the water pump to be in the ground floor of the main tower, with the header tank on the second floor, the filters, chlorifiers, and heaters/boilers in the ‘second tower’ to the E, and the hot water tank on the first floor of the main tower.

Unlike the rest of the bathhouse, the massing of the main tower, ‘second tower’, main element and southward and eastward projections (all very plain cuboid elements, with different roof levels) does have some visual impact, certainly as seen looking uphill from the SE. This would provide a degree of impressiveness on the approach by rail (though so far as is known the rail access was always a mineral line rather than a passenger service), and would be visible from the northern parts of Cinderford (though to small and distant to be seriously impressive). This may indicate an element of deliberate design for effect; however in view of the relentlessly unostentatious and utilitarian design of the rest of the baths and colliery, it is more likely to be a chance result of purely functional design.

The area outside the tower, along the S side of the Baths building, is occupied by a concrete yard surface, now largely overgrown with scrub. A small brick building on the S side of this yard, SE of the tower area, can be identified as the under-cover part of the original 1930s electricity substation (Pope and Karau 1992, 276); the adjacent open-air installation does not survive.

**Eastern Yard**

Returning to the N side of the Baths, most of the W side of the Eastern Yard is occupied by a large post-colliery industrial building, of no known archaeological interest. The remainder is occupied by concrete surfaces, variably overgrown. Some at least of these surfaces are probably post-colliery, since the 5th edition OS indicates that the metalled areas were then confined to a car park across the N end beside the access road, and a track from this SE to the E end of the Baths; the remainder was probably grass and gardens. According to Bent (1988, 141) the car park and gardens were laid out for the opening of the Baths in 1952; however the car park was on the site of an earlier stone crusher (not shown on the 4th edition OS), footings for which may survive below ground.

**Western Yard**

The Western Yard to the S of the main access road remains in industrial use, and access for inspection was not granted. It was occupied by a continuous range of workshops and stores along the E side, and a shorter range along the W side; Bent (1988, 82) identifies the functions of individual shops in detail, while Pope and Karau (1992, 285) gives a more detailed plan (seemingly using a detailed contemporary plan, of unknown provenance). Both ranges were part of the original 1930s construction, and the fitting shop at least was completed by 1933 (Bent 1988, 65; Pope and Karau 1992, 273–4, 276); Bent (1988, 91–106) provides considerable detail of working life in the workshops. Most if not all of the workshops were connected to the pithead by a ‘herringbone’ layout of narrow-gauge rail lines (shown on Pope and Karau 1992, 285, and in rather different form by the 5th edition OS). Observation from outside the yard indicates that the whole eastern range, and at least part of the western range, survive structurally intact and virtually unaltered externally. Both are of red-brick construction, with gabled tiled or slated roofs, domestic-scale chimneys, and various windows, doorways, and larger openings. One building on the western range (the electricians’ shop?) appears to be constructed with alternating courses of red and blue brick.
The rail lines do not appear to survive within the current yard, but part of the system does survive to the north of the track, embedded in concrete. In this area, the western yard was continuous westwards with the yards and rail lines round the actual pithead and winding house, which in turn were continuous southwards with the various elements of the coal-handling system from the pithead to the screens (and later also washing) to the south, over the railway sidings that closed off the colliery area in this direction. The main access road also turned S through this area in a cutting, forming the lorry access to and from the screens (Pope and Karau 1992, 277-8). The site of the pithead is marked-out, but the remainder of this area (on the boundary of the study area) is heavily overgrown and was not inspected. The western yard rail lines also continued N, connecting to two small sawmills NE of the winding engine house, and to a plethora of narrow-gauge lines of uncertain purpose (perhaps largely timber-handling) along the N edge of the site. At the time of the survey for the 4th edition OS (c 1950?) this area was bounded to the E by a fence (or other boundary-marker) running S from the A4136 road, immediately E of the weighbridge (below) and the east range of the western yard, and across the rail lines E of the screens, and forming an enclosed perimeter to the colliery with the offices and canteen outside it. However by the 5th edition survey (c 1960?) the perimeter had been extended E to include the eastern yard (as it had become) and the area N from this to the A4136, and the narrow-gauge lines had been extended eastwards along the N edge of the colliery, almost to the entrance from the A4136.

