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PERSIMMON HOMES

LAND AT THE FORMER MARCHON SITE WHITEHAVEN CUMBRIA

ARCHAEOLOGICAL EVALUATION REPORT

JULY 2021

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DATE ISSUED:	July 2021
JOB NUMBER:	CL12387
SITE CODE:	FMW-A
OASIS REFERENCE:	wardella2-425701
REPORT VERSION NUMBER:	001

Persimmon Homes

Land at Former Marchon Site, Whitehaven

Archaeological Evaluation

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EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by the client Persimmon Homes, to undertake an archaeological evaluation by trial trenching at the former Marchon Site Chemical Works, Whitehaven, Cumbria, NGR: NX 96602 15829. The phased programme of trial trenching works was undertaken to support a forthcoming application for redevelopment of the site. The evaluation was undertaken in accordance with a written scheme of investigation (WSI 2021) produced in response to advice given by Jeremy Parsons acting as the archaeological planning advisor on behalf of Cumbria County Council.

The archaeological work was undertaken over 10 days between the 14th and the 25th June 2021, and comprised the excavation of twenty-five trenches. The investigation revealed Mesolithic activity in the form of shallow pits and flint blade artefact. Also identified were previously unknown quarrying activities to the north of the former Marchon Chemical Works, Whitehaven, within the development area.

ACKNOWLEDGEMENTS

Wardell Armstrong LLP (WA) thanks the client Persimmon Homes for commissioning the project, and for all their assistance throughout the work. Also, WA thank Jeremy Parsons Planning Archaeologist, at Cumbria County Council for their assistance.

Wardell Armstrong LLP also thanks John Elliots plant hire company, for their help during this project.

The evaluation was supervised by Kevin Mounsey and the report written by Laura Caygill-Lowery. The figures were produced by Helen Phillips. The finds assessment was undertaken by Megan Stoakley and palaeoenvironmental assessment by Megan Lowrie-Sisson. The project was managed by Frank Giecco, who also edited the report.

1 INTRODUCTION

1.1 Project Circumstances and Planning Background

1.1.1 In June 2021, Wardell Armstrong LLP (WA) undertook an archaeological evaluation on land at the Former Marchon Chemical site, Whitehaven, Cumbria, NGR: NX 96602 15829. The work was commissioned by the Client who is interested in redeveloping the site and the work was carried out as pre-determination planning requirement by Cumbria County Council.

1.1.2 The proposed development site comprises the former Marchon chemical works in the south eastern corner and the north western half comprises agricultural land. The south west corner of the former Marchon site included a Georgian period dwelling, which was used during the existence of the chemical works and demolished soon after 1962. The agricultural land comprised of two arable fields which historically lie in a wider area of prehistoric and Romano-British potential. In the southern field a cropmark, showing a potential enclosure, was detected during geophysical survey in December 2019 (WA 2020). This cropmark could potentially reflect activity of these periods, the heritage significance of which may be affected by the application.

1.2 Project Documentation

1.2.1 The project conforms to a brief prepared Jeremy Parson, Archaeological Advisor to Cumbria County Council.

1.2.2 A Written Scheme of Investigation (WSI) was then produced to provide a specific methodology based on the brief for a programme of archaeological trial trench evaluation (WA 2021). This was approved by the archaeological planning advisor prior to the fieldwork taking place. This is in line with government advice as set out in Section 16 of the National Planning Policy Framework 2019 (MHCLG 2019).

1.2.3 This report outlines the work undertaken on site, the subsequent programme of post-fieldwork analysis, and the results of this scheme of archaeological evaluation.

2 METHODOLOGY

2.1 Standards and guidance

2.1.1 The archaeological evaluation was undertaken following the Chartered Institute for Archaeologists *Standard and Guidance for archaeological field evaluation* (2020), and in accordance with the WA excavation manual (2020).

2.1.2 The fieldwork programme was followed by an assessment of the data as set out in the Standard and Guidance for archaeological field evaluation (CIfA 2020) and the Standard and Guidance for the collection, documentation, conservation and research of archaeological materials (CIfA 2020a).

2.2 Documentary Research

2.2.1 An archaeological Heritage Impact Assessment was prepared by Wardell Armstrong (2018), which set out the archaeological and historical background of the site and provided an assessment of the significance of all known and potential heritage assets within the development site.

2.3 The Field Evaluation

2.3.1 The evaluation comprised the excavation of twenty-five trenches across the proposed development site, all were 1.50m in width, eighteen 30m in length and & seven 50m in length. The trenches were placed to target and identify geophysical anomalies from the magnetometry survey in 2019 (WA 2020a).

2.3.2 The general aims of these investigations were to:

- determine the presence or absence of buried archaeological remains;
- determine the character, date, extent, and distribution of any archaeological remains identified and their potential significance;
- recover paleoenvironmental material where it survives in order to understand site and landscape formation processes;
- determine the likely impact on archaeological remains from the proposed development; and
- disseminate the results of the fieldwork through an appropriate level of reporting.

2.3.3 Deposits considered not to be significant were removed by a mechanical excavator with a toothless ditching bucket, under close archaeological supervision. All possible features were inspected and excavated by hand. Once completed all features were

recorded according to the WA standard procedure as set out in the Excavation Manual (WA 2020).

2.3.4 On completion the evaluation trenches were to be reinstated by replacing the excavated material.

2.3.5 A full professional archive has been compiled in accordance with the project specification, and the Archaeological Archives Forum recommendations (Brown 2011). The archive will be deposited with the Beacon Museum, Whitehaven with copies of the report sent to the Cumbria County Council HER, available upon request. The archive can be accessed under the unique project identifier (WA21/CL12387/FMW-A).

2.3.6 Wardell Armstrong LLP supports the **O**nline **A**cces**S** to the Index of Archaeological **I**nvestigation**S** (OASIS) project. This project aims to provide an on-line index and access to the extensive and expanding body of grey literature, created as a result of developer-funded archaeological work. As a result, details of the results of this project will be made available by WA as a part of this national project. The OASIS reference for the project is: wardella2-425701.

3 BACKGROUND

3.1 Location and Geological Context

3.1.1 The site was located at NX 96602 15829 (Figure 1). The site's environs comprise arable fields and the residential area of Kells to the north and east, to the south arable fields surround the former Marchon site to its east, south and west, while the Cumbria coastal path and Saltom Bay are to the west of the development site. The site can be accessed by High Road and is bounded to the north and east by the town of Whitehaven, to the south by the village of Sandwich and to the west by the Solway Firth. The area of investigation lies at a height of c 100 aOD (above Ordnance Datum), with the ground sloping sharply to the west leading to sea cliffs.

3.1.2 The site is approximately 3.28 hectares in size and is irregularly squared in plan. At present the site comprises two different types of land use, to the north is arable land and to the south is contaminated waste land of the former Marchon chemical works.

3.1.3 The underlying solid geology within the area of investigation is mapped as Dolomitic Limestone, mudstone and anhydrite-stone of the St Bees Evaporite Formation, deposited 252 to 272 million years ago during the Permian Period. This is overlain by superficial deposits of Till and Devensian of the Diamicton group, deposited 2 million years ago during the Quaternary Period (BGS 2021). The natural substrate observed during the current phase of works comprised compact mid greyish yellow bedrock with pockets of soft dark pinkish silty clay and variations of clay, gravel and soft dark pinkish brown silty clay deposits, which are consistent with the mapped geologies above.

3.2 Historical and Archaeological Background

3.2.1 A Heritage Impact Assessment was produced to assess the known historical and archaeological background of the site and the surrounding landscape to a distance of 1km (Wardell Armstrong 2018). It is not intended to repeat that information here and what follows is a brief overview, for further details please refer to the original document.

3.2.2 Forty-five known heritage assets are located within 1km of the designated development site, none are located within the site boundary (Figure 2). Within the site boundary there are thirteen non-designated heritage assets, all of which are of local significance. Two were specifically targeted to determine what subsurface archaeology remains. Asset number 4, a rectilinear cropmark of unknown date,

located in the southern most arable field in the west of the development site. Asset number 28, Lingdale Head Georgian House, located in the south west corner of the former Marchon chemical works, which had been demolished by 1962. The remaining eleven non-designated heritage assets are dated from the Post Medieval to the modern period and are in relation to previous industry on the site, or modern coastal defences.

3.2.3 The Heritage Impact Assessment had identified the resulting impact on the thirteen assets of local significance within the development area to be substantial. The development would affect key archaeological materials and as there is no specific plans, as yet available for the development, it must be considered that all thirteen are at risk of permanent detrimental impact (Wardell Armstrong 2018). Further mitigation works were advised, with advice from Cumbria County Council.

3.2.4 **Prehistoric**: Axes from the Neolithic period have been recovered from the study area of the Heritage Impact Assessment (Assets 2 and 7). Late Mesolithic flint scatters have also been recovered from field walking surveys of St. Bees Head.

