THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Ports and Harbours in North-East Wales

INTERIM PROJECT REPORT

CPAT Report No 769

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February 2006

Report for Cadw

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cover photograph: Queensferry Quay. Photo CPAT 2079-023

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1 INTRODUCTION

1.1 Historic ports and harbours have played an important role in Welsh history, although their nature and extent is often not well understood. Many important sites have considerable potential for archaeological remains, whether upstanding, buried or submerged, and these are becoming increasingly threatened by development. The present study has therefore been designed to provide a detailed assessment of this important archaeological resource in order to improve our understanding of ports and harbours, their development, significance and potential, providing a baseline from which to develop future management strategies.

1.2 The study follows the general format adopted by GGAT for Urban Waterfronts in south-east Wales (Howell and Dunning 2004) and was funded by Cadw during the 2005/06 financial year (Project No. 1264).

1.3 The project is being undertaken in two phases, with this report presenting the results of a scoping study for the whole of north-east Wales, together with detailed case studies of ports along the River Dee New Cut. The second phase will continue the case studies to include the remaining ports within the region.

1.4 The north-east Wales coast, and the Dee Estuary in particular, has a rich concentration of small ports and harbours which are important to our understanding of communications, trade and industry in this region. The project includes a variety of ports and quays, including the medieval ports associated with Rhuddlan and Flint, those harbours listed in *Welsh Port Books 1550-1603* (Lewis 1927), and those which developed during the 18th and 19th centuries following the industrialisation of the Dee Estuary hinterland, most of which are no longer active. Also included, on the basis of their archaeological potential, are the conjectured Roman ports at Prestatyn and Flint.

2 METHODOLOGY

2.1 The scoping study comprised an initial trawl of the Historic Environment Record (HER) and National Monument Record (NMR) for the study area, which were critically examined and enhanced to produce a project database, identifying all recorded potential ports, harbours and their associated structures.

2.2 A rapid study undertaken for the Dee Estuary Historic Landscape (Jones 1998), with funding from Cadw, identified over 50 recorded maritime sites along the north-east Wales coast, ranging from ports such as Connah's Quay and Mostyn, to individual landing stages, jetties, slipways, wrecks and former shipyards. One of the recommendations from the study was that more detailed studies should be undertaken for all of the ports and harbours with a view to producing management strategies to ensure their future preservation (Jones 1998, 36).

2.3 A review of the existing HER and NMR identified 13 ports, harbours and quays which form the basis of the present study; these are from west to east: Rhuddlan, Foryd, Prestatyn, Talacre, Mostyn, Llannerch-y-mor, Greenfield, Bettisfield, Bagillt, Flint, Connah's Quay, Queensferry and Sandycroft (Fig. 1).

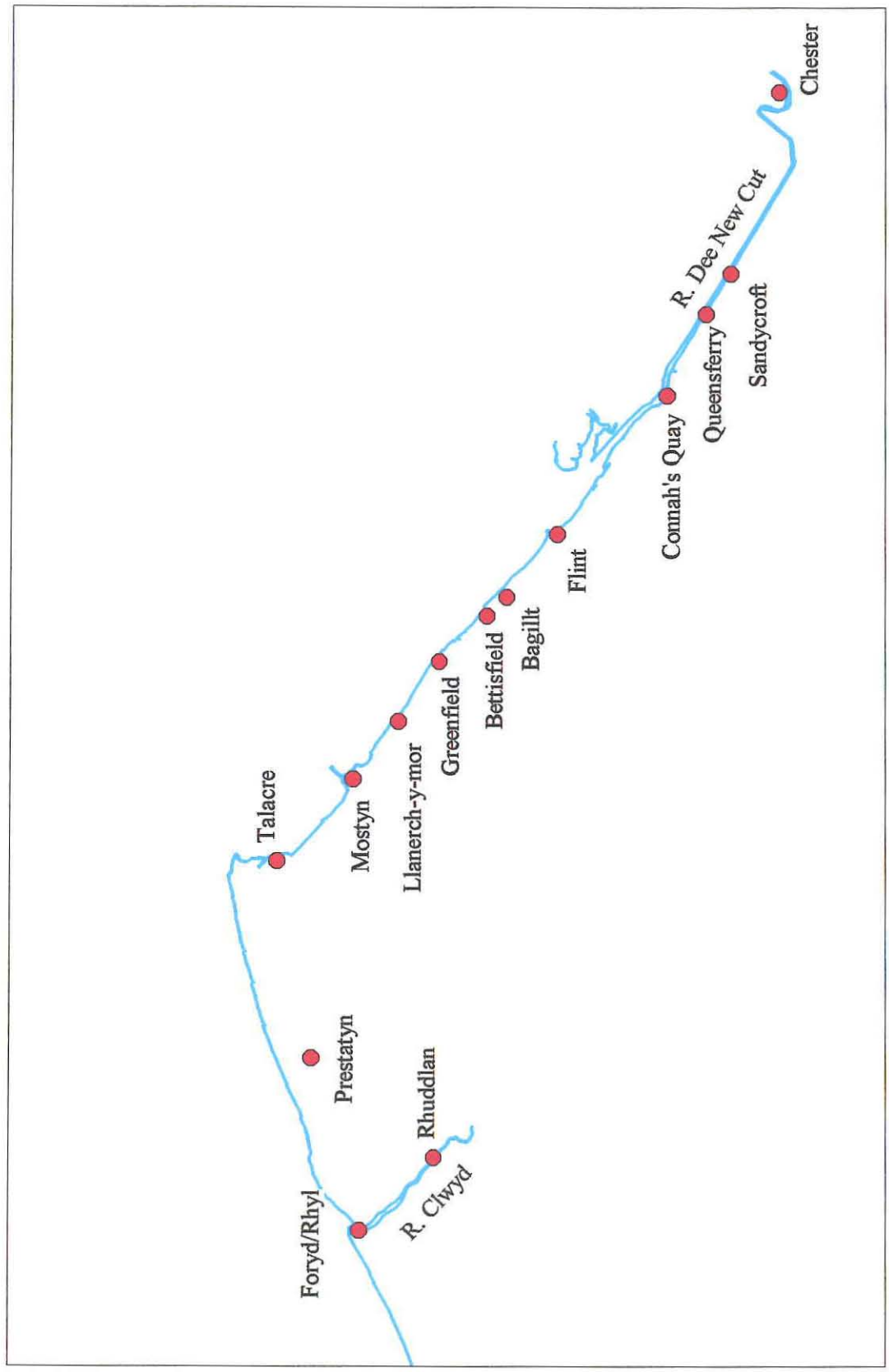

Fig. 1 Ports and Harbours of North-east Wales

2.4 Detailed case studies were then undertaken for the main ports of the Dee Estuary New Cut, comprising Connah's Quay, Queensferry and Sandycroft. Initially, a desk-based study was undertaken to investigate readily available cartographic, photographic, pictorial and documentary sources, with particular emphasis on mapping the development of the ports and harbours, together with changes in coastline and river courses. Repositories consulted included the following: the Flintshire Record Office (FRO), Hawarden; the National Library of Wales (NLW), Aberystwyth; and the Cheshire Record Office (CRO), Chester. Rapid field visits then assessed the form, condition and significance of each site and its constituent parts. Recording consisted of a brief description, map annotation and digital photography as appropriate. The results have been used to enhance the HER, including the creation of new records.

2.5 The results from the detailed studies have been used to present a history of each port, its development, significance, potential and management recommendations. In addition, a section has been included summarising the minor wharves along the River Dee. Full use was made of digital mapping based on information from the HER and Ordnance Survey digital data using Mapinfo 7.8 Geographical Information System (GIS), together with digital plotting of historic maps using AutoCAD to rectify those sources which were not metrically accurate. This has enabled a map regression exercise to be undertaken for each port, identifying its extent, components, survival and potential. The illustrations within this report were compiled using geo-registered scanned images of the Ordnance Survey 1st and 2nd edition maps, digitised and rectified tracings of tithe surveys, and the modern Ordnance Survey digital data.

2.6 During the course of the fieldwork, and subsequently, a judgement was made on whether to recommend individual sites for scheduling, on the basis of the National Assembly's criteria for scheduling ancient monuments (*Planning and the Historic Environment: Archaeology*, Welsh Office Circular 60/96, 5 December 1996, Annex C).

3 OVERVIEW

3.1 There is ample evidence to suggest that the Welsh coast has been an important resource since prehistoric times. However, the present study focuses not on the use of the coast, but on the growth along it of ports harbours and quays which are assumed to have developed from the Roman period onwards.

3.2 Although there is no direct evidence for Roman ports within the study area, it is clear that the River Dee in particular was a significant waterway during the period, providing maritime access to Chester. The excavations undertaken at Prestatyn and Flint have, however, given rise to the suggestion that both settlements may have been associated with nearby ports. In the case of Prestatyn, excavations have produced evidence for occupation from the 1st or 2nd century BC until the late 3rd or 4th century AD, including bronze workshops and a bath-house. The site lies 1.8km inland along the Prestatyn Gutter, and it has been suggested that this may have formed a harbour around which the settlement developed (Blockley 1989, 223-4). At Pentre Ffwrndan, near Flint, an important Roman settlement and industrial area has been identified which is assumed to be associated with the lead trade, and possibly with an adjacent port on the Dee Estuary (O'Leary 1989).

3.3 During the medieval period the construction of the Edwardian castle at Flint from 1277 and the founding of the adjacent borough depended heavily on the use of the river as a means of transport, and there is evidence that both the castle and town had their own quays (Jones 2002). Indeed, the castle could still be reached by sizeable vessels as late as the mid-19th century (Soulsby 1983, 135).

At Rhuddlan too, Edward founded a castle and borough in the same year as Flint, the importance of coastal access being clearly demonstrated by the cutting of a new channel for the River Clwyd through marshland to the east of its original course. Unlike Flint, however, Rhuddlan was already an established settlement, located at the lowest fording point of the river and the highest point reached by tidal waters. Excavations have revealed evidence of occupation here from the Mesolithic through to the Romano-British period, although it is the medieval settlement which primarily concerns us here. Although it has been suggested that Rhuddlan is the site of the Anglo-Saxon *burh* of *Cledemutha*, recorded in the Anglo-Saxon Chronicle of 921, this has yet to be verified by archaeological discoveries. In 1016, however, a stronghold was constructed here by Llywelyn ap Seisyllt and this was rebuilt in 1073 along with the establishment of a small borough (Soulsby 1983, 226-231).

3.4 A summary of the Elizabethan ports in 1561/2 is provided in *Anglia Wallia* (Anon 1911, 432) which records the following for Denbighshire and Flintshire respectively:

> 'Ffrom Conwey vi miles to Careckwymon a small creke ffrom thense vi miles to Rudlan a barred haven and a good Creke where is a noble Castell of ye Kings and well kept'.
>
> 'Ffrom Rudlan to Fflynte xvi myles a small towne with a fayer castell having a creke for small boats ffrom thens iiii myles to Moston a small creke standing in a baye to no purpose. From thense to Penylake vi miles a creke for smalle boats of no value. Here is to be noted that when the fishing of the heringe endeth in South Wales the it begynneth in North Wales and a grete trade resorteth therefore unto this Coaste for the ffishing endureth to Candlemas. Ffrom Penylake to Chester xvi myles up the Chanell and between Fflynte and Chester is but v miles ridyng over the sands at low water'.