The remaining area N of the access road/track, and E of the N end of the eastern yard, is mapped differently by the 4th OS, 5th OS, Bent (1988, 82) and Pope and Karau (1992, 285); it seems to have contained a series of short-lived and rapidly-altered structures and features, most (apart from the weighbridge) presumably dating from after 1948 when the area appears to have been largely unoccupied (Bent 1988, 34; Pope and Karau 1992, 286), and it may also have been substantially altered since the closure of the colliery. The main surviving structure is the lorry weighbridge and foreman’s office, part of the original construction of the colliery; the weighbridge was installed in January 1935 (Bent 1988, 106-8). This is a red-brick gabled building with slate roof, and a doorway, window and wider control opening onto the track; the weighbridge itself survives within the track outside. This formed the checkpoint at the colliery entrance at the time of the 4th edition OS survey, and the boundary between the ‘clean’ eastern yard and the western yard and pithead after the eastern yard had been completed and brought within the perimeter. The area N and E of this is occupied by a series of variably-overgrown concrete surfaces; a long narrow N-S surface starting immediately E of the weighbridge is probably the floor of the Training Tunnel seemingly constructed in or after 1952 (Bent 1988, 82, 142; the rounded roof can be made out in Pope and Karau 1992, 301 (extreme left side)). An abrupt change of level just N of this may mark the roof of an ‘emergency shelter’ identified here by Pope and Karau (1992, 285) on unknown evidence, and perhaps the Civil Defence shelter provided for the winding engineman and other key personnel in the event of nuclear attack (Bent 1988, 76-7). Further E, the storage pond for mine water for the baths (Bent 1988, 82) appears to have been infilled, but the adjacent fire station survives as a small gabled red-brick building with a lorry door in its S wall.

The only remaining feature to be mentioned is the spoil tip (or ‘mount’), which lies to the W of the colliery, outside the study area but forming a prominent visual feature (especially from the east side of the study area and Steam Mills, from where it is on the skyline). This was deposited by tippler from a rail incline, rope-hauled from a small engine-house at its base; it was abandoned in 1955, and replaced by a wider low tip deposited from dumper trucks (Bent 1988, 89, 112-3). It survives as a small densely wooded conical tip, with its profile seemingly largely intact (at least as seen from the E; the W side was disturbed by unsuccessful reworking in the 1990s (Ian Standing pers. com.,)).

Importance

The Pithead Baths

In Britain, unlike many Continental countries, pithead baths were very rare until the 1920s (Thornes 1994, 64-66). The Coal Mines Act of 1911 gave some encouragement for their
provision, but only six had been provided nationally by 1921 (one of these survives, at Atherton in Greater Manchester). The Mining Industry Act of 1920 established the Miners’ Welfare Fund, and in 1926 a specific fund was established for building pithead baths, paid for by a levy on royalties. The surviving 1929 baths at Cannop (Pope 2004, 44-45) form a rare survival of this phase (perhaps the second-earliest in the country, after Atherton). In the 1930s, the Miners’ Welfare Fund embarked on a major programme of baths provision, using designs by major Modernist architects, and concentrating on large collieries; by Nationalisation in 1947, one-third of the collieries, covering 60% of the mining workforce, had baths (Thornes 1994, 66). Baths appear to have been installed at most if not all of the remaining (mainly smaller) collieries by the NCB within a few years of Nationalisation, though these have received less attention in the modern literature.

The rarity (or otherwise) of the Northern United baths in a national context is surprisingly difficult to assess. The Monument Protection Programme (MPP) coverage of the Coal Industry (Cranstone and Instone 1994, 1995) identified 41 examples (not including Northern United, Eastern United, or Cannop), but the threshold of assessment was set at potential Schedulable quality (broadly equivalent to II* Listing, where Listing rather than Scheduling is the appropriate designation). Many of these 41 examples were large 1930s baths at collieries still working in the early 1990s, and it is likely that a high proportion have since been demolished. The Images of England website (http://www.imagesofengland.org.uk/, consulted 27/08/09) includes only four Listed pithead baths (Kiveton Park, Lynemouth, Elemore, and Chatterley Whitfield), all large 1930s examples. One of these, Elemore, is similar to Eastern United in being windowless and top-lit (Thornes 1994, 64-66). The National Monument Record (http://www.pastscape.org, consulted 27/08/09) lists 61 pithead baths, including the four Listed examples, and Princess Royal in Dean (but not Northern United, Eastern United or Cannop); however this number includes several duplicate entries, several are noted as demolished, and is likely that many more have been lost in the 1990s colliery clearance programme or other site clearances. Again, there is a preponderance of large 1930s examples; the information in many entries is very limited, and the similarity (or otherwise) of the few post-War examples to Northern United cannot be assessed, though it is clear that the NMR does not include all surviving examples. All of these sources are confined to England.