3.2.5 **Roman**: A rectilinear cropmark is known from within the development area, which may represent the potential remains of a Roman fortlet (Asset 4) (Cranstone Consultants and Ironbridge Archaeology 2007, 14). Hadrianic coastal military outposts have been identified continuing south from Bowness-On-Solway, where Hadrian's Wall ends, to Moresby, north of Whitehaven. St. Bees Head is believed to be a natural stopping point for the coastal military outposts, but no evidence has been recovered. From Moresby to Ravenglass, the most southern coastal military outpost, sparce roman finds have been recovered. The position of this cropmark could therefore be in connection to the Hadrianic coastal military outposts (Breeze 2006, 413).

3.2.6 **Medieval**: Parish boundaries, one of which lies close to the proposed development area, are assumed to have remained consistent from the early Middle Ages.

3.2.7 There is extensive evidence of quarrying in the study area, and it is possible that some of this began in the medieval period. The proposed development site, and much of the wider study area, has been subjected to extensive post medieval and modern extractive and agricultural processes which may have obscured earlier activity.

3.2.8 **Post-medieval**: Mining as well as salt making is known to have occurred in the area prior to the Lowther family, with references to it occurring in St. Bees Parish in the 16th century (Cranstone Consultants and Ironbridge Archaeology 2007, 18).

3.2.9 Christopher Lowther was exporting coal to Ireland in 1632, which suggests he must have exploited pre-existing mines. The earliest pit known from the study area is Greenbank Pit operated by 18 men in 1675. Particularly within the development area Croft Pit was established in 1774 (Asset 24), by 1781 the pit had been connected to a wider wagonway system, known as the Saltom wagonway, this section becoming known as the Croft wagonway (Asset 41). An earlier waggon way seems to have run eastwards across the proposed development area (Asset 40). The Croft wagonway was developed and later replaced by the Coft Incline (Asset 42), which was served by an engine (Asset 23). Corkickle wagonway was installed in the 1890s and the Barrowmouth wagonway (Asset 44) was installed to link Barrowmouth Gypsum Mine to the Croft incline for the cement works (Asset 36).

3.2.10 The earliest mention of the discovery of Alabaster seems to be in 1682 in a 'quarry at Sandwich Baurgh' with a letter of 1698 noting the discovery of marble and possible future exploitation (Cranstone Consultants and Ironbridge Archaeology 2007, 47). Sandwith Baurgh, also referred to as Caput Bay in the 17th century, is marked on the Sandwith Tithe Award Plan of 1838 and lies to the west of the proposed development site. The earliest known reference to quarrying is in 1739 (CACW YDS 60/2/6/1), and by 1811 leases indicate that it had extended below ground, with a requirement for pillars to support the roof (CACW YDS 60/2/6/9).

3.2.11 Industrial activities continued while agriculture remained dominant into the 20th century. The landscape in the vicinity of the proposed development site until the 20th century retained the medieval division between Preston Quarter and Sandwith townships, and field systems around the villages of Sandwith and Arrowthwaite.

3.2.12 **Modern Period:** By the end of the 20th century no new colliery had been sunk for 60 years, until the sinking of Ladysmith Shaft (Asset 45). Ladysmith Colliery became a large complex, which eventually closed in 1931, resulting in the closure of the Croft incline and the Corkickle wagonway. Ladysmith colliery was partially reopened at surface level and the National Coal Board continued to use the Croft Wagonway.

3.2.13 The Marchon chemical works was first established on the site in 1943, retaining some of the old colliery buildings, converting them for industrial use and adding new buildings when needed (Asset 25). The company continued to grow on the site

through the 20th century, but by the 1990s the works went into decline. By August 2000 the workforce had been reduced to 300, by 2003 only 150 remained and eventually the remaining 82 people in December 2004 were given six months' notice. In June 2005, the site finally closed, and was demolished and cleared over the following years.

4 ARCHAEOLOGICAL EVALUATION RESULTS

4.1 Introduction

4.1.1 The evaluation was undertaken between the 14th and 25th June 2021, with twenty-five trenches excavated across the proposed development site (Figure 3). Trenches 2 through to 10 were placed to target the non-designated heritage Asset 4, a rectilinear crop mark. Trench 23 was placed to target non-designated heritage asset 28, Lingdale Head Georgian House. Trenches 24 and 25 were placed within the old Marchon Chemical Works site to determine what sub-surface archaeology remained. The rest of the trenches were placed across Areas 1 and 2 of the development area, to target geophysical anomalies identified through magnetometry survey in 2019 (Wardell Armstrong 2020a).

4.2 Results

4.2.1 **Trench 1** (Plate 1) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned west to east, within the south of the trench, this was not observed on excavation. The trench was aligned north-north-east to south-south-west. Measured 1.50m in width and 29.90m in length. Excavations reached a maximum depth of 0.54m and a minimum depth of 0.29m. The natural substrate (**101**) consisted of a firm mid yellowish pink/red clay. This was overlain by a 0.05m thick deposit of a friable mid reddish brown clayey silt subsoil (**102**). The trench was sealed by a loose mid brownish grey clayey silt topsoil (**100**).

4.2.2 Towards the northern end of the trench was a ceramic land drain on a west-east alignment.

4.2.3 **Trench 2** (Plate 2) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned north to south, within the mid-section of the trench, which was observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 51.40m in length. Excavations reached a maximum depth of 0.55m and a minimum depth of 0.18m. The natural substrate (**201**) consisted of a firm mid yellowish pink clay and brownish yellow limestone bedrock. This was overlain by a 0m to 0.15m thick deposit of a friable mid reddish brown clayey silt subsoil (**202**). The trench was sealed by loose mid brownish grey clayey silt topsoil (**200**).

4.2.4 In the central area of the trench was an modern industrial waste deposit (**203**). This corresponds to the geophysical anomaly recorded. Measuring 0.60m wide and made

of a friable dark blackish brown silt with infrequent inclusions of large fragments of coal up to 0.06m in diameter.

4.2.5 **Trench 3** (Plate 3) was devoid of any archaeological features. The trench was placed to target an irregular oval positive magnetic response geophysical anomaly, spanning the majority of the length of the trench. The trench was connected to trench 10 along its western section and was aligned north to south. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 1.40m and a minimum depth of 0.40m. The natural substrate (**301**) consisted of a compact mid greyish yellow limestone bedrock, with occasional inclusions of a soft dark pinkish brown silty clay. This was overlain by a 0.30m thick deposit of a loose mid reddish brown clayey silt subsoil (**302**). The trench was sealed by a loose mid brownish grey clayey silt topsoil (**300**).

4.2.6 Across the majority of the trench length from the south end the cause for geophysical anomaly could clearly be seen, this turned out to be a potential small limestone quarry. This was not illustrated on the First Edition Ordnance Survey Map of 1865 (Wardell Armstrong 2018) or later mapping so is likely to predate 1865.

4.2.7 **Trench 4** (Plate 4; Figure 4) was placed to target a linear geophysical anomaly aligned north- east to south-west, towards the centre of the trench, which was observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 50.10m in length. Excavations reached a maximum depth of 0.76m and a minimum depth of 0.30m. The natural substrate (**401**) consisted of a hard light brownish orange silty clay with stone inclusions. This was sealed by a friable dark brown silty topsoil (**400**).

4.2.8 In the centre of the trench was cause for the geophysical anomaly (Plate 5) was recorded. This feature was a rudimentary trackway with inclusions of clinker, coal, slag and waste and a ditch [**405**] to the east. The trackway contained two pairs of wheel ruts [**406**] and [**407**]. The trackway may have been associated with the disused potential quarry uncovered in Trench 3. No other geophysical anomalies were observed in the trench. A ditch to the south of the trackway was also observed, this was for a modern drain which crossed the trench, aligned north to south, and associated with two concrete inspection chambers observed in the field and recorded on the geophysical survey.

4.2.9 **Trench 5** (Plate 6; Figure 5) was placed to target a linear geophysical anomaly aligned north-east to south-west, at the centre of the trench, which was observed on

excavation. The trench was aligned west to east. The measured 1.50m in width and 30.50m in length. Excavations reached a maximum depth of 0.85m and a minimum depth of 0.30m. The natural substrate (**501**) consisted of a hard light brownish orange silty clay with stone inclusions. This was sealed by a friable dark brown silty topsoil (**500**).

4.2.10 In the centre of the trench was the geophysical anomaly (Plate 7). This feature was a continuation of the rudimentary trackway observed in trench 4, to the south of trench 5. The surface showed earlier cuts for horse drawn wagon wheels [**504**], filled by industrial waste (**502**). The same ditch for the modern drain aligned north to south was also observed, as in trench 4.