3.5 The *Welsh Port Books 1550-1603* (Lewis, 1927) also provide a valuable source of information on the nature of post-medieval ports in the area, which includes the following entry for Flintshire in 1566:

> 'as for ports, crekes, havens and landing places there be non within the said countie of Fflynt for shippes or vessels to lande unto or to remayne or stay in except only our creke called the *Welsh Lake* which as we are perfectly informed is able to receive shippe with course and recourse of one hundreth tones and at full tyde somewhat more and there be other smale crekes able to receive barges and botes. The names whereof are theis. *Wepra poole*, *Picton poole*, and *y Vorryd* unto which crekes there be no havens nor habitacons adoinyng saving unto said *Vorryd* adioneth the towne of Rudlan'.
>
> 'we have appointed our deputies for the said foure creekes – that is to say for *Wepra poole*, Thomas ap Hoell ap Ieuan and Lewis ap Ieuan ap David ap Madock gent. For the *Welshe Lake* Thomas pennant and Nicholas pennant gent; for *Picton poole* William Gruffuth and Benet Thomas gent, and for *Vorryd* pers Conwey and Jenkyn Conwey gent'.

3.6 A similar record for Denbighshire in 1578 records no landing places:

> 'there is not within the said county eny Landing place or recourse for charging or discharging of marchaundise or other repair of shippes'.

3.7 The lack of recorded landing places in Denbighshire should not, however, be taken to imply that coastal trade and activity were lacking. Instead, although the coastline of the county does not present any natural harbours, its beaches do offer ample places where small fishing or trading vessels can be drawn up onto the foreshore, and this is likely to have been the case at Abergele, Llanddulas and Llandrillo-yn-Rhos. The same is also true for stretches of the Flintshire coast and this is known to have been a feature of Ffynnongroyw, for example.

3.8 By the 15th century the Dee was already affected by silting and the earliest account of difficulties is a 'Royal Brief' in 1449 which assessed the City of Chester and proposed the construction of a quay at Neston for the transfer of cargoes into smaller vessels. A survey by Captain Andrew Yarranton in 1674, published in 1677 and entitled *England's Improvement by Sea and Land*, concluded that the river was so choked with sand that a vessel of twenty tons could not reach Chester. It proposed the construction of a new channel along the Flintshire shore to provide deep water navigation to Chester, which could save £1,000 a year in carriage of coals from Aston collieries to Chester (Lloyd 1967-8, 35). At this time the deep water channel followed the Cheshire shore, with the Flintshire shore largely consisting of the mudflats of Saltney Marsh. An Act of 1700 authorised the collection of dues on coal, lime and limestone to finance the construction of the new channel, although it was some time before the scheme commenced, by which time almost all shipping bound for Chester was forced to discharge cargoes at Parkgate, on the Wirral (Lewis & Thacker 2005, 84-7).

3.9 The River Dee New Cut, was eventually constructed in 1737, following the existing southern bank from Chester to Saltney and then, after a slight bend, a straight line to Golftyn along the Flintshire shore. A stone pier was built at Golftyn for the protection of vessels proceeding to and from Chester and waiting for a fair wind, and this formed the nucleus of what became the port of Connah's Quay (Lloyd 1967-8, 37-8).

3.10 The New Cut was responsible for the birth of Saltney, Sandycroft, Queensferry and Connah's Quay, affording easy water communication for the importation of materials to the hinterland and the export of coal and minerals to Chester, Ireland and as far as northern France and Spain (Lloyd 1967-8, 39).

3.11 There was a flourishing trade in coal to Ireland during the 18th century and it also formed a considerable export to the ports of north Wales, both from Mostyn and Bagillt and also the Hawarden area, which also shipped coal by river to Chester. The coal was sold to the ship owners on the riverside wharves, who were then responsible for shipping and resale (Rawson 1941, 127). The development of the Flintshire lead mines was also a significant factor in the growth of ports like Bagillt, Flint and Rhuddlan.

3.12 The development of the railway network from the mid-19th century brought further expansion for most of the ports, particularly Connah's Quay and Mostyn. During the same period, however, Rhuddlan began to decline due to the silting of the River Clwyd, which in turn led to the growth of Foryd. With the exception of Rhuddlan, the ports were at their peak during the late 19th and early 20th centuries as the industries on which they had been founded also prospered. It was the subsequent decline in the local industries of coal, lead, brick, engineering and shipbuilding that marked the end for all of the smaller ports, so that today only Mostyn has survived as a major port, and indeed it has seen recent expansion. Connah's Quay also remains active, although a shadow of its former self, while the other small ports have all but disappeared.

4 CONNAH'S QUAY AND WEPRE

Location

4.1 Connah's Quay is located on the south-western bank of the River Dee at the north-western end of the New Cut, 12km from Chester (SJ 293699). Wepre lies *c.* 0.8km to the east of Connah's Quay, having developed at the point at which the Wepre Brook joins the Dee as the Wepre Gutter.

Historical background

4.2 Both Wepre and Golftyn were recorded at Domesday (Morris 1978, 268d) and formed the only nucleated settlements in the area until the development of Connah's Quay in the 18th century (Jones 1998, 10).

4.3 The Wepre Gutter evidently formed a haven for small vessels and 'Wepra Poole' is listed in the Welsh Port Book for 1566 as being able to receive barges and boats. The deputies then appointed for the haven are recorded as Thomas ap Hoell ap Ieuan and Lewis ap Ieuan ap David ap Madock (Lewis 1927, 306-7).

4.4 Following the completion of the New Cut in 1737 a small port developed at the seaward end of the channel at Golftyn, where a breakwater had been constructed to shelter boats waiting for favourable winds and tide to navigate to and from Chester. This was recorded by Thomas Pennant around 1760 in the following terms: 'of late years a very handsome pier has been built by the River Dee Company in the township of Wepre, jutting into the channel for the protection of ships bound to and from Chester'. The port is first depicted on a map of the River Dee by Burdett and Boydell in 1770-1, and named as New Quay, and although the name Connah's Quay does not appear until the Ordnance Survey Surveyors' Drawing in 1834, it has been claimed that it was in use from at least 1784 (Hawkes 1989).

4.5 It has been suggested that the eponymous Connah was an Irishman, the landlord of the Quay House inn, and a smuggler. He has also been variously described as a ship's chandler, harbour master, captain, merchant, coal company merchant, distillers' agent and a Buckley earthenware agent. There are records of Connahs living in Hawarden parish from the 16th century, but William and Margaret Connah were the first to be recorded in Wepre and Golftyn in 1704. Their grandson James married Grace, the daughter of Jonathan Catherall, the Buckley earthenware manufacturer, in 1757 and one of their sons, George, married Ann, daughter of William Piercey, of Wepra Hall (Hawkes 1989). It is uncertain, however, which family member gave their name to the port.

4.6 Around 1740 a wooden tramway was constructed from Latchcaft Colliery to the Dee at Wepre. The tramway lay to the south-east of the Wepre Gutter and presumably ended at a wharf on the New Cut, replacing the gutter which was deemed to be too unreliable for shipping (Boyd 1991, 15). The course across the salt marsh to the Dee is depicted on a map of around 1750 (CRO D5120/1).

4.7 At the time of the tithe survey for Northop parish in 1839 (Fig. 5), a number of buildings were depicted close to the waterfront. A rectangular structure was depicted extending in front of the public house (e23) as far as the main channel, and this may be the quay as it lies in the same position as the dockside later depicted by the Ordnance Survey. The public house was at that time owned by Bate Edwards and leased to John Jones. Two houses adjacent to the public house (e24 and e25) were each recorded as a 'house and garden near the quay' and to the south-east a row of four houses (e29) was also recorded as being near the quay.

4.8 One of the reasons why Connah's Quay developed as such a significant port, rather than those higher up the Dee, was that it was far less reliant on favourable tides and winds. A Committee of Enquiry into the building of the Buckley Railway in 1860 spent much of its time considering the relative merits of Connah's Quay over King's Ferry as the terminal for the railway. It was noted that when winds and tides were contrary it could take anything from 24 hours to 9 or 10

days to sail the two miles upstream to King's Ferry, in addition to which the water there was two to three feet shallower (Boyd 1991, 25-7).

4.9 Much of the development of facilities at Connah's Quay was directly linked to the various companies who operated the tramway, and later the railway, which terminated at the quay. The earliest of these was the Irish Coal Company which began building the Wepre Iron Road in 1799 from collieries at Northop. This was later owned by the Northop Hall and Dublin Coal Company Ltd, and was effectively replaced by the Buckley Railway in 1862. The Act of Parliament permitting the construction of the railway also allowed for improvements to the docks, although these were not undertaken until after the line was taken over by the Wrexham, Mold and Connah's Quay Railway (WMCQR) in 1866, with works on a new pier and embankment eventually starting in 1870 and taking two years to complete (Boyd 1991, 35-40; 66-7; 151-2; 158). In fact, the plans had originally been far more ambitious for in 1865 there were proposals to build two large docks on former marshland to the east of the existing port, as well as diverting the course of the River Dee, and again in 1881-2 there were similar proposals for a single large dock, neither of which ever materialised (FRO QS/DR/111; QS/DR/186). The construction of Hawarden Bridge across the River Dee in 1889 stimulated further improvements to the docks (Baughan 1991, 58-9) as by this time the local brick and coal trade had taken up all of the available port space. The wharfage was extended along the river to the east of the existing facilities by the WMCQR, to increase capacity and make Connah's Quay the port for Wrexham and allow the export of salt in direct competition with Weston Point on the Mersey (FRO D/HA/1223).

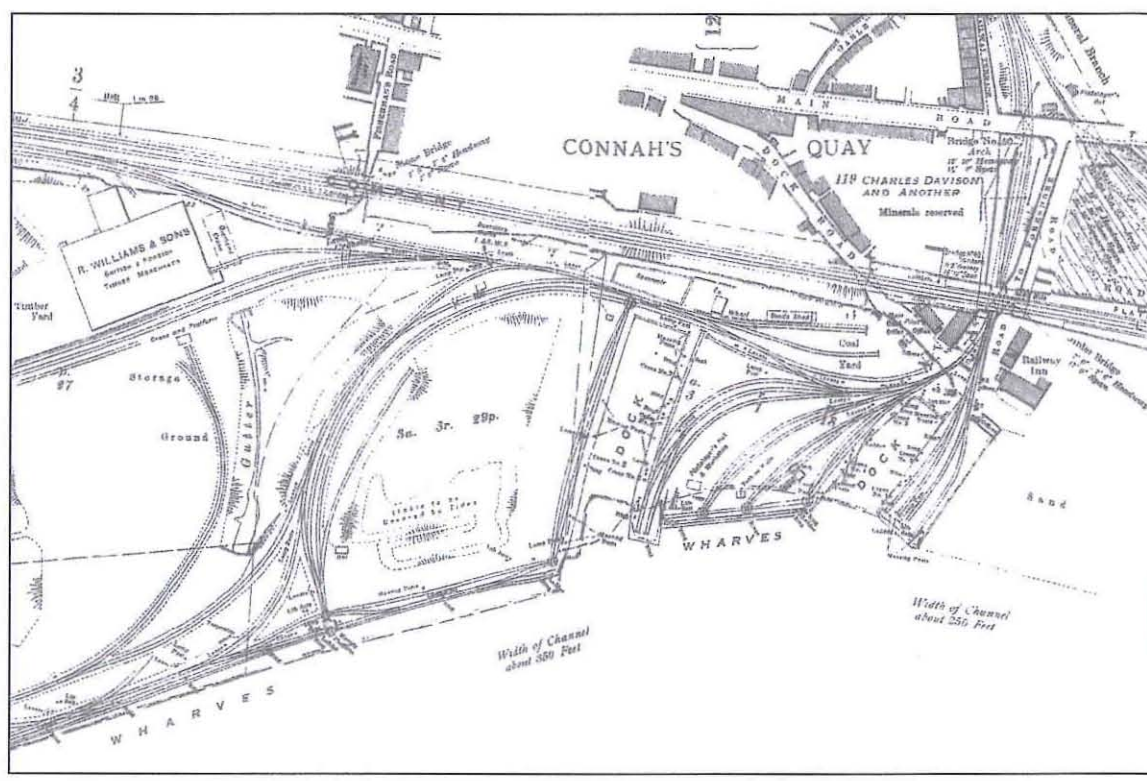

Fig. 2 Plan of Connah's Quay docks by Great Central Railways *c.* 1900

4.10 Although Connah's Quay was primarily an industrial port, from the mid 1860s it also saw a degree of passenger traffic with the advent of rail excursions incorporating a trip by steamer to resorts such as Llandudno (Boyd 1991, 138). There was also a passenger service along the river to and from Chester.