Within the Forest of Dean, four pithead baths are known to survive. The 1929 baths at Cannop are substantially earlier than Northern United and very different in style; although not of high architectural quality, they are an important survival. The baths at Princess Royal (GCC 2003, 2008) were designed by W M Taylor as one of four prototype standard designs for the Miners Welfare Commission and opened in September 1941 (programme from ‘the Bather’s Handbook; Ian Standing pers. com.) (rather than 1939 (GCC 2008) or 1944 (GCC 2003). They have substantial similarities to Northern United (sufficient to suggest that W M Taylor may also have designed Northern United or the prototype from which it was taken, though probably not sufficient to argue that both baths represent the same standard design, adapted to a steeply-sloping and more cramped site at Princess Royal). The baths at Eastern United were built in 1951 and are therefore almost precisely contemporary to Northern United, but are in a top-lit windowless Modernist style contrasting markedly with the utilitarian style of Northern United and Princess Royal, and harking back to the 1933 Modernism of Elemore (Tyne and Wear) by R A Frizzell. The contrast between Northern United and Eastern United is surprising in view of their close date, physical proximity (c 2.5 miles) and shared pre-1947 history of ownership by Henry Crawshay & Co; it appears that much of the Crawshay management continued in post under NCB control.

The Northern United baths building therefore forms a relatively well-preserved and rare survival of an early NCB baths building; it does not have the architectural quality of Eastern United, but is arguably more typical. It also retains its context in terms of contemporary colliery layout, in a way that Eastern United and Princess Royal do not. It is probably among the best surviving examples in England of the important early-NCB phase of pithead bath provision at smaller collieries. It is questionable whether the baths would meet the published English Heritage criteria for Listing (http://www.english-heritage.org.uk/server/show/nav.1373, consulted 3/11/08), particularly as currently applied to post-WWII buildings, but its preservation is highly desirable in broader conservation terms. At a minimum, it clearly
requires full building recording by a team familiar with 20th century industrial buildings, paying particular attention to the surviving internal fittings and the functional interpretation of the interior. It would be highly desirable for this to be combined with any building recording at Eastern United, and if possible with a ‘revisiting’ of the existing record of Princess Royal and new recording at Cannop, to produce a full and consistent record of all the surviving pithead baths of the Forest of Dean.

The site as a whole

Although conservation attention has focussed on the pithead baths, Northern United also retains the overall surface layout, and many of the buildings, of a medium-size 1930s-1950s colliery, within a landscape of contemporary transport links, earlier collieries, other industries and railways, and managed forest from the 20th century back to at least the medieval period. (though this broader context is outside the scope of my own specialist contribution).

Northern United retains most of the buildings of its 1930s western (workshop) yard, and of its 1930s-1950s eastern yard, the latter demonstrating the development of administrative and social provision over the period. The buildings are consistently utilitarian, with little formal architectural quality and no apparent attempt to impress, express symbolism, or make ‘statements’ (except to the extent that utilitarianism may itself be a statement). However they are probably more typical of the working reality of smaller British collieries than the more architecturally impressive ‘set-pieces’ on which protection has so far focussed, and their extensive survival gives them a group value beyond that which any of them would hold in isolation.

Northern United also retains its overall layout, showing a particularly clear and rationalist zoning from east to west into ‘clean’ eastern yard, ‘dirty’ workshop western yard (both largely intact), pithead and coal handling area (visible in outline, with probably some earthwork and below-ground survival), and spoil disposal (including a small but reasonably-intact conical spoil tip, a feature-type that dominated coal-mining landscapes for much of the 20th century but is now a rare survival).

Northern United was initially shortlisted for assessment under the MPP Step 3 coverage of the Coal Industry, but was removed from the shortlist prior when this had to be substantially trimmed due to financial constraints; no MPP assessment was therefore made. On the information now available, it would have been graded at * (i.e. of national importance under the Scheduling-based MPP Coal Industry criteria, but at the lower end of this range).

However it is not clear whether Northern United would in practice qualify for statutory protection under current legislation and policies. It is doubtful whether the buildings would be accepted for Listing under current criteria of architectural and historical importance, and although a case can be made for Scheduling (under the criteria of former typicality, group value, and demonstrating chronological evolution, in relation to MPP Coal Industry policies) Scheduling is in practice not normally considered the appropriate strategy for standing buildings whose viable future lies within the used building stock.