4.2.11 **Trench 6** (Plate 8; Figure 6) was placed to target two linear geophysical anomalies, the first aligned north-east to south-west at the centre of the trench and the second aligned west to east at the western end of the trench, both were observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 51.40m in length. Excavations reached a maximum depth of 0.550m and a minimum depth of 0.27m. The natural substrate (**601**) consisted of a hard light brownish orange stony silt. This was sealed by a loose dark brown silty topsoil (**600**).

4.2.12 In the centre of the trench was the first geophysical anomaly (Plate 9). This feature was a continuation of the rudimentary trackway (**603**) observed in trenches 4 and 5, to the south of trench 6. No evidence for wheel ruts were observed during excavation. There was also a V-shaped ditch for the modern drain cut through (**603**), as observed in trenches 4 and 5.

4.2.13 In the western end of the trench was a variation in natural which became more gravel rich, this spread measured over 8.40m in length (Plate 10) and was clearly a natural variation in the superficial geology. This is believed to be the cause of the west to east geophysical anomaly and not the result of archaeology.

4.2.14 **Trench 7** (Plate 11) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned west to east, at the centre of the trench, which was observed on excavation. The reason for this targeted geophysical anomaly was due to changes in geology and a considerable drop in the bedrock level (Plate 12). The trench was aligned north to south. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.93m and a minimum depth of 0.24m. The natural substrate (**701**) consisted of a compact light reddish yellow silty clay. This was overlain by a 0.06m thick deposit of soft mid yellowish brown silty clay

subsoil (**702**). The trench was sealed by a loose mid brownish grey clayey silt topsoil (**700**).

4.2.15 **Trench 8** (Plate 13) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned west to east, at the centre of the trench, which was observed on excavation. The geophysical anomaly was due to changes in geology (Plate 14). The trench was connected to Trench 9 at its southern end and aligned north to south. Measured 1.50m in width and 50m in length. Excavations reached a maximum depth of 0.57m and a minimum depth of 0.25m. The natural substrate (**801**) consisted of a compact light pinkish yellow clay. This was overlain by a 0.08m thick deposit of soft mid greyish brown silty clay subsoil (**802**). The trench was sealed by a soft mid greyish brown silty clay topsoil (**800**).

4.2.16 **Trench 9** (Plate 15; Figure 9) was placed to target a linear geophysical anomaly aligned north to south, at the centre of the trench, which was observed on excavation. This geophysical anomaly was again the result of changes in the natural geology. The trench was connected to Trench 8 at its mid northern section and aligned west to east, and measured 1.50m in width and 50m in length. Excavations reached a maximum depth of 0.78m and a minimum depth of 0.23m. The natural substrate (**901**) consisted of a compact light pinkish yellow clay. This was overlain by a 0.32m thick deposit of soft mid greyish brown silty clay subsoil (**902**). The trench was sealed by a soft mid greyish brown silty clay topsoil (**900**).

4.2.17 Mid way within the trench two shallow pits were observed and investigated, [**903**] and to its east [**905**] (Plates 16 and 17). These two pits are 0.50m in distance from each other on a north-east to south-west alignment. They were not identified during geophysical survey.

4.2.18 Pit [**903**] was circular in plan and U-shaped in profile with imperceptible bottom break of slopes. The pit measured 0.31m in width, 0.32m in length and 0.06m in depth. The fill (**904**) was a soft black silt with tiny stone inclusions.

4.2.19 Pit [**905**] was also circular in plan and U-shaped in profile with imperceptible bottom of break slopes. The pit measured 0.22m in width, 0.30m in length and 0.06m in depth. The fill (**906**) was a soft black silt with tiny stone inclusions.

4.2.20 Near the centre of the trench was a compact gravelly area, measuring 2m in width. This is believed to be the cause of the north to south geophysical anomaly and not the result of any human activity.

4.2.21 **Trench 10** (Plate 18) was placed to target two geophysical anomalies. The first was a linear geophysical anomaly aligned north to south at the centre of the trench. The second was an irregular oval positive magnetic response located in the east of the trench. Both were observed on excavation. The trench was connected to trench 3 at its easter end and was aligned west to east. Measured 1.50m in width and 51m in length. Excavations reached a maximum depth of 1.20m and a minimum depth of 0.24m. The natural substrate (**1001**) consisted of a compact mid greyish yellow limestone bedrock. This was overlain by a 0.22m thick deposit of loose mid reddish brown clayey silt subsoil (**1002**). The trench was sealed by a loose mid brownish grey clayey silt topsoil (**1000**).

4.2.22 In the centre of the trench was a compact gravelly area, measuring 2m in width. This is believed to be the cause of the north to south geophysical anomaly and not the result of archaeology.

4.2.23 In the eastern end of the trench was the second geophysical anomaly. This turned out to be the western end of a small potential quarry area, the same as was seen in Trench 3. This was not seen on the First Edition Ordnance Survey Map of 1865 (Wardell Armstrong 2018).

4.2.24 **Trench 11** (Plate 19) was devoid of archaeological features. The trench was placed to target two linear geophysical anomalies aligned north to south, one at the western end and one at the eastern end of the trench. Neither were observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30.80m in length. Excavations reached a maximum depth of 0.48m and a minimum depth of 0.28m. The natural substrate (**1101**) consisted of a firm mid yellowish pink and brownish red clay with stone inclusions. The trench was sealed by a loose mid brownish grey clayey silt topsoil (**1100**). A land drain was observed at the centre of the trench aligned north-west to south-east. A plough scar was also observed running the length of the trench from the northern baulk at its centre to the southern baulk at the western end.

4.2.25 **Trench 12** (Plate 20) was devoid of archaeological features. The trench was placed to target three linear geophysical anomalies, one aligned north to south in the eastern end of the trench, the other two aligned north-west to south-east to the western end of the trench. Two were not observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.40m and a minimum depth of 0.30m. The natural

substrate (**1201**) consisted of a firm mid yellowish pink clay. The trench was sealed by a loose mid brownish grey clayey silt topsoil (**1200**).

4.2.26 One anomaly was observed in the form of a drain aligned north-west to south-east in the centre of the trench. This correlates to one of the central anomalies observed from the geophysical survey.

4.2.27 **Trench 13** (Plate 21) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned north to south in the western end of the trench and was not observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.54m and a minimum depth of 0.28m. The natural substrate (**1301**) consisted of a compact light yellowish/reddish brown silty clay. The trench was sealed by a loose mid greyish brown silty clay topsoil (**1300**).

4.2.28 **Trench 14** (Plate 22) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned north to south in the eastern end of the trench and a positive magnetic response to the western end of the trench. Neither were observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 50m in length. Excavations reached a maximum depth of 0.60m and a minimum depth of 0.43m. The natural substrate (**1401**) consisted of a compact light yellowish red silty clay. This was overlain by a 0.10m thick deposit of a loose mid reddish brown clayey silt subsoil (**1402**). The trench was sealed by a loose light brownish grey clayey silt topsoil (**1400**).

4.2.29 **Trench 15** (Plate 23) was devoid of archaeological features. The trench was placed to target two linear geophysical anomalies, both aligned north-west to south-east and one at either end of the trench. Neither were observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.40m and a minimum depth of 0.35m. The natural substrate (**1501**) consisted of a very compact light yellowish brown silty clay. The trench was sealed by a loose mid brown silty clay topsoil (**1500**).

4.2.30 **Trench 16** (Plate 24) was devoid of archaeological features. The trench was placed to target two linear geophysical anomalies, the first located to the west of the trench, aligned north to south. The second located towards the centre of the trench and aligned north-west to south-east. Neither were observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.60m and minimum depth of 0.40m. The natural

substrate (**1601**) consisted of a compact light yellowish brown silty clay. The trench was sealed by a loose mid brown silty clay topsoil (**1600**).

4.2.31 **Trench 17** (Plate 25) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned north-west to south-east at the centre of the trench, which was not observed on excavation. The trench was aligned north-east to south-west. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.36m and a minimum depth of 0.22m. The natural substrate (**1701**) consisted of a very compact light yellowish brown silty clay. The trench was sealed by a loose mid brown silty clay topsoil (**1700**).

4.2.32 A few modern plough scars were observed aligned west to east from the eastern baulk to the western baulk and could be seen across the length of the trench.

4.2.33 **Trench 18** (Plate 26) was devoid of archaeological features. The trench was placed to target a linear geophysical anomaly aligned north-west to south-east at the centre of the trench, which was observed on excavation. The trench was aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.36m and minimum depth of 0.20m. The natural substrate (**1801**) consisted of a very compact light reddish/yellow brown silty clay. The trench was sealed by a loose mid brown silty clay topsoil (**1800**).

4.2.34 Five french drains were observed running from the northern baulk to southern baulk in a north-west to south-east alignment. The central french drain matches that of the geophysical anomaly and is believed to be the cause of the north-west to south-east geophysical anomaly and not the result of archaeology.