4.11 The most influential shipping agent on Deeside was Coppacks, who were based at Connah's Quay and remained in business under various names from 1860 until 1972. By the 1880s the

main exports from the docks were still coal and bricks, but also included chemicals and fertilizers, with the main import being timber, including pit props, from Norway and the Baltic. In 1884 ships were recorded leaving the port for Barrow, Cardigan, Ireland, France, Germany, Nova Scotia and Norway (FRO: D/DM/434/197).

4.12 A report by the Port Facilities Committee in 1929 (FRO DC/381) recorded that the wharfages were then owned by the London and North Eastern Railway (LNER) and owing to neglect were rapidly becoming derelict, while and the channel was becoming shallower due to silting. Prior to 1914 the port had been very busy exporting bricks, coal, pitch, machinery and superphosphates, with imports of timber from Canada, Norway, Ireland and Scotland, as well as iron ore, pig iron, silica and scrap iron, amongst other commodities. The neglect appeared to have set in after the Wrexham, Mold and Connah's Quay Railway had been taken over by the Great Central Railway around 1897, and the LNER were proposing to be relieved of their obligation to maintain the docks and wharfages.

4.13 A survey of the condition of the docks in 1938, undertaken by the LNER (FRO D/DM/274/11), indicated that the original dock was silted, while the second dock, of timber construction, was also silted and dilapidated. The adjacent 400ft of timber wharfage had been strengthened in 1931 and remained in constant use, while the south-easterly section of wharfage (600ft in length), had not been used for many years and required repair and strengthening.

Shipbuilding and industry

4.14 The firm of Ferguson, MacCallum and Baird started building ships at Flint in 1840, but the yard was take over by the expansion of the chemical works and the business transferred to Connah's Quay in 1858, where it remained as Ferguson and Baird until its closure in 1916. The company built only wooden ships, which eventually led to its demise. The yard was reopened in 1920 by J Crichton and Co. Ltd, who rebuilt the slipway in 1923 and installed a heavy winch. Crichtons built metal ships, the steel, chains and anchors for which came from the Netherton Steelworks in Dudley, while importing their timber from Canada and Scandinavia. From around 1913 Crichtons also had a shipyard at Saltney. There was also a smaller shipyard at Connah's Quay next to the Old Quay House on Dock Road, operated by William Butler, specialising in lifeboats, including those for the Mauritania (Bates 1980, 58).

4.15 The presence of the port led to a number of industries being attracted to the area, it providing both the means to import raw materials and to export their produce. Around 1850 a chemical works opened on reclaimed land to the east of the docks, manufacturing soda ash and sulphuric and muriatic acids. This closed in 1887 and was reopened by R A Munro and Co, a Glasgow firm, as the Organic Ammonia Co., manufacturing fertilizer from scrap leather and other waste materials. A second chemical works opened along the west side of the Wepre Gutter, manufacturing bleaching powders, soda crystals and bicarbonate of soda. In 1900 this became the Welsh Silica Co., producing fine silica powder (Bates 1980).

4.16 The trade in imported timber has already been mentioned, and the timber yard of R Williams and Sons developed on the eastern side of the docks, close to the railway.

The waterfront (Figs 5-7)

4.17 Prior to the construction of the New Cut vessels used the Wepre Gutter as a small natural harbour, although no documentary or cartographic evidence has come to light to suggest that this was augmented with any structures. Around 1740 this was replaced by the short-lived Latchcraft Tramway (PRN 37739), a colliery line terminating on the New Cut, presumably at a wharf or landing stage.

4.18 The port of Connah's Quay developed around a pier sometime after 1737, possibly the structure depicted on the tithe survey in 1839 and later identified as a wharf by the Ordnance Survey (PRN 37826). During the 19th century the quay expanded in stages on land reclaimed from the salt marsh, mostly in connection with developments to the railway network, and it reached its

peak around the time that the Ordnance Survey 2nd edition survey was published in 1899. By this time a stone-built dock (PRN 34230) had been built along the eastern side of the original wharf, with a second, timber-built dock (PRN 34231) added further to the east, each with four cranes. A small reservoir (PRN 83021) lay between the second dock and the Chester to Holyhead Railway, presumably used for flushing the dock. A wharf (PRN 83019) occupied the river frontage between the docks (Fig. 3) with a landing stage (PRN 83020) at its east end, both built of timber and projecting into the River Dee. The dock-side area was largely occupied by a network of railway sidings which used numerous small turntables to manoeuvre the wagons. At one time the area between the docks was used as the iron ore stage, while the area between the reservoir and Dock Road was the coal yard, which had a rail link to a coal stage with a loading chute (PRN 83022). During the mid 19th century there was a small landing stage (PRN 37825) to the east of the docks which may have been associated with the nearby chemical works (PRN 37381). Following further land reclamation this was replaced by a new wharfage (PRN 83023) which extended for 300m along the riverside. Both of the main wharfages had steam cranes on rails for loading and unloading cargoes. Part of the chemical works was subsequently taken over by the timber yard of Williams and Son, later depicted by the Ordnance Survey in 1912 as a wagon works and saw mill (PRN 83024).

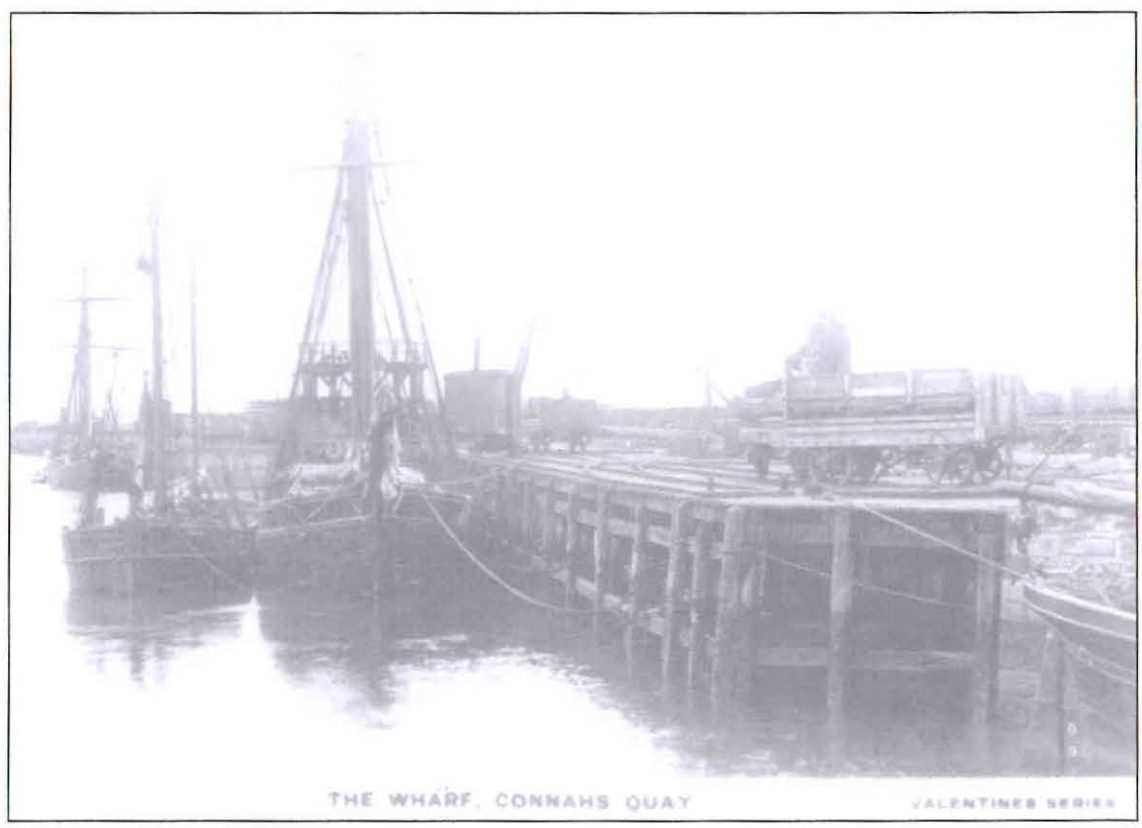

Fig. 3 Connah's Quay docks *c.* 1900 showing timber wharfage (PRN 83019) between Docks I and II. Note the steam crane on the dockside and the wagon on a turntable.
Reproduced with the permission of Flintshire Record Office, Photo PR/15/51.

4.19 The area to the west of the docks was occupied by shipyards, principally that of Ferguson and Baird, later J Crichton and Co (PRN 39812, PRN 83014). There were two slipways (PRNs 83015 and 83017), each with its own winch, as well as a small wharf (PRN 37826) at the western end of the site.

Archaeological potential (Fig. 7)

4.20 Sadly, Connah's Quay today bears little resemblance to the once thriving port. Fortunately, the original stone-revetted pier and wharfage (PRN 83018), together with the adjacent stone-lined dock (PRN 34231) and the Old Quay House (PRN 87972) still survive, although these are now the only substantially intact features associated with the port. The dock is partly silted, but is still in use by small boats, while the pier and wharf is now the site of the Sea Cadets' hut. The cast-iron bases of four cranes survive, two on either side of the dock, together with a number of iron mooring rings.

Fig. 4 Connah's Quay Dock I. Photo CPAT 2079-031

4.21 The second dock (PRN 34231) has been infilled, although its location can still be identified by a modern slipway, while the wharf between the two docks only survives as a row of posts projecting from the mud and visible at low water. All trace of the eastern wharfage (PRN 83023), extending beyond the second dock, has now been lost following extensive reconsolidation of the waterfront which includes a concrete revetment. This new waterfront is used as a mooring by a number of small fishing and pleasure craft. The areas between the two docks, and adjacent to the eastern wharfage, which were formerly occupied by railway sidings and storage yards, have largely been redeveloped and are now occupied by numerous small industrial units. The site of the shipyards is now occupied by an active timber yard and there are no obvious traces of the slipways and other associated structures.

4.22 Despite the extensive redevelopment of the quayside there is still significant archaeological potential in the area of the surviving dock and wharf. These features, together with the Old Quay House, have considerable historic significance as the last surviving remains of the port and every effort should be made to ensure that they do not suffer the same fate as the other quayside features. At present, they appear to be in relatively good condition, although their setting has been compromised by the encroachment of new development.

4.23 The survival of part of one timber wharf (PRN 83019) indicates the potential for other timber structures, or indeed the remains of vessels, to be preserved in the estuarine mud anywhere within the main river channel.

4.24 Although there is now no indication that the Wepre Gutter (PRN 83072) was once an important haven, until the opening of the New Cut in 1737 this was the only reliable anchorage along this part of the Flintshire shore. Consequently, the area around the gutter is considered to have high archaeological potential for associated features which may be buried and preserved by the river silts.