However for all the reasons outlined above, Northern United is of appreciable conservation value (as a whole, and with the pithead baths as the most valuable single element), and its retention in some form of viable use is highly desirable; this retention should include the overall layout and zoning and the exterior form of the buildings, with full recording of internal features and fittings and retention where possible. At a minimum, the site clearly requires an overall landscape and full building recording by a team familiar with 20th century industrial sites, paying particular attention to the surviving internal fittings and the functional interpretation of the building interiors.
Recommendations

1. The eligibility for statutory designation (by Listing and/or Scheduling) should be explored by discussion with English Heritage.

2. Regardless of the outcome of any application for statutory protection, retention and re-use of all the surviving buildings is highly desirable. This should include preservation of the external elevations and of the overall layout.

3. In advance of any substantial alterations, or demolition, the site and buildings should be recorded in detail by a team familiar with the practical and academic issues relevant to the recording of 20th century coal industry sites. Recording should be accompanied by fuller historical research; sources to be consulted should include British Coal records for the Forest of Dean area (including those in the Coal Authority archive at Mansfield), the National Coalmining Museum at Caphouse Colliery, and Ian Pope (who may well have, or know of, historic photos in addition to those used in Pope 2004 and Pope and Karau 1992). Local newspapers, and their photographic archives, should also be researched.

4. The pithead baths remains the most important and interesting individual element of the site. It is one of four known surviving examples in Dean (probably an unusual concentration nationally), along with the earlier Cannop and the contemporaneous Princess Royal and Eastern United; its design links with Princess Royal, and differences from Eastern United, are of interest, and both these sites are also understood to be under threat of redevelopment or demolition. It would therefore be highly desirable for recording of the Northern United baths to be combined with recording of Eastern United, and a re-assessment (and potentially enhancement) of the existing record of Princess Royal, and this combination would undoubtedly generate some economies in research and recording time as well as an enhanced understanding of all three sites. Ideally, this programme would also include Cannop (an important early survival, though not under threat so far as is known), to form a consistent record, analysis, and understanding of all the surviving pithead baths in the Forest of Dean. Publication in a national journal would be justified and highly desirable. This recommended programme would cross the boundaries between developer-funded and conservation-/research-led archaeology; means of achieving this should be explored.

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David Cranstone
Revised 3/09/09
Appendix B Selected other sites in study area, by David Cranstone

The following sites were also visited with Jon Hoyle on 17th August 2009, or have become apparent due to literature research for this report: I have not prepared any full independent assessment, but the following notes relate the sites to current national protection policies (where these exist).

Hawkwell Colliery

The colliery was founded in 1841, but was abandoned c 1846 due to flooding. It was reopened in 1874 by Jacob Chivers, who erected a second-hand Cornish pumping engine (in a new engine house) and sank the colliery to the Coleford High Delf seam. The colliery worked successfully for some while, but closed c 1895 (Pope and Karau 1992, 248-9). It was reopened in 1931 as a second-access and ventilation shaft for Northern United; the Cornish engine house was cut down and altered to house an electric winding engine, and some coal production occurred until the main Northern United workings were opened up. A Sirocco fan was installed in 1937, providing ventilation for the whole of Northern United, and the pithead remained in use until the closure of Northern United in 1965 (Bent 1988, 24-30; Pope and Karau 1992, 272-3).

I did not visit the site, but AP and Lidar evidence suggests that there is good earthwork survival, and therefore good potential for below-ground survival including the bases of the engine house and fanhouse. The site is unlikely to qualify for statutory protection, but would certainly merit evaluation and full mitigation in the event of any development. It should certainly be included in any fuller study of Northern United, and may have display potential either as a way-point on a trail in its present state, or as a more prominent feature in the event of excavation and conservation (the bases of the engine house and fanhouse being potentially impressive features).