4.2.35 Two plough marks were also observed along the trench length aligned north-east to south-west.

4.2.36 **Trench 19** (Plate 27) was devoid of archaeological features. The trench was placed at random and aligned west to east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.36m and a minimum depth of 0.20m. The natural substrate (**1901**) consisted of a compact light yellowish brown silty clay. The trench was sealed by a loose mid brown silty clay topsoil (**1900**).

4.2.37 **Trench 20** (Plate 28) was devoid of archaeological features. The trench was placed to target a di-polar magnetic sub-circular response in the east of the trench, which was not observed on excavation. The trench was aligned north-west to south-east. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth

of 0.41m and a minimum depth of 0.27m. The natural substrate (**2001**) consisted of a very compact light yellowish brown silty clay. The trench was sealed by a loose mid greyish brown silty clay topsoil (**2000**).

4.2.38 **Trench 21** (Plate 29) was devoid of archaeological features. The trench was placed to target two linear geophysical anomalies, the first aligned west to east, the second aligned north-east to south-west. Neither were observed during excavation. The trench was aligned north-east to south-west. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.60m and a minimum depth of 0.19m. The natural substrate (**2101**) consisted of a compact light yellowish/reddish brown silty clay. The trench was sealed by a loose mid greyish brown silty clay topsoil (**2100**).

4.2.39 A land drain was observed in the northern part of the trench, aligned west to east.

4.2.40 Towards the centre a geophysical anomaly was observed, matching the west to east anomaly from the magnetometry survey of 2019. This is believed to be the cause of the north to south geophysical anomaly and not the result of archaeology.

4.2.41 **Trench 22** (Plate 30) was devoid of archaeological features. The trench was placed to target two linear geophysical anomalies, both aligned west to east, the first located in the northern end of the trench and the second located in the centre of the trench. The central anomaly was observed during excavation. The trench was aligned north-east to south-west. Measured 1.50m in width and 30m in length. Excavations reached a maximum depth of 0.63m and a minimum depth of 0.17m. The natural substrate (**2201**) consisted of a very compact light yellowish brown silty clay. This was overlain by a 0.33m thick deposit of loose mid brown silty clay subsoil (**2202**). The trench was sealed by a loose mid greyish brown silty clay topsoil (**2200**).

4.2.42 Two land drains were observed in the northern and mid sections of the trench, both aligned north to south.

4.2.43 Towards the centre a geophysical anomaly was observed, matching the west to east anomaly from the magnetometry survey of 2019. This is believed to be the cause of the north to south geophysical anomaly and not the result of archaeology.

4.2.44 **Trench 23** (Plate 31) was devoid of archaeological features. The trench was placed to target Lingdale Head Georgian House, Heritage Asset 28. There was a concrete road over the projected site of the initial 30m trench, therefore the trench was moved to the north west edge of the north-east to south-west concrete road. The

trench was aligned north-east to south-west. Measured 1.50m in width and 24.10m in length. Excavations reached a maximum depth of 0.50m and a minimum depth of 0.31m. The natural substrate (**2301**) consisted of a compact mid brownish red silty clay. The trench was sealed by a loose mid reddish brown silty clay topsoil (**2300**).

4.2.45 An electric cable duct was observed down the central length of the trench, not excavated due to caution. Stone ballast from the kerbstones were observed along the south-east baulk of the trench.

4.2.46 **Trench 24** (Plate 32) was devoid of archaeological features. The trench was placed to target industrial activity on the former Marchon Chemical Works site. The trench was aligned north to south. Measured 1.50m in width and 16.30m in length. The natural substrate was not reached due to the potential for disturbing contaminated land on the former Marchon Chemical Works. The trench was sealed by a loose mid greyish brown clayey silt topsoil (**2400**).

4.2.47 **Trench 25** (Plate 33) was devoid of archaeological features. The trench was placed to target industrial activity on the former Marchon Chemical Works site. The trench was aligned north-west to south-east. Measured 1.50m in width and 18m in length. The natural substrate was not reached due to the potential for disturbing contaminated land on the former Marchon Chemical Works. The trench was sealed by a loose greyish brown clayey silt topsoil (**2500**).

5 ARTEFACTUAL ASSESSMENT

5.1 Introduction

5.1.1 A total of 135 artefacts, weighing 4,602g, was recovered during the archaeological investigation on land at the former Marchon site, Whitehaven, Cumbria (centred on NGR NX 96602 15829) (Table 1). Artefacts comprise pottery, ceramic building material, clay tobacco pipe, other ceramics, glass, flint, stone, slate and modern conglomerate (Tables 2-11). With the exception of the flint artefact, the assemblage spans the Victorian to modern periods. The artefacts ranged from poor to good condition with edges and surfaces displaying evidence of abrasion.

5.1.2 The artefacts were retained with the archive for the purposes of the assessment; no finds were recovered from environmental samples.

5.2 Methodology

5.2.1 The material was cleaned prior to examination; this was either through washing robust material, such as pottery and glass, while metal artefacts were left to air-dry then dry-brushed.

5.2.2 All finds were dealt with according to the recommendations made by Watkinson & Neal (1998) and to the Chartered Institute for Archaeologists (CIfA) Standard and guidance for the collection, documentation, conservation, and research of archaeological materials (2020a). All artefacts have been boxed according to material type and conforming to the deposition guidelines recommended by Brown (2011) and EAC (2014). Recording guidelines also follow material published by the Society for Museum Archaeologists (2020a-c). The project has the unique identifier **WA 2021** / **CL12387** / **FMW-A**.

5.2.3 The material archive has been assessed for its local, regional, and national potential in line with the archaeological research framework for North West England (Brennand *et al* 2006 & 2007).

5.2.4 The artefacts are in a stable condition and do not require conservation.

5.3 Flint

5.3.1 A single flint artefact (SF **1**), weighing 2g, was recovered from fill (**904**) and pit [**905**] in Trench 9 (Table 2). The artefact is in good condition.

5.3.2 Blade technology is evident on the dorsal surface; the artefact is of potentially Mesolithic to Neolithic date (*Pers. Comm.* Jackson 2021).

5.3.3 No further work is recommended.

5.4 Victorian to Early Modern Pottery

5.4.1 A total of 102 sherds of Victorian to early modern pottery (late 19th to early 20th century), weighing 1,037g, was recovered during the archaeological investigation (Table 3). The sherds are in moderate to good condition with some abraded edges and surfaces.

5.4.2 The pottery was examined with a x10 hand lens and recorded according to published national guidelines (PCRG, SGRP & MPRG 2016). The pottery used mnemonic codes when they could be identified; this was undertaken using material published in MOLA (2015). The codes appear in parenthesis below.

5.4.3 A minimum number of 64 vessels are present and the assemblage consists of 26 rims, 13 base sherds, 62 body sherds, two handles and a single lid fragment. No stamps or potters' marks were observed.

5.4.4 Fabric types comprise Transfer printed wares (TRB & TRG), Creamware (CREAM), Pearlware (PEARL), refined red, buff and white earthenwares (REFW, CRE, REFR, BUCK & BEARTH) with monochrome, bichrome, trichrome and polychrome banded decoration, Staffordshire-type slipware (STAFF) and stonewares (ENGS).

5.4.5 Vessel types are fairly limited and comprise jars, bowls, plates, teacups, saucers and teapots.

5.4.6 No further work is recommended.

5.5 Other Ceramics

5.5.1 A single ceramic artefact, weighing 3g, was recovered from topsoil (**200**) in Trench 2 (Table 4). The artefact is in good condition.

5.5.2 The artefact comprises a small, plain, moulded base for a statuette or figurine. The artefact has been manufactured from either a refined white earthenware or Porcelain.

5.5.3 The artefact is of Victorian to early modern date.

5.5.4 No further work is recommended.

5.6 Ceramic Building Material

5.6.1 A total of six fragments of Victorian to early modern ceramic building material, weighing 1,035g, was recovered from topsoil deposits in Trenches 5 to 8 (Table 5). The fragments are in moderate to good condition with some evidence of abrasion.

5.6.2 Identification of the ceramic building material was aided using McCornish (2015).

5.6.3 The fragments comprise partial miscellaneous plain brick fragments; no stamps or marks were observed.

5.6.4 No further work is recommended.

5.7 Clay Tobacco Pipe

5.7.1 A total of seven fragments of clay tobacco pipe, weighing 23g, was recovered from five topsoil deposits and from palaeochannel deposit (**2203**) (Table 6). The fragments are in good condition with minimal evidence of abrasion. The internal diameters of stem holes were measured with a pair of digital callipers to provide a tentative refined date (Table 7; Kipfer 2006, 8).

5.7.2 The artefacts comprise stem fragments and an undecorated spurred bowl; the assemblage spans the post-medieval period with a date range of 1680-1800 AD.