Fig. 5 Map regression for Connah's Quay

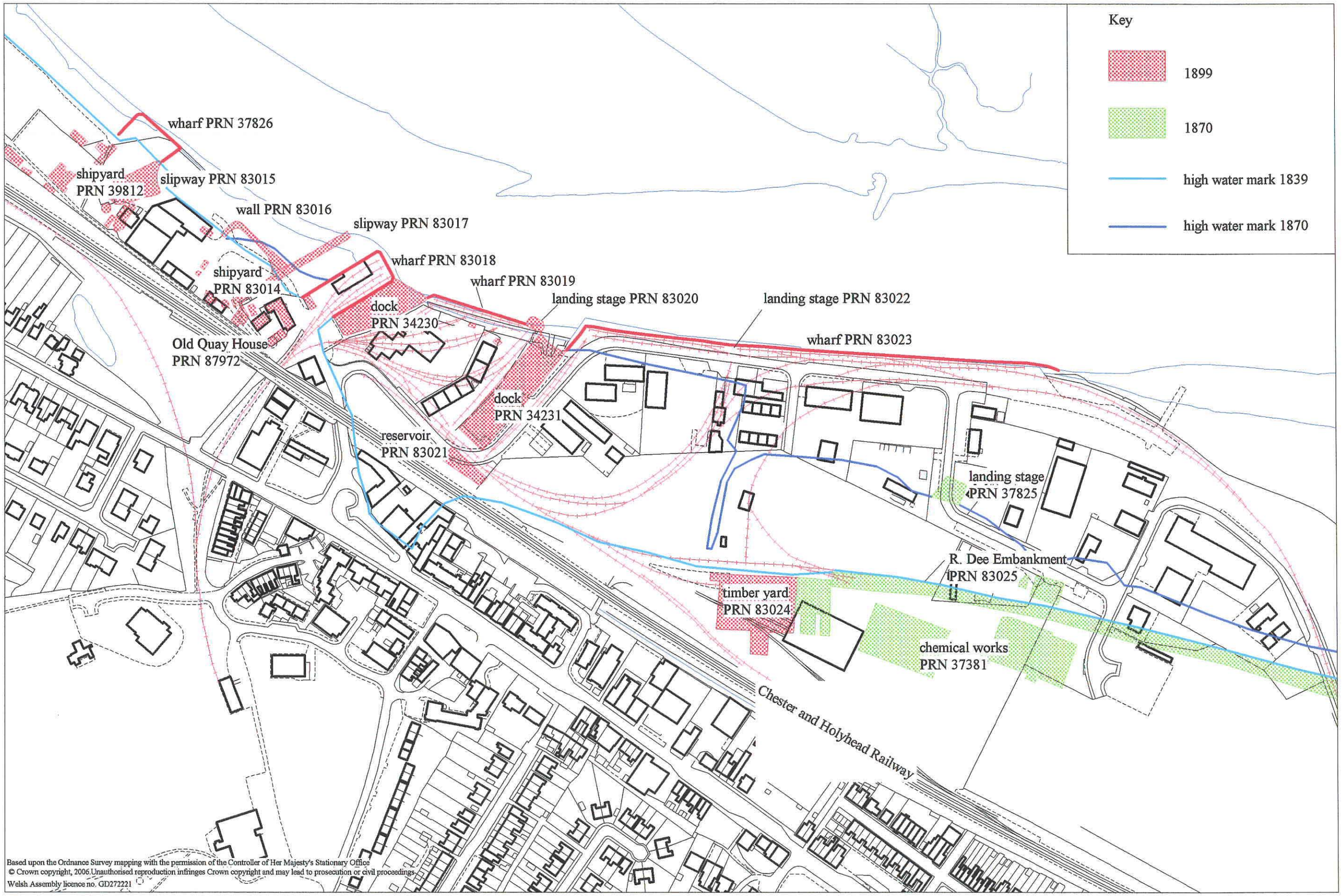

Fig. 6 Connah's Quay port related features, scale 1:2,500

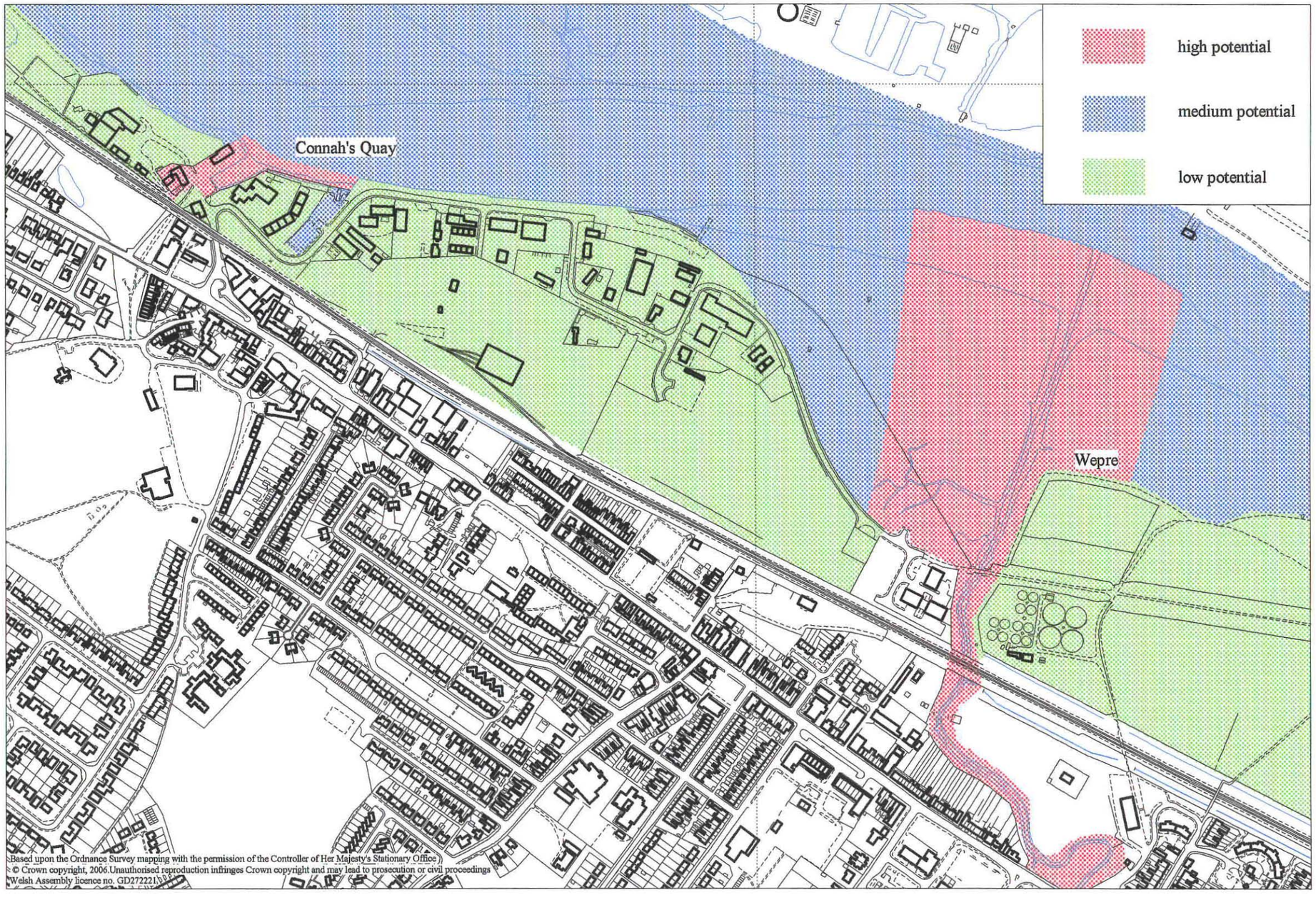

Fig. 7 Connah's Quay and Wepre archaeological potential, scale 1:5,000

5 QUEENSFERRY AND ASTON QUAY

Location

5.1 The modern settlement of Queensferry, which incorporates Aston Quay, is located on the south-western bank of the River Dee New Cut, 8.6km from Chester (SJ 324685).

Historical background

5.2 Under the Act of Parliament which permitted the construction of the New Cut, a ferry was to be provided to transport passengers, cattle and vehicles. This was originally known as Lower Ferry, but was renamed King's Ferry around 1750 in honour of George III, and in 1837 became Queen's Ferry, in honour of Queen Victoria. In the early days horse whims were used to power the ferry, later to be replaced by a ferry with a windlass capstan, operated by two men on board. By 1861 the ferry appears to have been mechanically operated with an engine house on the Queensferry side (FRO D/BC/627). In 1897 the ferry was replaced by the Victoria Jubilee Bridge, which had a telescopic action to allow shipping to pass, and this in turn was replaced by the present bridge in 1926 (FRO D/GL/95).

5.3 A quay developed at Lower, or King's Ferry, for the shipment of coal from about 1740 when the Mancot Tramway was built to link Big Mancot Colliery with the Dee at Mancot Mark. A 21-year lease had been granted to George Hope of Chester by the Glynnes of Hawarden Castle to mine coal at Mancot and he clearly intended to make full use of the newly improved navigation along the Dee. The route followed the western side of Mancot Lane and then over the marsh to a wooden jetty on the Dee. Around 1793 this was replaced by an iron plateway, built by Beriah Botfield of Old Park Furnaces, near Coalbrookdale (Boyd, 15-16).

5.4 Aston Quay, as it came to be known, expanded further following the construction of a second tramway, or more accurately a system of tramways, which extended from Pentrobin Colliery, Buckley. The various sections of the tramway had different names but are generally referred to as the Aston Tramroad. The south section was built by Rigby, the Hawarden Ironmaster, and Hancock, the Buckley brick manufacturer, after the formation of a partnership in 1792. The lower 1¼ miles was replaced by an iron plateway around 1799, which itself was superseded by the Aston Hall Colliery Railway (Boyd 1991, 19). Although the tramway system served a number of collieries and brickworks, not all of those in the area had access to the system and had to transport their produce to the quay by horse and cart. William Shepherd, of Ewloe Barn Brickworks, for example, had no tramway but nevertheless had his own wharf at King's Ferry to export his produce and import iron ore from Barrow (Boyd 1991, 25-7).

5.5 The Hawarden Tithe Survey of 1843 (Fig. 12) identifies the main wharfage (720) as belonging to the Dundas Estate, while a second wharf (737) to the west of the ferry was owned by the Glynnes of Hawarden Castle. The survey also identifies the tramway (714) and a coal yard (723).

5.6 Such was the amount of shipping using the quay that in 1842 a Sailers' Home was built near the chemical works. This was later converted into a non-conformist chapel and eventually demolished in 1949 (FRO D/GL/95).

5.7 An interesting circular was issued in February 1849 (FRO D/HA/582) with the obvious intention of increasing the amount of shipping using the quay:

> 'To Shippers, Merchants, Shipmasters and others frequenting the River Dee. The King's Ferry Wharf belonging to Sir Stephen Glynne Bart., and formerly occupied by the later Mr Charles Davison, is being put into an efficient state of repair and will be found a most commodious place for loading and discharging vessels on the Dee, being provided with an excellent crane store house and other conveniences'.

5.8 The circular also listed wharfage rates for a wide variety of commodities, including flour, sugar, barrels, soap, pig iron, castings, tallow and oil, wine and spirits, timber, slates, tin, alum, lead,

potatoes and various other agricultural produce.

5.9 A Committee of Enquiry into the building of the Buckley Railway in 1860 calculated that 32,000 tons of cargo had been handled by the Dundas wharf in 1859. A plan of the quay in 1861 (FRO D/BC/627; Fig. 8) identifying the property of Admiral Dundas shows the tramway entering through a weighing machine, with numerous branches diverging to various parts of the wharfage. The area around the main quay was occupied by Messrs Hancock & Co., with three coal stages and a further two to the west. To the east of the dock the wharves were occupied by Catherall, Davison & Co., Royle and the Patent Fuel Co. The approach to the ferry was shown with a horse whim and an engine house.