Hawkwell Tinplate Works

A tinplate works was constructed in 1878-9 by Joseph Chivers, who had held the important Kidwelly tinplate works (currently preserved and displayed as Kidwelly Industrial Museum; http://www.kidwellyindustrialmuseum.co.uk/). It worked successfully until the early 1890s, but closed in 1895 and was then briefly re-used as polish factory. What appears to have been a substantial slag tip from the tinplate works was at least partly removed for reprocessing in 1899-1903 (Pope and Karau 1992, 248-250). The site was then re-used as Hawkwell Brickworks (1904-c 1925) and the Coleford Brick & Tile Co works (1936-present) (Pope and Karau 1992, 251-256). One of the Tinplate Works buildings appears to have been retained until after the 3rd edition OS survey (1921), but this had been replaced by new buildings by the 4th edition (c 1960) survey. Hawkwell formed the most easterly works in the South Wales/Dean core area of the historic tinplate industry (a major factor in the survival of the late 18th and early 19th century iron industry of the Forest), but was relatively small and short-lived by national standards (Minchinton 1957, 29, 32, 77).

The standard work on the tinplate industry remains Minchinton 1957, which is entirely historically-based; more recent work (also historically- rather than archaeologically-based) has concentrated on the 17th and 18th century industry. No substantial published archaeological work is known to the present author, though I am currently involved as a consultant to ongoing excavation projects on late 18th-early 19th century tinplate-related sites at New Weir (Herefordshire) and Cobham Mill (Surrey). Tinplate was not specifically addressed in the 1990s MPP coverage of the Iron Industry, and no national or regional criteria for protection policies are known to exist. This situation does not reflect the manifest importance of tinplate manufacture in the development of the 17th-19th century iron industry, nor its regional importance to the Forest of Dean.
Inspection from the trackway indicates that all the current buildings on the Hawkwell site are recent, and extensive modern levelling and remodelling appears to have taken place. The potential for any standing-structure or earthwork survival therefore appear slight. The potential for below-ground survival should be evaluated in advance of any development; given the late date and short life of the works it is unlikely that remains of Schedulable quality will survive (insofar as any assessment can be made in the absence of any national framework), but any substantial and threatened archaeological deposits would merit full mitigation. Any surviving slag (or other process-residue) deposits would also merit archaeo-metallurgical examination.

I do not have the expertise to assess the importance of any below-ground survivals of the 20th century brick and tile works; an appropriate expert should be consulted if evaluation demonstrates the survival of substantial kilns or other features.

**Broadmoor Chemical Works**

The works was built in c 1864, and closed in 1902. It was one of a number of works in the Forest producing chemicals by the distillation of wood; the wood was charred in moveable retorts in coal-fuelled ovens, and the gaseous products condensed and processed to produce pyroligneous acid (an impure acetic acid), naphtha, and tar. The pyroligneous acid was normally reacted with lime to produce ‘sugar of lead’ (lead acetate). Detailed 1902 sale particulars confirm that this was the process used at Broadmoor (Hart 1971, 350-353). The 1st and 2nd OS editions show the layout and development of the site during its use, and its later physical history can be traced on later OS editions.

A brief site visit indicated that much of the boundary wall of the site survives. This wall (especially its inner face) will retain substantial evidence of the buildings ranged against it. Two small buildings survive externally intact on the S side; information from the owner indicates that these housed a stables and a smithy, seemingly well-preserved internally. If these internal fittings are of 19th century date (as implied by Hart (1971, 353)) they will be of interest in their own right, as well as survivals of the wood-chemicals industry. Much of the remainder of the site is occupied by temporary structures and coal bunkers, resting on earlier floor or yard surfaces; it is likely that below-ground survival of the chemical works is good.

The MPP coverage of the Chemical Industries did not proceed beyond Step 1 (Cranstone and Rimmington 2000; 49-51 for wood-based chemicals). In terms of policies for statutory protection, this identified that: ‘Step 2 should initially consider all sites which can be identified as having any upstanding remains or good prospects for below-ground stratigraphy; depending on the numbers identified, a more rigorous desk-based selection from this site list may or may not be required in order to produce a realistic Step 3 sample. The aim of the selection procedure for protection should be a small sample of sites covering the chronological, regional and typological range of the industry. Sites may be important as representing technical advances and, equally, as demonstrating common practice’. The Broadmoor Chemical Works would undoubtedly qualify for assessment under this policy; its importance in a national context cannot be fully assessed in the absence of Step 3 MPP coverage. Contemporary references to ‘sugar of lead’ production indicate that contamination with lead is very likely to be present, and other toxic or carcinogenic contamination may also be present; appropriate Health and Safety advice should be obtained before any on-site investigation.