5.7.3 No further analysis is recommended.

5.8 Glass

5.8.1 A total of four fragments of Victorian to early modern bottle glass, weighing 37g, was recovered from topsoil deposits in Trenches 7 to 9 and in Trench 17 (Table 8). The shards are in moderate to good condition and display some evidence of abrasion.

5.8.2 No further analysis is recommended.

5.9 Conglomerate

5.9.1 Nine plus fragments of a type of modern conglomerate, weighing 1,992g+, were recovered from deposit (**403**) (Table 9). The fragments are in quite poor condition and are flaky and friable to touch.

5.9.2 While these fragments have been categorised as a conglomerate, they likely comprise a mixture of slaggy material, coal, clinker, industrial waste, small grits or stones and possibly sediment. The fragments may have originated from industrial processes e.g., coal extraction.

5.9.3 The fragments appear to have been re-purposed for use in a trackway or path.

5.9.4 No further analysis is recommended.

5.10 Stone

5.10.1 Four plus fragments of natural stone, weighing 420g+, were recovered from deposit (**402**) (Table 10). The fragments are in moderate condition and are quite friable.

5.10.2 The fragments are non-archaeological in provenance and are possibly associated with a trackway of Victorian to modern date.

5.10.3 No further analysis is recommended.

5.11 Slate

5.11.1 A single slate artefact, weighing 53g, was recovered from topsoil (**200**) in Trench 2 (Table 11). The fragment is in good condition.

5.11.2 The unmarked and miscellaneous fragment probably originated as a roofing slate with a possible date of Victorian to modern.

5.11.3 No further analysis is recommended.

5.12 Statement of Potential and Recommendations

5.12.1 The recovery of a flint flake of possibly Mesolithic to Neolithic date is of some archaeological interest, although its potential for contributing to prehistoric archaeological research frameworks or research agendas in North West England is somewhat limited (Brennand *et al* 2006 & 2007).

5.12.2 The remainder of the finds assemblage is of Victorian to modern date. The bulk of the material was recovered from topsoil and subsoil deposits and as such, they do not contribute to the archaeological or stratigraphic narrative of the site.

5.12.3 The finds assemblage recovered from this archaeological investigation is of low archaeological potential overall. It is recommended that the finds are not retained with the archive.

Table 1: Distribution of finds by Context

Tr No	Con	Cut	Context Description	POT	CER	CBM	CTP	GL	SLA	STO	CON	FLI
2	200		Topsoil: loose mid brownish grey clayey silt	Yes	Yes		Yes		Yes			
3	302		Subsoil: loose mid reddish brown clayey silt	Yes								
4	400		Topsoil: friable dark brown silt	Yes								
4	402	-	Deposit: compact light grey industrial waste (100%), forms part of rudimentary trackway	Yes						Yes		
4	403	-	Compact greyish black flaky type of industrial waste (?), possibly as a result of coal extraction (97%) with inclusions of slag (3%): part of rudimentary trackway								Yes	
5	500	-	Topsoil: friable dark brown silt	Yes		Yes	Yes					
6	600	-	Topsoil: loose dark brown silt	Yes		Yes	Yes					
7	700	-	Topsoil: loose mid brownish grey clayey silt	Yes		Yes		Yes				
7	704		Not given	Yes								
8	800	-	Topsoil: soft mid greyish brown silty clay	Yes		Yes		Yes				
9	900	-	Topsoil: soft mid greyish brown silty clay	Yes			Yes	Yes				
9	904	905	Fill of Pit: soft black silt with tiny stone inclusions									Yes
10	1000		Topsoil: loose mid brownish grey clayey silt	Yes			Yes					
16	1602		Not given	Yes								
17	1700		Topsoil: loose mid brown silty clay	Yes				Yes				
19	1900		Topsoil: loose mid brown silty clay	Yes								
19	1902		Not given	Yes								
22	2203		Palaeochannel deposit: firm mid reddish brown silty clay	Yes			Yes					
-	u/s		N/A	Yes			Yes					
11	u/s		N/A	Yes								

Key: Tr No = Trench number; Con = context; POT = pottery; CBM = ceramic building material; GL = glass; CTP = clay tobacco pipe; SLA = slate; STO = Stone; MO = mortar; FLI = flint; CON = conglomerate

Table 2: Flint data

Tr No	Con	SF Δ	Qty	Wgt (g)	Date	Refined Date	Notes
9	904	1	1	2	Prehistoric	Meso-Neo	Little flake with blade technology - possibly Mesolithic

Key: Tr No = Trench number; Con = context; Wgt = weight; Qty = quantity; SF = Small Find No; Neo = Neolithic; Meso = Mesolithic

Table 3: Victorian to Early Modern Pottery data

Tr No	Con	Qty	Wgt (g)	MNV	Fabric Code	Date	Refined Date	Notes	Rim	Base	Body	Handle	Lid
2	200	1	4	1	REFW	Late PM-E Mod	Late 19th-E 20th C	From a small dish / saucer	1	0	0	0	0
3	302	1	19	1	REFR MONO - moulded	Late PM-E Mod	Late 19th-E 20th C	Moulded decorative jar	1	0	0	0	0
4	400	10	227	5	BUCK; REFW; REFR; REFW TRICHROME	Late PM-E Mod	Late 19th-E 20th C	From large jars and bowls	3	1	6	0	0
4	402	2	17		REFR	Late PM-E Mod	Late 19th-E 20th C	Body sherds from jars	0	0	2	0	0
5	500	9	109	6	BUCK, REFR, REFW, REFW MONO, REFW POLY (BANDED), STAFF	Late PM-E Mod	Late 19th-E 20th C	Includes large jars, bowls, plates	2	2	5	0	0
6	600	6	57	5	BUCK; REFW; REFR; REFW BICHROME	Late PM-E Mod	Late 19th-E 20th C	Includes teapot lid, storage jars, plates & bowl	1	0	4	0	1
7	700	6	38		TRB, REFW	Late PM-E Mod	Late 19th-E 20th C	Plate sherds	2	0	4	0	0
7	704	2	9	2	REFR	Late PM-E Mod	Late 19th-E 20th C	Base sherd with black glaze; body sherd with greenish-orange glaze	0	1	1	0	0
8	800	9	80	4	REFR, STAFF-type, REFW	Late PM-E Mod	Late 19th-E 20th C	From jars and a probable plate	0	1	8	0	0
9	900	15	126	8	TRB, PEARL, BEARTH, REFR, REFW, ENGS	Late PM-E Mod	Late 19th-E 20th C	Includes plates, jars, teacups	3	4	6	2	0
10	1000	11	151	8	BUCK; TRB; REFW; BISCUIT	Late PM-E Mod	Late 19th-E 20th C	Includes jar sherds, plate sherds	4	0	8	0	0
16	1602	1	11	1	REFW MONO	Late PM-E Mod	Late 19th-E 20th C	Base sherd from cup or jar	0	1	0	0	0
17	1700	6	46	6	REFR MONO, REFR POLY, BEARTH MONO, REFW MONO	Late PM-E Mod	Late 19th-E 20th C	Includes jars and bowls	1	2	3	0	0
19	1900	1	7	1	REFR	Late PM-E Mod	Late 19th-E 20th C	Rim sherd from a storage jar	1	0	0	0	0
19	1902	1	14	1	CREAM MONO	Late PM-E Mod	Late 19th-E 20th C	Rim sherd from a large decorative plate	1	0	0	0	0
22	2203	15	82	9	TRB, TRG, REFW, REFR, BEARTH	Late PM-E Mod	Late 19th-E 20th C	Includes scalloped plate, jar sherds, small plates or saucers	6	1	9	0	0
-	u/s	3	23	3	REFR, BUCK, STAFF	Late PM-E Mod	Late 19th-E 20th C	Very abraded sherds from a plate and jars	0	0	3	0	0
11	u/s	3	17	3	REFR MONO, REFW MONO, REFW POLY	Late PM-E Mod	Late 19th-E 20th C	Jars	0	0	3	0	0
		102	**1037**	**64**					**26**	**13**	**62**	**2**	**1**

Key: Tr No = Trench number; Con = context; Wgt = weight; Qty = quantity; MNV = minimum number of vessels; Late PM – E Mod = late post-medieval to early modern; C = century; Wgt = weight; Qty = quantity; REFEW = refined white earthenware; MONO = monochrome; BUCK = Buckley-type red earthenware; TRICHROME = triple banded ware; POLY = multiple banded ware; BICHROME = double-banded ware; TRB = blue Transfer printed ware; STAFF = Staffordshire-type slipware; PEARL = Pearlware; BISCUIT = possible biscuit-type ware (unglazed buff earthenware); ENGS = English stoneware; CRE = coarse red earthenware; REFR = refined red earthenware; CREAM = Creamware; TRG = green Transfer printed ware; BEARTH = buff earthenware