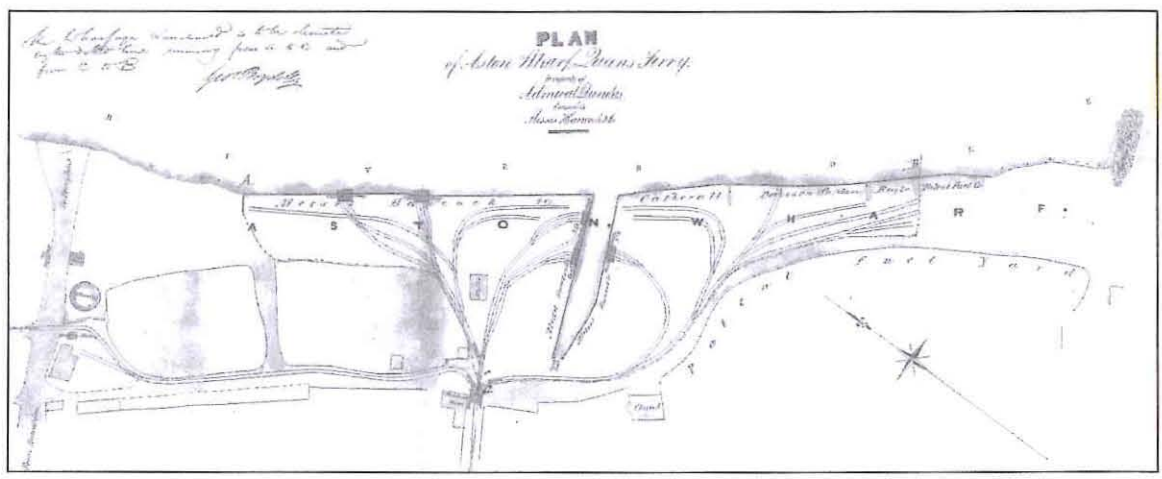

Fig. 8 1861 plan of Aston Quay. Reproduced with the permission of Flintshire Record Office (D/BC/627)

Shipbuilding and industry

5.10 Around 1885 Smith and Co. started building small iron vessels and barges on a site 250yds west of the ferry, later moving to a site adjacent to the small inlet further to the east. In 1892 'Reliance' was built by Messrs J Wilson and Co., and by 1894 the yard was operated by the Queensferry Shipbuilding and Engineering Co. It changed hands again in 1908/09, this time to Isaac J Abdella and Mitchell Ltd (Fig. 9), a company which had been formed in 1901 on the Thames and Severn Canal, near Stroud in Gloucestershire. The company concentrated on lighters and barges, but also made stern-wheel steamers, such as the 'Manoel Tomaz' in 1912, which was destined for Brazil, and the 'Broughton' which went to Nigeria. The yard closed in 1925, although the name continued with other short-lived firms into the 1930s (FRO D/DM/1036/1).

5.11 The development of the quay led to the founding of a number of industries in the area, which in turn increased the level of shipping. In 1781 a Mr Sharp, a button manufacturer in Chester, purchased newly enclosed land and erected what became known as the 'Chemistry'. Refuse from the Chester factory, including horn and bone, was sent to the new site which extracted Glauber's salt, sal-ammoniac and ivory-black, a type of bone charcoal (FRO D/GL/90). During the mid-19th century another chemical works, which was known locally as the 'Black Works', was started by Joseph Turner and Co. Ltd, who acquired the site of the Patent Steam Fuel Co. The works was later operated by Tar Distillers of Queensferry and then Midland Tar Distillers Ltd. The company initially produced printing and lithographic inks, paints, charcoal and coke founders dust and by 1900 was distilling tar and extracting Benzole and other oils, as well as pitch for road surfacing (Bates 1980, 45).

Fig. 9 Abdella and Mitchell's Shipyard in 1918. Reproduced with the permission of Flintshire Record Office (D/DM/1036/1 p.61)

The waterfront (Figs 11-12)

5.12 Following the construction of the River Dee New Cut a small settlement developed around the ferry site (PRN 34243). Further to the east the Mancot Tramway (PRN 37792) brought coal to the riverside, presumably to a wharf or landing stage, and by 1870 it terminated on a pier (PRN 83037) extending into the river.

5.13 In the late 18th century the Aston Tramway (PRN 87848) brought bricks and coal from the Buckley area and a new quay developed around a small inlet. A number of landing stages were built, each with a connecting branch of what later became the Aston Hall Colliery Railway. One landing stage (PRN 34241) to the west of the ferry belonged to the Glynnes of Hawarden Castle, while those close to Aston Quay itself were owned by the Dundas Estate, and the most easterly appears to have been associated with the nearby chemical works (PRN 83031).

5.14 The ferry was replaced by the Victoria Jubilee Bridge (PRN 87852) in 1897, crossing at the same point as the ferry. A new bridge was constructed in 1926 immediately upstream and all that now survives of the original structure are the stone abutments on either bank of the river (PRNs 34267-8).

Archaeological potential (Fig. 13)

5.15 The redevelopment of Queensferry during the late 20th century, and in particular the construction of the new road bridge, have had a detrimental effect on much of the port-related archaeology. In the main dockside area, originally owned by the Dundas Estate, the former quay (PRN 83031) is now silted and abandoned with no indication of its former significance or any trace of the shipyard (PRN 83030) which developed along its north-western side. Of the seven landing stages which once flanked this side of the river, only two have any significant remains (PRNs 34240 and 34255; Fig. 10), although some timbers survive of a third (PRN 83054). The line of the Mancot Tramway (PRN 37792) has been adopted by a road and the associated pier (PRN 83037) can now only be identified by a spread of rubble in the inter-tidal zone.

Fig. 10 Aston Quay landing stage (PRN 34240) with the new road bridge in the background. Photo CPAT 2079-018

5.16 Further downstream the site of the quay operated by the Glynnes of Hawarden Castle has fared rather better as no redevelopment has taken place. The base of a sandstone landing stage (PRN 83055) and the remains of the timber wharfage (PRN 34241) survive along the low watermark (Fig. 11), while the tramway embankment (PRN 87848), now partly adopted by a track and footpath, leads towards the river. There is also a World War II pillbox (PRN 34256) close to the landing stage.

5.17 There is now no trace of the ferry slipway (PRN 87850) which was presumably destroyed when the Victoria Jubilee Bridge (PRN 87852) was constructed, and two substantial stone abutments are all that remain of this bridge.

Fig. 11 Queensferry Quay and landing stage. Photo CPAT 2079-023

5.18 Despite the redevelopment there is still likely to be considerable archaeological potential in the undeveloped area around the main quay and what is left of the waterfront to the south-east. The area of the Glynnes' quay appears to have seen little disturbance since it was abandoned and there is therefore considerable potential for buried archaeological features associated with the quayside and tramway, as well as the remains of the landing stage and wharf along the river frontage.