**Newtown**

The area comprises a small late 19th century development of industrial housing, with outhouses and yards, largely well-preserved; while not of exceptional quality, it undoubtedly has its own ‘sense of place’ and forms a distinct element in the townscape of Cinderford. It may have potential for Conservation Area designation (possibly extending to parts of Steam Mills, though this appears to have been a historically-separate development).
Haywood engine works

External examination indicates the survival of substantial elements of late 19th-early 20th century fabric, in a much-altered building. This includes substantial beams along the internal wall-heads (visible in the W elevation), possibly the mountings for an overhead travelling crane.

Engineering works were not covered in the MPP programme, but a SHIERS (the intended replacement for MPP) report has been commissioned by English Heritage; this is currently incomplete and it has not been possible to see a draft (K Falconer, pers. com.). On present evidence the Haywood works is unlikely to qualify for statutory protection, but should certainly merit building recording and below-ground evaluation/excavation in the event of redevelopment.

Steam Mills flour mill

The works is not shown on the 1856 map (Sopwith 1856), but the surviving building appears to be that shown on the 1st edition OS (1878), and presumably gave its name to the settlement. Despite the considerable attention in the literature to watermills and windmills, 19th century steam-powered milling has received relatively little attention; Jones (1996, 90-92, 311), Palmer and Neaverson (1994, 19-27), and Trinder (1993, 121-5) contain brief syntheses, and Cresy (1865, 1046-9) illustrates the layout and machinery of a mid-19th century mill. Steam-powered milling using millstones was rapidly replaced from the 1880s by the very much more complex and power-hungry roller-milling process, in much larger mills. The Steam Mills building is almost certainly a steam-powered millstone mill rather than a roller mill; it is of some architectural quality, and should be considered for Listing under the normal architectural criteria.

Dam Green

The placename probably derives from a 17th century dam which, together with a second dam at Cinderford Bridge, formed a remarkably-extensive water-storage system for Soudley blast furnace; the dam was later re-used as the embankment for the Churchway branch of the Forest of Dean tramroad (Hart 1971, 40; Ian Standing pers. com.). A map of c 1710 (Hart 1995, 206-7) shows the pool as [illegible] Old Green Upper Dam', just SW of Broadmoor and seemingly within the study area near Dam Green on the current OS map base. However the 1856 map shows what is probably the same pool, retained by a tramway, just outside the study area to the E of its extreme S end and in an area seemingly destroyed by modern development. If the dam should lie within (or extend into) the study area, a 17th century dam re-used as a later tramway would be of undoubted archaeological interest; any waterlogged sediments surviving within the former pool would also be of potential palaeo-environmental value.

Haywood sough

A substantial coal working drained by a sough was opened by John Wade (the State administrator of Dean during the Commonwealth) in c 1656 (Hart 1995, 146-7); the sough allowed year-round working, and this was an early example of (relatively) highly-capitalised coal mining into Dean, and perhaps an unusual example nationally of State-controlled coal mining. The sough appears to have been driven into the rising ground east of Broadmoor. The workings and associated surface features were probably outside the study area, but could extend into its eastern edge in the Broadmoor/Steam Mills area. ‘Colepits’ were certainly present within this part of the study area in c 1710 (Hart 1995, 206-7), though these may or may not relate to the 17th century workings, and much of their area has probably been destroyed by recent opencasting. Any surviving surface or underground features (especially of the mid-17th century mining) would be of substantial importance.
The Delves

The 1856 map indicates that a series of enclosures called ‘the Delves’ extended into the NW part of the study area, from Northern United to near Hawkwell Colliery (in later terms), forming a WSW-ENE strip along the outcrops of the Supra-Pennant seams. They are documented as ‘the Cole delves’ in 1662, as one of a series of land-parcels recommended (reluctantly) for coppice enclosure; the reference seems to be as a placename, referring to former rather than current mining, and this usage implies that the area had been distinctive within the Forest as a major tract of coal mining. By 1678 the area was occupied by 20-year-old dispersed birch and some beech (Hart 1995, 152, 166). The western part of The Delves (outside the study area) contains substantial earthwork remains of small-scale coal working (Youles 2004). It is not known whether similar earthwork features survive within the Hawkwell Inclosure, but below-ground and underground remains of Medieval to early Post-Medieval coal mining are likely to be present beneath both the Hawkwell and Northern United areas. It should be noted (here, in the Haywood/Broadmoor area, and potentially elsewhere) that shallow underground workings are very much under threat from modern deep groundworks as well as from mineral extraction, and have considerable archaeological potential for the survival of wooden artefacts and leather (and other) clothing as well as for their importance as mine workings (Hartley1994).

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