Table 4: Other Ceramics

Tr No	Con	Qty	Wgt (g)	Fabric Code	Date	Refined Date	Notes
2	200	1	3	REFW / PORC	Late PM-E Mod	Late 19th-E 20th C	Stand from a small ceramic figurine / statuette

Key: Tr No = Trench number; Con = context, Late PM-E Mod = late post-medieval to early modern; C = century; Wgt = weight; Qty = quantity

Table 5: Ceramic Building Material

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
5	500	3	72	Late PM-E Mod	Late 19th-E 20th C	Miscellaneous brick fragments
6	600	1	840	Late PM-E Mod	Late 19th-E 20th C	Partial brick
7	700	1	44	Late PM-E Mod	Late 19th-E 20th C	Partial brick fragment
8	800	1	79	Late PM-E Mod	Late 19th-E 20th C	Partial brick fragment
		6	**1035**			

Key: Tr No = Trench number; Con = context, Late PM-E Mod = late post-medieval to early modern; C = century; Wgt = weight; Qty = quantity

Table 6: Clay Tobacco Pipe Data

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
2	200	1	9	PM	1680-1720 AD	Moulded bowl fragment, 2.40mm int. D
5	500	1	1	PM	1720-1750 AD	2.26mm int. D.
6	600	1	3	PM	1720-1750 AD	2.29mm int D
9	900	1	2	PM	1750-1800 AD	1.78mm int D.
10	1000	1	3	PM	1720-1750 AD	2.02mm int. D
22	2203	1	2	PM	1680-1720 AD	2.31mm int. D
-	u/s	1	3	PM	1720-1750 AD	2.02mm int. D
		7	**23**			

Key: Tr No = Trench number; Con = context; PM = post-medieval; C = century; Wgt = weight; Qty = quantity, int = internal; D = diameter; AD = Anno domini

Table 7: Internal Stem Diameter Measurements for dating Clay Tobacco Pipe (Kipfer 2006, 8)

Stem-hole diameter (in/XX)	Conversion (mm) 1 inch=25mm, 1/64 (inch)=0.1mm	Dates
9/64	9x0.4mm=3.6	1590-1620
8/64	8x0.4mm=3.2	1620-1650
7/64	7x0.4mm=2.5	1650-1680
6/64	6x0.4mm=2.4	1680-1720
5/64	5x0.4mm=2	1720-1750
4/64	4x0.4mm=1.6	1750-1800

Table 8: Glass Data

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
7	700	1	4	Late PM-E Mod	Late 19th-E 20th C	Dark green bottle shard
8	800	1	20	Late PM-E Mod	Late 19th-E 20th C	Dark green bottle shard
9	900	1	4	Late PM-E Mod	Late 19th-E 20th C	Body shard from dark green bottle
17	1700	1	9	Late PM-E Mod	Late 19th-E 20th C	Clear bottle glass
		4	**37**			

Key: Tr No = Trench number; Con = context; C = century; Wgt = weight; Qty = quantity; Late PM-E Mod = late post-medieval to early modern

Table 9: Conglomerate Data

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
4	403	9+	1992	Mod	20th C	Modern conglomerate - very friable, crumbly, is this from coal extraction?

Key: Tr No = Trench number; Con = context; C = century; Wgt = weight; Qty = quantity; Mod = modern

Table 10: Stone data

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
4	402	4+	420	Late PM-E Mod?	Late 19th-E 20th C?	Natural stone, not archaeological

Key: Tr No = Trench number; Con = context; C = century; Wgt = weight; Qty = quantity

Table 11: Slate Data

Tr No	Con	Qty	Wgt (g)	Date	Refined Date	Notes
2	200	1	53	Late PM-E Mod?	Late 19th-E 20th C?	Probable roofing slate, quite thin, no perforations or marks

Key: Tr No = Trench number; Con = context; C = century; Wgt = weight; Qty = quantity; Late PM-E Mod = late post-medieval to early modern

6 ENVIRONMENTAL ASSESSMENT

6.1 Introduction

6.1.1 Two environmental samples were presented for assessment following the archaeological works at the Former Marchon Site, Whitehaven. These were assessed, along with hand-collected animal bone and shell weighing 372g, for their potential to address any palaeoenvironmental research questions, palaeodiets, past landscape use, crop husbandry and animal husbandry practices.

6.1.2 This report presents the results of the assessment of the environmental samples, palaeobotanical and charcoal remains in accordance with Campbell *et al.* (2011).

6.2 Methodology

6.2.1 The bulk environmental samples were processed at Wardell Armstrong LLP in Carlisle. The colour, lithology, weight, and volume of each sample was recorded using standard Wardell Armstrong pro forma recording sheets *cf.* Table 1. The samples were processed with 500-micron retention and flotation meshes using the Siraf method of flotation (Williams 1973). Once dried, the residues from the retention mesh were sieved to 4mm and examined for artefacts and ecofacts; if found these would have been removed from the retent and retained. The smaller fraction was scanned with a magnet for microslags such as hammerscales. This fraction was then examined for smaller artefacts such as beads.

6.2.2 The flots were retained and scanned using a stereo microscope (up to x45 magnification). Any non-palaeobotanical finds were noted on the flot pro forma. Flot data is presented in Table 2.

6.2.3 The ecofactual material was cleaned prior to examination; the animal bone was wet-washed while the shell was left to air-dry then dry-brushed.

6.2.4 Guidelines adhered to for zooarchaeological analysis include 'Animal Bones & Archaeology: recovery to archive (Baker & Worley 2019) plus reference material from Schmid (1972), Serjeantson (1996), Hillson (1992) and Ruscillo (2006). The author's in-house skeletal reference collection and technical manual were also used to aid identification of species. The material was also assessed on its potential for age estimation, sex determination and measurements for withers heights. Butchery marks, gnaw-marks and pathologies / trauma were also observed and recorded.

6.2.5 The ecofacts have been assessed for its local, regional, and national potential in line with the archaeological research framework for North West England (Brennand et al 2006 & 2007).

6.3 Results

6.3.1 Environmental samples

6.3.2 Two single tubs from suspected Mesolithic pits, **<1>** from fill **(904)** of pit **[903]** and **<2>** from fill **(906)** from pit **[905]**, consisted of a mixture of sandy clay and sand sediment matrix. The total weight of sediment processed was 8kg (8l). These were taken for the potential to yield Mesolithic lithics.

6.3.3 No ecofactual or artefactual remains were recovered from the samples and the magnetised matter recovered using the magnet was all naturally occurring magnetised geology.

6.4 Animal bone

6.4.1 A total of six animal bones, weighing 239g, was recovered from four contexts and as unstratified material during the archaeological investigation (Tables 3 and 4).

6.4.2 A minimum number of six individuals is present in this small assemblage.

6.4.3 The range of species present in this small assemblage is limited and comprises equids, caprovids and cattle as well as unspecified medium to large-sized ungulate species. Avian species, fish, rodents and smaller mammals were absent.

6.4.4 A limited range of anatomical elements is present and includes tibial portions, teeth, pelvis portions and metapodials.

6.4.5 The animal bone originates from adult animals.

6.4.6 Butchery marks, gnaw-marks and unusual pathologies were not observed.

6.4.7 The animal bone was in very poor to moderate condition; cortical bone surfaces were very flaky and damaged.

6.5 Molluscs (marine)

6.5.1 A total of two marine molluscs, weighing 133g, was recovered from topsoil **(500)** and from palaeochannel deposit **(2203)** (Table 4). The shells were in good condition in the main and were fairly large in size.

6.5.2 Both shells comprise oyster (*Ostrea edulis*). An estimated minimum of two animals is present in this small assemblage; both valves are right-sided.

6.5.3 Notching and epibonts were absent on both shells.

6.6 Discussion

6.6.1 As no ecofactual remains were yielded from these samples, there is no discussion to be had. No Mesolithic artefacts were observed; traditionally Mesolithic environmental material in this region were sparse so the absence of environmental material is not surprising.

6.6.2 The animal bone and shell assemblage likely comprised domestic food waste. The teeth present in the assemblage may have originated on the site through casual loss.

6.6.3 The oyster shell present in the assemblage was unsurprising given the close proximity of the site to the west Cumbrian coastline.

6.6.4 In terms of date range, the ecofacts are likely to span the Victorian to modern periods.

6.7 Statement of potential and recommendations

6.7.1 No material was present that was suitable for radiocarbon dating.

6.7.2 Due to no material being present, there is no further work required on the environmental samples. The ecofactual assemblage is of low archaeological potential overall and it is recommended that it not be retained within the site archive.