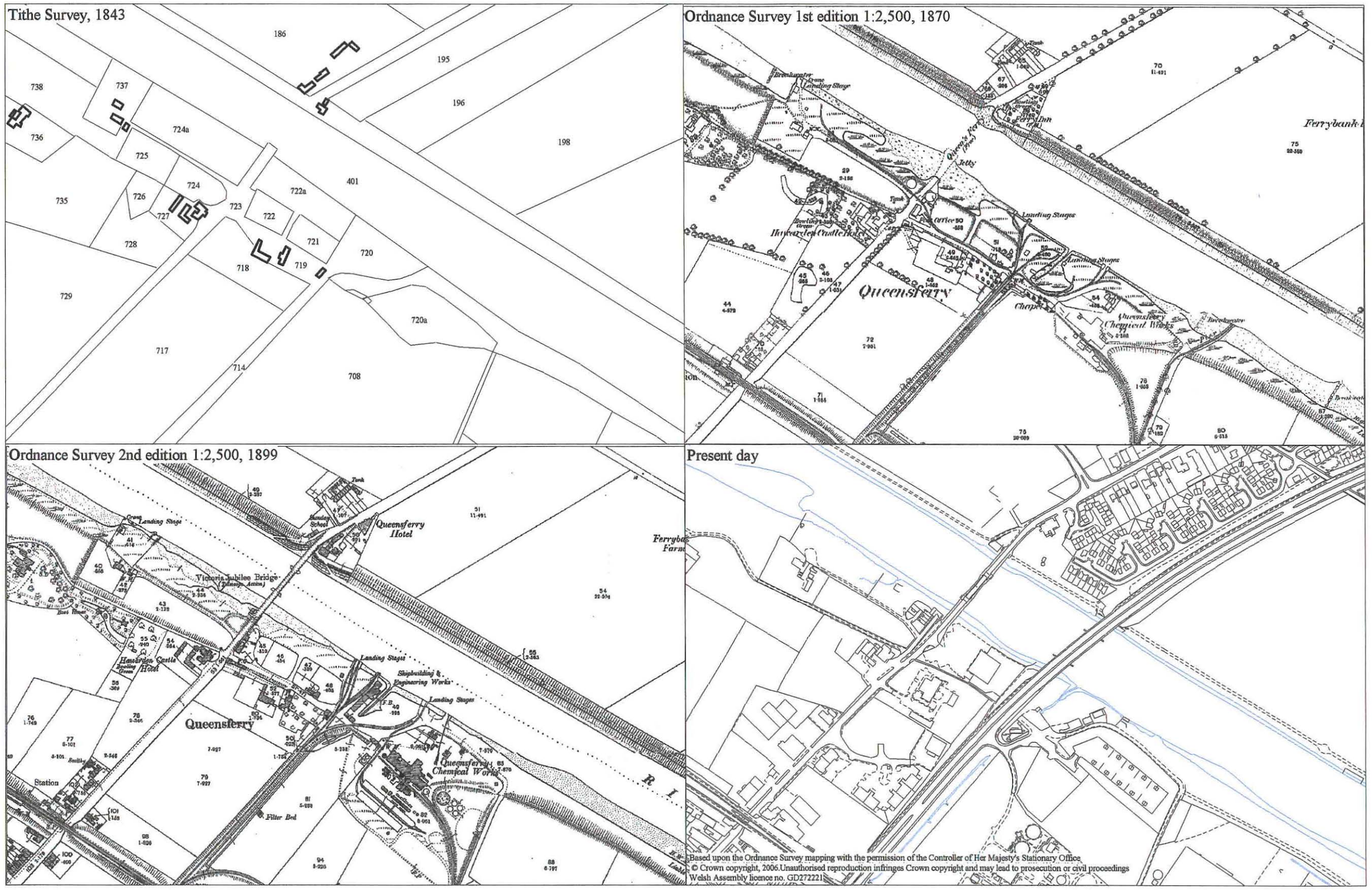

Fig. 12 Map regression for Queensferry and Aston Quay

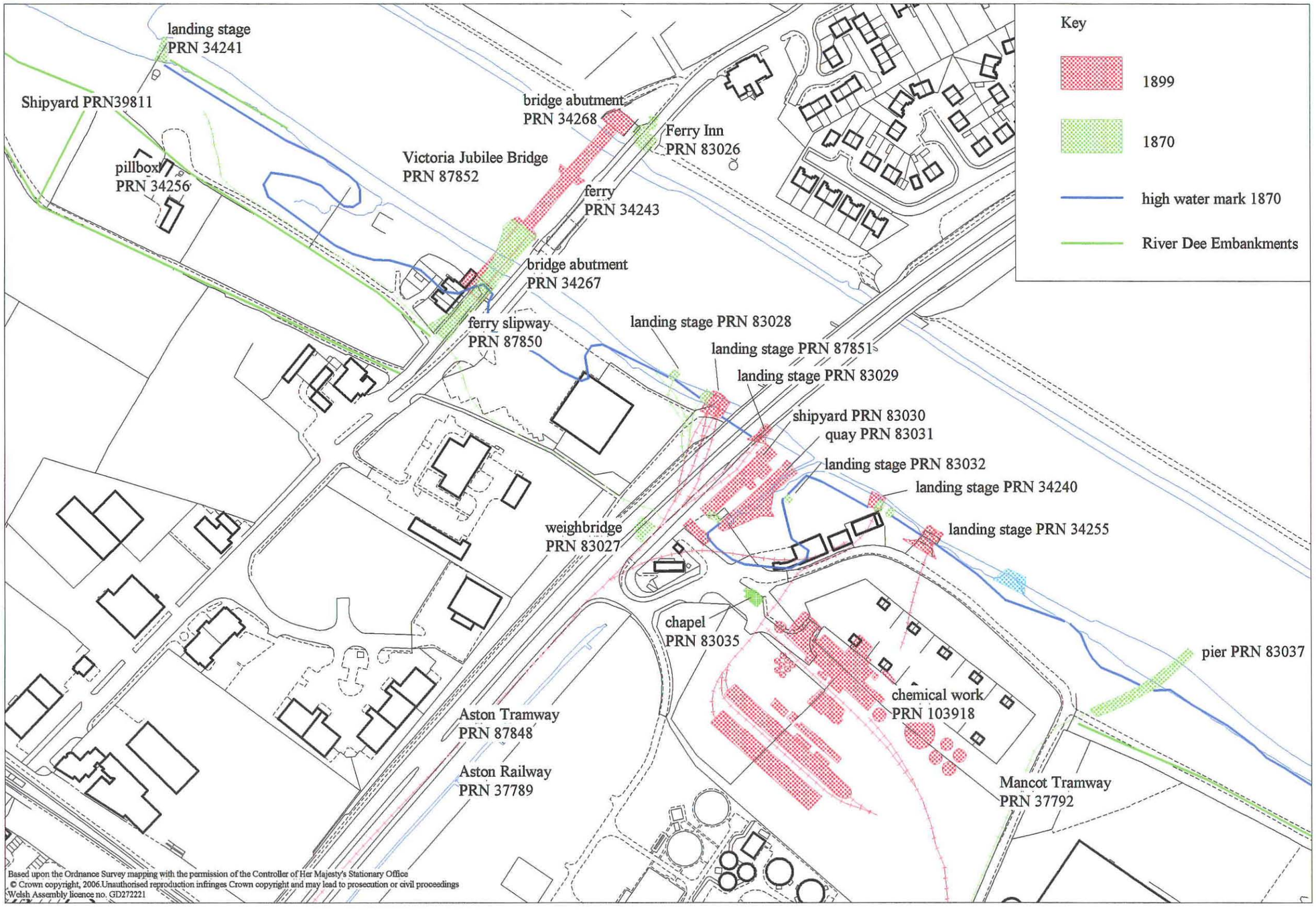

Fig. 13 Queensferry port related features, scale 1:2,500

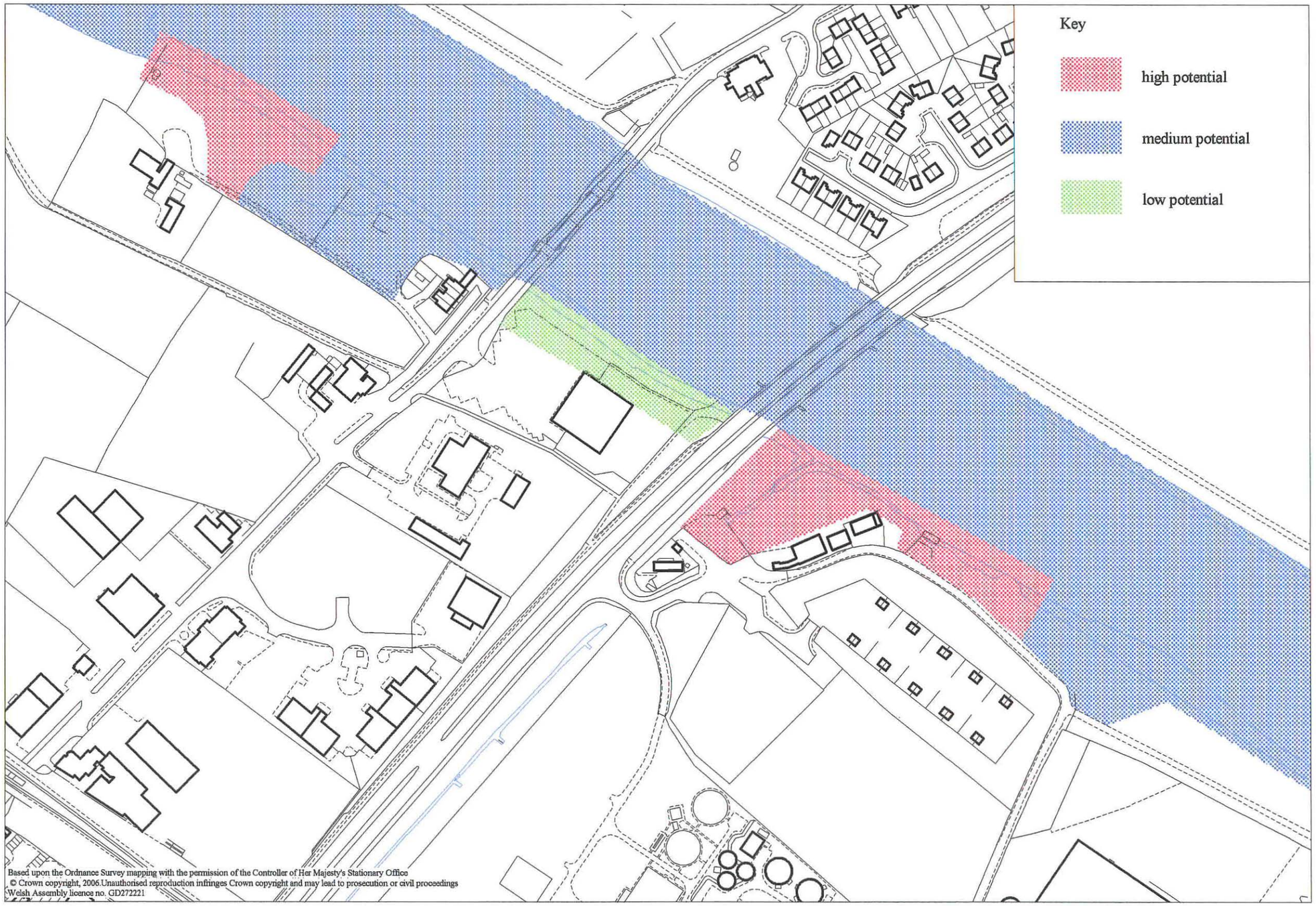

Fig. 14 Queensferry archaeological potential, scale 1:2,500

6 SANDYCROFT

Location

6.1 Sandycroft is located on the south-western bank of the River Dee New Cut, 7km from Chester (SJ 338676).

Historical background

6.2 Sandycroft Quay developed around a small inlet known as Fowl Pool Gutter at Sandycroft Mark. About 1751 a lease was granted by the Glynnes of Hawarden Castle to John Dutton and Walter Stubbs of Beckbury, near Broseley, Shropshire, which permitted the construction of a tramroad from Sandycroft Colliery, Buckley, past the lead smelting works at Pentrobin and along Moor Lane to Sandycroft Mark; it is possible, however, that only the section along Moor Lane was ever completed. This was later replaced by the Sandycroft Railroad, which may have been built by Sir John Glynne around 1790, and from 1801 was leased to Rigby, the Hawarden Ironmaster, and Hancock, the Buckley brick manufacturer (Boyd 1991, 16; 40-2). The quay therefore originally developed as a means of shipping coal.

Shipbuilding and Industry

6.3 A small shipyard developed alongside the inlet during the mid-19th century, operated by Thomas Cram & Co. Around 1852 they began building the 'Royal Charter', an iron sailing clipper with an auxiliary steam screw. The vessel was launched in July 1854 and wrecked off Moelfre, Anglesey on 27 October 1859 with the loss of over 400 lives.

Fig. 15 Sandycroft Foundry and Quay *c.* 1900. Reproduced with the permission of Flintshire Record Office (PH/60/37)

6.4 By the time of the Hawarden Tithe Survey in 1843 a foundry had developed on the eastern side of the inlet, having its own wharfage. The site was taken over by John Taylor in 1862, a firm which had been established as the Mold Foundry at Rhydymwyn in 1837. The company specialised in making machinery for the mining industry. In 1874 the company became Messrs

Bricknell, Taylor and Co., and around 1890 changed its name again to the Sandycroft Foundry and Engine Works Company Ltd. In 1886 the South Africa gold mines were opened and the company was overwhelmed with orders, also supplying machinery to India, Brazil, Australia, New Zealand and numerous mines and collieries throughout Britain. By the 1920s competition had increased significantly and in 1925 the works closed due to lack of orders (FRO D/GL/100). The works was taken over by Industrial Minerals of Ireland Ltd in 1929 and during the 1930s was used by the International Electrolytic Plant Co. (FRO D/HA/1502).

6.5 In 1917 a new high explosives factory was built on the site of a derelict chemical works at Queensferry, and a smaller detached site at Sandycroft produced mono-nitro-toluene, which was taken to the main factory for further nitration to produce TNT. The factory closed during the 1920s (Cocroft 2000, 166-9).

The waterfront (Figs 17-18)

6.6 Sandycroft Quay (PRN 34242) developed around Fowl Pool Gutter from the 1750s, following the opening of a tramroad (PRN 19100) carrying coal from Sandycroft Colliery. The tramroad was later replaced by Sandycroft Railroad. A small shipyard grew up alongside the inlet during the mid-19th century (PRN 39813).

6.7 Sandycroft Foundry (PRN 103920) developed around the quay from at least the 1840s and by the early 20th century occupied an extensive area with numerous buildings, its own tramway system (PRN 83041) and wharfage along the eastern side the quay (Fig. 16).

Fig. 16 Sandycroft Quay showing timber revetment on the left and stone revetment on the left. Photo CPAT 2079-003

Archaeological potential (Fig. 17)

6.8 The quay itself (PRN 34242) is relatively well preserved with the dressed stone revetment along the south-east side surviving more or less intact, although the timber revetment on the north-west side is in poor condition. The landward end of the quay has been modified as part of water management and flood prevention measures, although the remains of timber revetments (PRN 83053) survive along both sides of the gutter to the south-west of the road. The area along the north-west side of the quay has been recently levelled and a new building erected, while along the south-east side some of the 19th-century foundry buildings still survive. Along the riverside there are the remains of a timber landing stage (PRN 34251) and two other areas of timber posts (PRNs 34246 and 83052) which may have been part of stages or wharves.

6.9 The main 20th-century buildings belonging to the foundry survive and are now used as industrial units and workshops, although some are derelict. The area between these buildings and the river is now wasteland with scrub vegetation, although the earthworks and brick foundations are still discernible for some of the buildings and tramways which occupied the area.