Table 1: sample data

C	<>	Desc	Colour	PW	PV	SW	SV	FW	FV
904	1	Fill of Mesolithic pit [903]	very dark reddish brown	6	6	1230	900	0.7	2
906	2	Fill of Mesolithic pit [905]	very dark yellowish brown	2	2	313	150	0.1	<1

Key: C=context, <>=sample number, PW=processed weight, PV=processed volume, SW=sorting weight, SV=sorting volume, FW=flot weight, FV=flot volume

Table 2: flot data

C	<>	Desc	FW	FV
904	1	comminuted charcoal 20%; sand 70%; very fine rootlets 10%	0.7	2
906	2	comminuted charcoal 10%; sand 90%	0.1	<1

Key: C=context, <>=sample number, FW=flot weight, FV=flot volume

Table 3: distribution of ecofacts by context

Tr No	Con	Context Description	AB	SHE
3	302	Subsoil: loose mid reddish brown clayey silt	Yes	
4	400	Topsoil: friable dark brown silt	Yes	
5	500	Topsoil: friable dark brown silt	Yes	Yes
6	600	Topsoil: loose dark brown silt	Yes	
22	2203	Palaeochannel deposit: firm mid reddish brown silty clay		Yes
8	u/s	Not given	Yes	

Key: Tr No = Trench Number; u/s = unstratified; Con = context; AB = animal bone; SHE = shell; HUM = human bone

Table 4: Ecofactual data in context order

Tr No	Con	Element	Qty	Wgt (g)	MNI	Species	Age	Sex	Butch	Gnaw	Path	Measure	Notes
3	302	Distal humerus	1	3	1	Caprovid (sheep/goat)	A	-	-	-	-	-	Poor preservation, very flaky
4	400	Portion of limb bone	1	4	1	Medium-sized ungulate (sheep/goat/small deer)	A	-	-	-	-	-	Poor preservation, very flaky
5	500	Right valve	1	79	1	*Ostrea edulis* (oyster)	-	-	-	-	-	-	Good preservation, no flaking, no notching, no epibonts
5	500	Tibia shaft	1	69	1	Large-sized ungulate (cattle/horse/large deer)	A	-	-	-	-	-	Poor preservation, very flaky
6	600	Metapodial ; partial pelvis	2	142	2	*Equus caballus* (horse); caprovid (sheep/goat)	A	-	-	-	-	-	Poor preservation
22	2203	Right valve	1	54	1	*Ostrea edulis* (oyster)	-	-	-	-	-	-	Good preservation, no flaking, no notching, no epibonts
8	u/s	Tooth	1	21	1	*Bos taurus* (cattle)	A	-	-	-	-	-	Fair preservation
			8	**372**	**8**								

Key: Tr No = Trench Number; Con = context; C = century; Wgt = weight; Qty = quantity; MNI = minimum number of individuals; Bos taurus = cattle; butch = chop/knife marks; gnaw = any rodent or canine gnaw marks; path = any pathologies or injuries; measure = any complete bones suitable for withers heights estimation (stature); A = adult.

7 CONCLUSIONS

7.1 Interpretation

7.1.1 During the archaeological field evaluation at the former Marchon Chemical Works, Whitehaven, 25 trenches were excavated. From these 25 trenches three were situated within the former Chemical works site, 15 were within Area 1 and six were within Area 2 (Figure 3).

7.1.2 The purpose of the evaluation was to characterise the presence or absence of any archaeological deposits within the development site and the impact the proposed development would have on them.

7.1.3 All trenches were excavated down to the top of the natural substrate, except trenches 24 and 25. Topsoil was removed from these two trenches to reveal what remains sub-surface of the former chemical works.

7.1.4 A number of land drains were recorded across the trenches in the western part of Area 1 and the northern part of Area 2. Some of these land drains were confirmed as causing geophysical anomalies in the 2019 magnetometry survey (Wardell Armstrong 2020a).

7.1.5 Plough marks were identified in several trenches across Areas 1 and 2, all aligned west to east.

7.1.6 Archaeological remains were identified in six trenches with the survival of the features in good condition.

7.1.7 Two Mesolithic shallow pits were investigated and sampled. The samples did not contain any ecofactual remains. One pit produced a single flint blade. No other prehistoric activities were identified during trial trenching.

7.1.8 A small short lived quarry was investigated, which has not been identified from any Ordnance Survey maps dating prior to 1865. A trackway to the east of the identified quarry was also investigated and found to have multiple wheel ruts with industrial waste backfill. This backfill could not have come from the quarry itself and perhaps shows the multiple use of the trackway by various industrial activities located close by and is evidence of continued use of the trackway by later industrial activities. This trackway may have served its purpose, been abandoned and other trackways were created in the vicinity of the development area for use.

7.1.9 With the exception of the flint artefact, the finds assemblage for the site spans the Victorian to modern periods with the bulk of the material recovered from the topsoil and subsoil.

7.2 Significance

7.2.1 The archaeological remains recorded during this phase of work at the Former Marchon Chemical works, Whitehaven, have added additional insight into the known present archaeological remains on this site and the surrounding landscape.

7.2.2 The Mesolithic pits and flint blade recovered from Trench 9 in Area 1 highlight the wider use of this landscape during this period. Whilst the potential quarry not recorded on mapping from 1865 onwards highlights that the area has been in use for industrial purposes prior to already known activities.

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APPENDIX 1: TRENCH DESCRIPTIONS

Trench 1

Length: 29.90m Width: 1.50m Orientation: North-North-West to South-South-East

Maximum Depth: 0.54m Minimum Depth: 0.29m

Context Number	Context Type	Description	Height/Depth	Discussion
100	Topsoil	Loose mid brownish grey clayey silt	0.24m – 0.49m	
101	Natural	Firm mid yellowish pink/red clay	-	
102	Subsoil	Friable mid reddish brown clayey silt	0.05m	

Trench 2

Length: 51.40m Width: 1.50m Orientation: West to East

Maximum Depth: 0.55m Minimum Depth: 0.18m

Context Number	Context Type	Description	Height/Depth	Discussion
200	Topsoil	Loose mid brownish grey clayey silt	0.14m – 0.24m	
201	Natural	Firm mid yellowish pink clay and brownish yellow bedrock	-	
202	Subsoil	Friable mid reddish brown clayey silt	0.0m – 0.15m	

Trench 3

Length: 30m Width: 1.50m Orientation: North to South

Maximum Depth: 1.40m Minimum Depth: 0.40m

Context Number	Context Type	Description	Height/Depth	Discussion
300	Topsoil	Loose mid brownish grey clayey silt	0.25m	
301	Natural	Compact mid greyish yellow bedrock and a soft dark pinkish brown silty clay	-	Bedrock was exposed at 72.46 aOD in the central area of the trench. In the northern area of the trench natural bedrock incorporating pockets of a dark pinkish brown were exposed at 73.74 aOD.
302	Subsoil	Loose mid reddish brown clayey silt	0.30m	

303	Deposit	Soft mid reddish brown silty clay with rare stone inclusions	0.85m	Deposit in central area of the trench, natural infill covering the potential quarry area, different to that of subsoil.

Trench 4

Length: 50.10m Width: 1.50m Orientation: West to East

Maximum Depth: 0.76m Minimum Depth: 0.30m

Context Number	Context Type	Description	Height/Depth	Discussion
400	Topsoil	Friable dark brown silt	0.30m	
401	Natural	Compact light brownish orange silty clay and stony	-	
402	Deposit	Compact light grey industrial waste (100%)	0.13m	Forms part of rudimentary trackway
403	Deposit	Compact greyish black flaky type of industrial waste, possibly as a result of coal extraction (97%) with inclusions of slag (3%)	0.14m	Forms rudimentary trackway, contains cartwheel ruts
404	Fill	Firm dark brown silt with small flecks of coal and industrial waste	0.22m	Possible fill of roadside drainage ditch
405	Cut	Linear, gentle top break of slope, gentle sides, gentle base break of slope, curving base. Orientated north south, 1m wide. Fills (**404**)	0.22m	Cut for possible roadside ditch
406	Cut	Linear, sharp top break of slope, moderately sloping sides, gentle base break of slope, curving base. Orientated north south, 0.40m wide. Fills (**403**), [**407**], (**408**)	0.38m	Primary cuts for two sets of cartwheel tracks
407	Cut	Linear, sharp top break of slope, gently curving sides, gentle base break of slope, curving base. Orientated north south, 0.26m wide. Fills (**408**)	0.26m	Secondary cuts for cartwheel ruts
408	Fill	Hard, flaky dark greyish black industrial waste (100%)	0.26m	Fill of secondary wheel ruts (Industrial waste), possible from coal mining

Trench 5

Length: 30.50m Width: 1.50m Orientation: West to East
Maximum Depth: 0.85m Minimum Depth: 0.30m