Fig. 17 Map regression for Sandycroft, scale 1:2,500

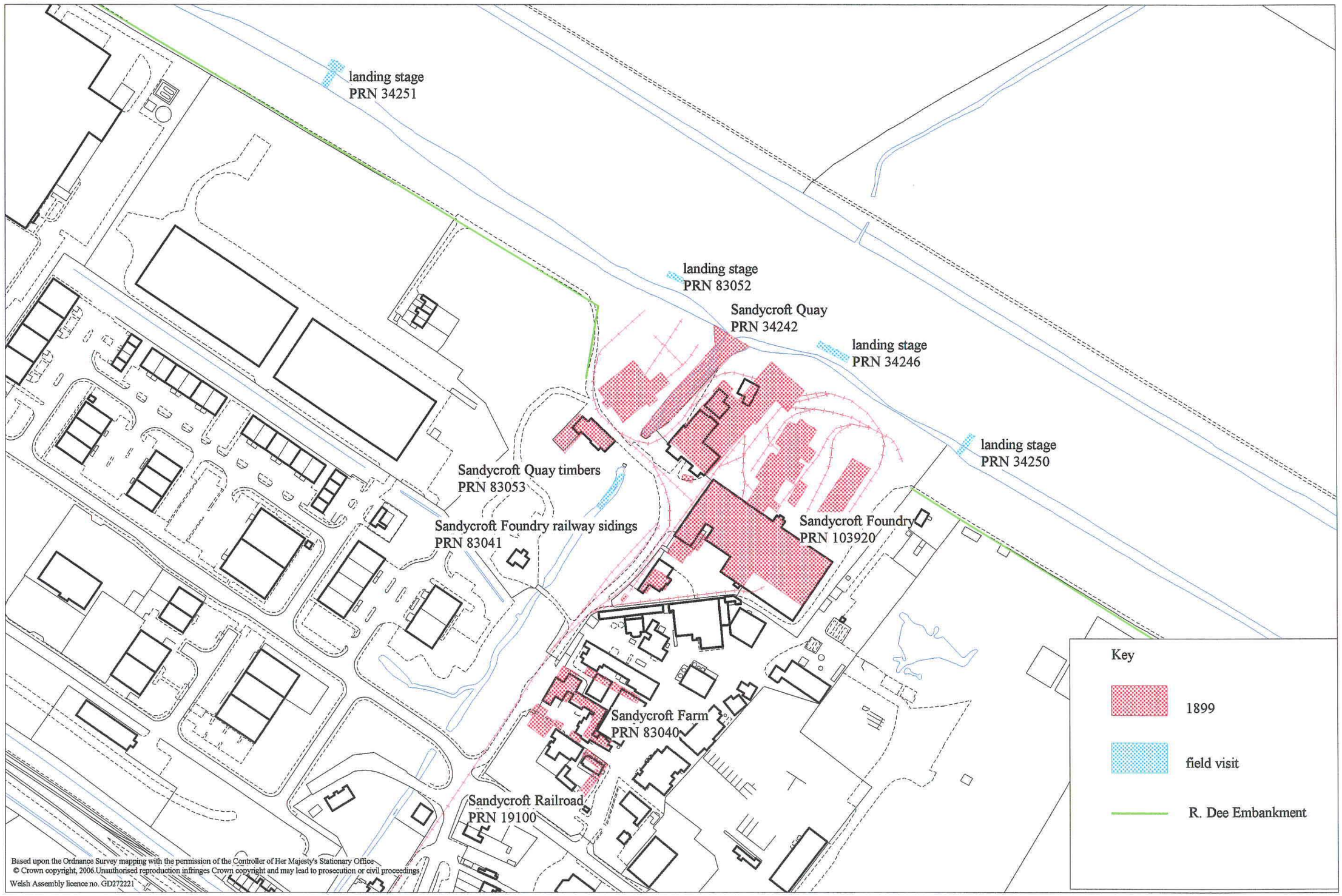

Fig. 18 Sandycroft port related features, scale 1:2,500

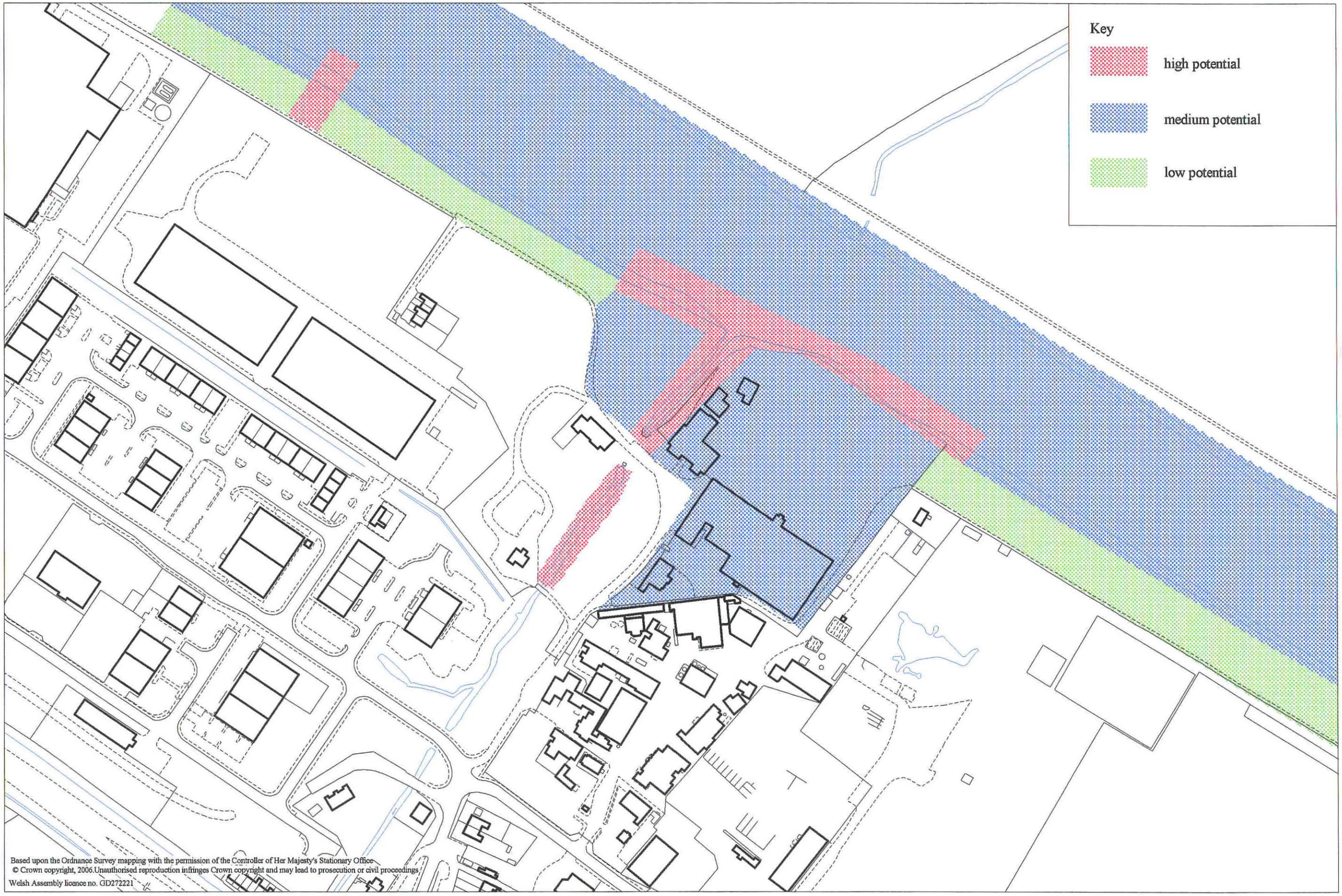

Fig. 19 Sandycroft archaeological potential, scale 1:2,500

7 MINOR QUAYS AND LANDING STAGES

7.1 As well as the three main ports of the River Dee New Cut a number of smaller wharves and landing stages also developed, generally directly associated with local industry (Fig. 20). For the purpose of convenience these have been grouped together into this section of the report and are described in order from Saltney westwards to Shotton.

Saltney Quay and Shipyard

7.2 A small quay (PRN 87846) was developed at Saltney by the Great Western Railway, with sidings leading directly from the Chester to Holyhead line. The wharf was mainly used for importing iron ore and exporting coal. The main part of the quayside lay to the east of a small inlet which forms the border between Wales and England. In 1913 the area between the railway and the river on the Welsh side was acquired by J Crichton and Co. Ltd who set up a shipyard building metal ships (Dixon & Pickard 2002). The area of the shipyard is currently being redeveloped although the riverside remains undisturbed where parts of the timber revetment survive for the wharfage and along the side of the inlet.

7.3 1.7km further downstream at Saltney was a second wharfage (PRN 37799) associated with nearby industry. The remains of the timber revetment can still be seen along the riverside and also along either side of a small inlet which may have been used as a quay.

Queensferry Engineering Works and Munitions Factory

7.4 In 1899 the firm of Willans and Robinson Ltd, Engineers and Boilermakers, bought land at Queensferry, on the east side of Chemistry Lane, between the railway and the Dee embankment, to built a factory. The modern works had an extensive system of railway sidings and tramways (PRN 83039) and was equipped with its own landing stage (PRN 34254) which was fitted with an electrically operated crane for unloading pig iron and anthracite, which were conveyed directly to the works via an aerial ropeway (PRN 83038). In 1903 the company was the first to produce vanadium steel, a high tensile alloy. The works closed in 1910 and in August 1914 was take over as a camp for German internees and in 1971 became the site of a new high explosives factory (FRO D/GL/91). The large and self-sufficient factory (PRN 34291) had one of the largest and most efficient sulphuric acid plants in the world. A smaller detached site at Sandycroft produced mono-nitro-toluene, which was taken to the main factory for further nitration to produce TNT. The factory closed during the 1920s (Cocroft 2000, 166-9).

7.5 Many of the original buildings survive although there is now no trace of the tramways, and all that remains of the aerial ropeway is a pair of sawn-off posts just inside the fencing on the north-east side of the compound. The landing stage survives, along with a smaller adjacent stage, although both are in poor condition.

Hawarden Bridge Ironworks

7.6 In 1895 John Summers and Sons built an ironworks on reclaimed land at Shotton, on the northern bank of the River Dee. The company imported scrap iron, iron ore, and other raw materials by sea and exported sheet metal by both sea and rail. The firm had its own fleet of steam ships and operated a landing stage which, at its peak during the early 20th century, included a railway link (PRN 34264) (Bates 1980, 42-3).

Shotton Steelworks

7.7 The site of the ironworks was later taken over by Shotton Steelworks, greatly expanding the area of the factory. Two landing stages (PRNs 34264-5) appear to be associated with the later works, the more easterly of which has the wreck of a timber coastal vessel alongside, which was registered at Peterhead (PRN 34266). Of more significance is the small quay (PRN 34288) which was developed by the steelworks and is still in use today.

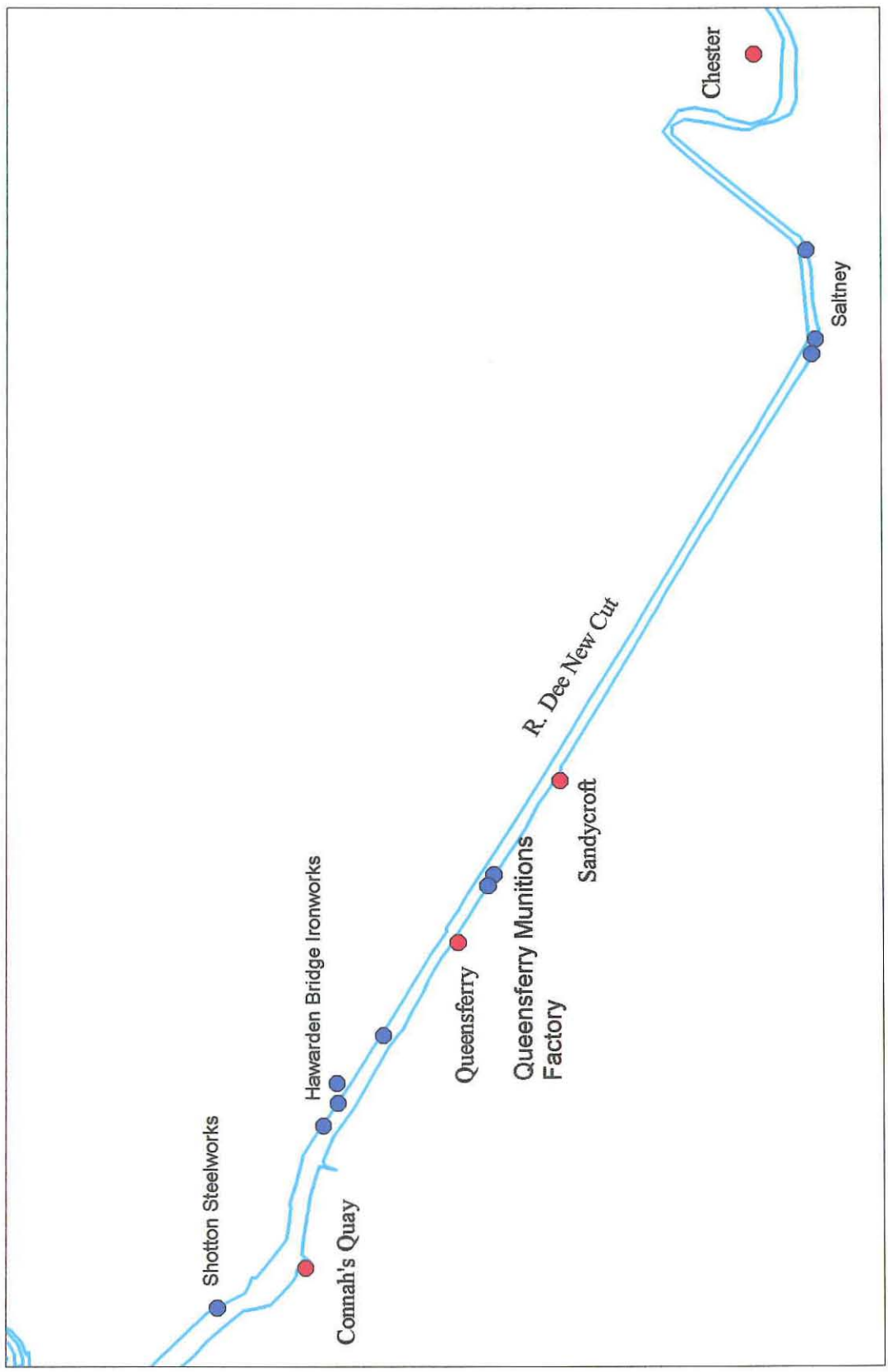

Fig. 20 Minor quays and landing stages of the River Dee New Cut

7 ACKNOWLEDGEMENTS

The project was undertaken with the assistance of Jeff Spencer and Charlotte Baxter (HER). Thanks are also due to the following: Cadw, for providing the funding; Denbighshire County Council and the Welsh Assembly Government for making OS digital data available to the project for the purpose of enhancing the Historic Environment Record; the staff of the National Library of Wales, Aberystwyth; the staff of the National Monuments Record, Aberystwyth; the staff of the Flintshire Record Office, Hawarden; the staff of Cheshire Record Office, Chester; and to the landowners who kindly allowed access to the sites.

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The River Dee from a survey made by Captain Greenvile Collins, 1684. D/BJ/424

The River Dee from a survey made by John MacKay, 1732. D/BJ/424

Plan of the Dee Estuary by Fearon and Eyes, 1736/7. D/LA/65

The River Dee. From the sea to Parkgate from a map by PP Burdett, 1771. From Parkgate to Chester from a survey by Thomas Boydell. Made for the River Dee Co. 1770-1771. DC/196

Admiralty Plan of the Dee Estuary, 1834. D/LA/076

River Dee from Chester to Flint, surveyed by Robert Stevenson and Sons, 1839. D/BT/426

River Dee Upper Estuary in 1737 shewing reclamation to 1889, 1700 and 1732 limits. D/LA/008

APPENDIX 1

GAZETTEER OF SITES

Connah's Quay and Wepre

PRN	Name	Grid ref.	Type	Form	Condition
34230	Connah's Quay Dock I	SJ2940069900	Dock	Structure	Damaged
34231	Connah's Quay Dock II	SJ29496984	Dock	Structure	Destroyed
37739	Latchcraft Tramroad	SJ30616925	Tramway	Document	Unknown
37772	Wrexham, Mold and Connah's Quay Railway	SJ29326983	Railway	Earthwork	Unknown
37781	Connah's Quay Chemical Works	SJ29806970	Factory	Document	Unknown
37782	Wepre Chemical Works	SJ30186940	Factory	Document	Unknown
37825	Connah's Quay landing stage I	SJ29796978	Landing stage	Document	Unknown
37826	Connah's Quay wharf IV	SJ29257001	Wharf	Document	Unknown
39812	Connah's Quay shipyard I	SJ29206998	Shipyard	Document	Unknown
83014	Connah's Quay shipyard II	SJ29306992	Shipyard	Document	Unknown
83015	Connah's Quay slipway I	SJ29246998	Slipway	Document	Unknown
83016	Connah's Quay shipyard seawall	SJ29326995	Wall	Document	Unknown
83017	Connah's Quay slipway II	SJ29376994	Slipway	Document	Destroyed
83018	Connah's Quay wharf I	SJ29406992	Wharf	Structure	Damaged
83019	Connah's Quay wharf II	SJ29476990	Wharf	Structure	Near destroyed
83020	Connah's Quay landing stage II	SJ29516989	Landing stage	Document	Destroyed
83021	Connah's Quay docks reservoir	SJ29466979	Reservoir	Document	Unknown
83022	Connah's Quay landing stage III	SJ2964569875	Landing stage	Document	Destroyed
83023	Connah's Quay wharf III	SJ29706987	Wharf	Document	Destroyed
83024	Connah's Quay wagon works and saw mill	SJ29666970	Saw mill	Document	Unknown
83025	Connah's Quay River Dee embankment	SJ29936967	Reclamation bank	Document	Unknown
83072	Wepre port	SJ30266945	Port	Document	Unknown
87972	Connah's Quay, The Quay House	SJ2933369886	Public House	Building	
103747	Connah's Quay Port	SJ2943269856	Port	Structure	Damaged

Queensferry

PRN	Name	Grid ref.	Type	Form	Condition
34240	Aston Quay landing stage VI	SJ3244068485	Landing stage	Structure	Damaged
34241	Queensferry Quay	SJ32006876	Quay	Structure	Damaged

34243	Lower Kings Ferry	SJ32226870	Ferry crossing	Structure	Destroyed
34255	Aston Quay landing stage VII	SJ32496846	Landing stage	Structure	Damaged
34256	Queensferry Pillbox	SJ3196568770	Pill box	Structure	Damaged
34267	Queensferry Bridge SW Abutment	SJ32176867	Bridge	Structure	Damaged
34268	Queensferry Bridge NE Abutment	SJ32256874	Bridge	Structure	Damaged
37789	Aston Railway	SJ322684	Railway	Document	Damaged
37792	Mancot Colliery, Tramway	SJ32506835	Tramway	Document	Unknown
39811	Queensferry shipyard I	SJ31976876	Shipyard	Document	Unknown
83026	Ferry Inn	SJ32276873	Public House	Document	Destroyed
83027	Aston Quay weighbridge	SJ3226568490	Weighbridge	Document	Destroyed
83028	Aston Quay landing stage I	SJ3228568585	Landing stage	Document	Unknown
83029	Aston Quay landing stage III	SJ32346855	Landing stage	Document	Unknown
83030	Queensferry shipyard II	SJ32336852	Shipyard	Document	Unknown
83031	Aston Quay	SJ32346851	Port	Document	Unknown
83032	Aston Quay landing stage IV	SJ3235568510	Landing stage	Document	Unknown
83033	Aston Quay building	SJ3231068495	Building	Document	Unknown
83034	Queensferry chapel	SJ32336845	Chapel	Document	Destroyed
83035	Queensferry chemical works railway	SJ32346843	Railway	Document	Destroyed
83036	Mancot Tramway pier	SJ32586840	Landing stage	Document	Unknown
83054	Aston Quay landing stage V	SJ3241568505	Landing stage	Structure	Near destroyed
83055	Queensferry Quay landing stage	SJ3197568785	Landing stage	Structure	Damaged
87848	Aston Colliery tramway	SJ3211168635	Tramway	Structure	Damaged
87850	Queensferry ferry jetty	SJ3219068667	Jetty	Structure	Unknown
87851	Aston Quay landing stage II	SJ3230568570	Landing stage	Structure	Unknown
87852	Victoria Jubilee Bridge	SJ3221068689	Bridge	Structure	Destroyed
103918	Queensferry Chemical Works	SJ3240068397	Chemical works	Building	Damaged

Sandycroft

PRN	Name	Grid ref.	Type	Form	Condition
19100	Hawarden Old Tramline	SJ33806698	Tramway	Earthwork	Destroyed
34242	Sandycroft Quay	SJ3385067600	Quay	Structure	Damaged
34246	Sandycroft Quay landing stage III	SJ33926760	Landing stage	Structure	Near destroyed
34250	Sandycroft Quay Jetty	SJ3401567540	Jetty	Structure	Damaged
34251	Sandycroft Quay landing stage I	SJ33596779	Landing stage	Structure	Damaged
34297	Sandycroft Foundry	SJ3390067500	Foundry	Structure	Damaged
39813	Sandycroft Shipyard	SJ33826758	Shipyard	Document	Unknown
83040	Sandycroft Farm	SJ33746735	Farm	Document	Unknown

83041	Sandycroft Foundry railway sidings	SJ33816749	Railway	Document	Unknown
83052	Sandycroft Quay landing stage II	SJ33826765	Landing stage	Structure	Near destroyed
83053	Sandycroft Quay timbers	SJ33786752	Quay ?	Structure	Damaged
103920	Sandycroft Foundry	SJ3390067500	Iron foundry	Building	Damaged

Minor quays and landing stages

PRN	Name	Grid ref.	Type	Form	Condition
34247	Garden City Landing Stage	SJ31526915	Landing stage	Structure	Damaged
34253	Queensferry Munitions Factory landing stage II	SJ3295568175	Landing stage	Structure	Damaged
34254	Queensferry Munitions Factory landing stage I	SJ32866823	Landing stage	Structure	Damaged
34263	Shotton Steelworks Landing Stage I	SJ30916956	Landing stage	Structure	Damaged
34264	Shotton Steelworks Landing Stage II	SJ30716969	Landing stage	Structure	Damaged
34265	Shotton Steelworks Landing Stage III	SJ30506983	Landing stage	Structure	Damaged
34266	Shotton Steelworks Wreck	SJ3073569680	Wreck	Structure	Damaged
34288	Shotton Steelworks Quay	SJ29087063	Port	Structure	Damaged
34291	Queensferry Munitions Factory	SJ32586802	Factory	Structure	Damaged
37799	Saltney Dee Works Wharf	SJ3774965319	Port	Document	Destroyed
83037	Queensferry munitions factory reservoir	SJ32716818	Reservoir	Document	Unknown
83038	Queensferry munitions factory aerial ropeway	SJ32726813	Aerial ropeway	Document	Unknown
83039	Queensferry munitions factory railway	SJ32546795	Railway	Document	Unknown
83056	Saltney Shipyard	SJ38436533	Shipyard	Document	Unknown
87842	Stoop Bridge Stage	SJ3761665350	Landing stage	Structure	Destroyed
87846	Saltney Quay	SJ3854765400	Landing stage	Structure	
104031	Hawarden Bridge Ironworks	SJ31096957	Iron foundry	Document	Destroyed