Context Number	Context Type	Description	Height/Depth	Discussion
500	Topsoil	Friable dark brown silt	0.25m	
501	Natural	Compact light brownish orange silty clay Stoney	-	
502	Deposit	Hard but flaky greyish black industrial waste (100%) with some light brown clay lenses containing flecks of coal <12mm	0.20	Possibly from coal extraction, forming a rudimentary road surface used by quarry carts. Constitutes the fills of cartwheel ruts
503	Fill			Initially thought to be an archaeological feature due to its compaction and the amount of large stones in it. Further work showed it to be the fill of a large modern drain run trench
504	Cut	Linear, sharp top break of slope, steep sides, moderate base break of slope, curved base, orientated north south. Fill (**502**)	0.13m – 0.21m	Cuts of various sizes in the natural substrate (**501**) formed by regular cartwheel traffic
505	Deposit	Solid, white grey industrial waste (100%)	0.50m	Compacted white/grey industrial waste forming part of a rudimentary track surface, possibly used by quarry carts

Trench 6

Length: 51.40m Width: 1.50m Orientation: West to East
Maximum Depth: 0.90m Minimum Depth: 0.40m

Context Number	Context Type	Description	Height/Depth	Discussion
600	Topsoil	Loose dark brown silt	0.40m	
601	Natural	Compact light brownish orange silt with stone inclusions	-	The natural varied along the length of the trench. At the eastern end the geology consisted of layered yellow limestone bedrock for a distance of 7.80m. At the western end of the trench was a Stoney area measuring 8.40m in length. This is believed to be the cause of the east-west geophysical anomaly

				and not the result of archaeology. The natural substrate in the central area of the trench consisted of a hard, light, brown/orange, Stoney/silt.
602	Subsoil	VOID	VOID	VOID
603	Deposit	Compact orange clay, 11.10m wide	0.30m	This was cut by a 'v' shaped ditch for modern drainage

Trench 7

Length: 30m Width: 1.50m Orientation: North to South

Maximum Depth: 0.93m Minimum Depth: 0.24m

Context Number	Context Type	Description	Height/Depth	Discussion
700	Topsoil	Loose mid brownish grey clayey silt	0.21m	
701	Natural	Compact light reddish yellow silty clay	-	In the central area of the trench the geology consisted of a considerable drop in the bedrock, this is believed to be the cause of the east-west geophysical anomaly and not the result of the archaeology.
702	Subsoil	Soft mid yellowish brown silty clay	0.06m – 0.94m	The drop in bedrock at the centre of the trench was the cause of the varied depth of the subsoil

Trench 8

Length: 50m Width: 1.50m Orientation: North to South

Maximum Depth: 0.57m Minimum Depth: 0.25m

Context Number	Context Type	Description	Height/Depth	Discussion
800	Topsoil	Soft mid greyish brown silty clay	0.30m	
801	Natural	Compact light pinkish yellow clay	-	Mid trench a shallow dip in the natural was investigated, this is believed to be the cause of the east-west geophysical anomaly. Various types of natural were seen across the length of the trench, clay north to mid-section of trench and clay and gravel deposits in the south

802	Subsoil	Soft mid greyish brown silty clay	0.08m	

Trench 9

Length: 50m Width: 1.50m Orientation: West to East

Maximum Depth: 0.78m Minimum Depth: 0.23m

Context Number	Context Type	Description	Height/Depth	Discussion
900	Topsoil	Soft mid greyish brown silty clay	0.32m	
901	Natural	Compact light pinkish yellow clay	-	Mid trench a change in the natural was observed, similar to that in trench 8, this is believed to be the cause of the north-south geophysical anomaly. Various types of natural were seen across the length of the trench, bedrock to the eastern end and clays in the west
902	Deposit	Soft mid greyish brown silty clay	0.32m	
903	Cut	Circular, moderate top break of slope, 'u' shaped sides, imperceptible base break of slope, 'u' shaped base. Fill (**904**)	0.06m	Mesolithic pit, west of pit [**905**]
904	Fill	Soft black silt with tiny stone inclusions	0.06m	Fill of [**903**]. SF 1: flint microlith
905	Cut	Sub-rounded, moderate top break of slope, 'u' shaped sides, imperceptible base break of slope, 'u' shaped base. Fill (**906**)	0.06m	Mesolithic pit, east of pit [**903**]
906	Fill	Soft black silt with tiny stone inclusions	0.06m	Fill of [**905**]

Trench 10

Length: 51m Width: 1.50m Orientation: West to East

Maximum Depth: 1.20m Minimum Depth: 0.24m

Context Number	Context Type	Description	Height/Depth	Discussion
1000	Topsoil	Loose mid brownish grey clayey silt	0.26m	
1001	Natural	Compact mid greyish yellow bedrock, with	-	At the eastern end of the trench a quarry had

		pockets of soft dark pinkish brown silty clay and bands of compact light yellowish brown silty clay		exposed the bedrock and to the western end a band of natural mottled brown and yellow clay lay between bands of pink clay. These are believed to be the cause of the geophysical anomalies in the eastern and western ends of trench 10 and not the result of archaeology.
1002	Deposit	Loose mid reddish brown clayey silt	0.22m	

Trench 11

Length: 30.80m Width: 1.50m Orientation: West to East

Maximum Depth: 0.48mm Minimum Depth: 0.28mm

Context Number	Context Type	Description	Height/Depth	Discussion
1100	Topsoil	Loose mid brownish grey clayey silt	0.20m – 0.40m	
1101	Natural	Firm mid yellowish pink and brownish red clay	-	

Trench 12

Length: 30m Width: 1.50m Orientation: West to East

Maximum Depth: 0.30m Minimum Depth: 0.40m

Context Number	Context Type	Description	Height/Depth	Discussion
1200	Topsoil	Loose mid brownish grey clayey silt	0.25m – 0.30m	
1201	Natural	Firm mid yellowish pink clay	-	

Trench 13

Length: 30m Width: 1.50m Orientation: North West to South East

Maximum Depth: 0.54mm Minimum Depth: 0.28m

Context Number	Context Type	Description	Height/Depth	Discussion
1300	Topsoil	Loose mid reddish greyish brown silty clay	0.28m	
1301	Natural	Compact light yellowish red to a light silty clay	-	

Trench 14

Length: 50m Width: 1.50m Orientation: West to East
Maximum Depth: 0.60m Minimum Depth: 0.43m

Context Number	Context Type	Description	Height/Depth	Discussion
1400	Topsoil	Loose light brownish grey clayey silt	0.27m	
1401	Natural	Compact light yellowish red silty clay	-	
1402	Subsoil	Loose mid reddish brown clayey silt	0.10m	

Trench 15

Length: 30m Width: 1.50m Orientation: West to East
Maximum Depth: 0.40mm Minimum Depth: 0.35m

Context Number	Context Type	Description	Height/Depth	Discussion
1500	Topsoil	Loose mid brown silty clay	0.33m	
1501	Natural	Compact light yellowish brown silty clay	-	

Trench 16

Length: 30m Width: 1.50m Orientation: West to East
Maximum Depth: 0.60m Minimum Depth: 0.40m

Context Number	Context Type	Description	Height/Depth	Discussion
1600	Topsoil	Loose mid brown silty clay	0.40m	
1601	Natural	Compact light yellowish brown silty clay	-	

Trench 17

Length: 30m Width: 1.50m Orientation: North East to South West
Maximum Depth: 0.36m Minimum Depth: 0.22m

Context Number	Context Type	Description	Height/Depth	Discussion
1700	Topsoil	Loose mid brown silty clay	0.17m	
1701	Natural	Compact light yellowish brown silty clay	-	

Trench 18

Length: 30m Width: 1.50m Orientation: West to East

Maximum Depth: 0.36m Minimum Depth: 0.20m

Context Number	Context Type	Description	Height/Depth	Discussion
1800	Topsoil	Loose mid brown silty clay	0.17m	
1801	Natural	Compact light reddish yellow brown silty clay	-	

Trench 19

Length: 30m Width: 1.50m Orientation: West to East

Maximum Depth: 0.37m Minimum Depth: 0.28m

Context Number	Context Type	Description	Height/Depth	Discussion
1900	Topsoil	Loose mid brown silty clay	0.28m	
1901	Natural	Compact light yellowish brown silty clay	-	

Trench 20

Length: 30m Width: 1.50m Orientation: North West to South East

Maximum Depth: 0.41m Minimum Depth: 0.27m

Context Number	Context Type	Description	Height/Depth	Discussion
2000	Topsoil	Loose mid greyish brown silty clay	0.21m	
2001	Natural	Compact light yellowish brown silty clay	-	

Trench 21

Length: 30m Width: 1.50m Orientation: North to South

Maximum Depth: 0.60m Minimum Depth: 0.19m

Context Number	Context Type	Description	Height/Depth	Discussion
2100	Topsoil	Loose mid greyish brown silty clay	0.21m	
2101	Natural	Compact light yellowish reddish brown	-	

Trench 22

Length: 30m Width: 1.50m Orientation: North East to South West

Maximum Depth: 0.63m Minimum Depth: 0.17m

Context Number	Context Type	Description	Height/Depth	Discussion

2200	Topsoil	Loose mid greyish brown silty clay	0.19m	
2201	Natural	Compact light yellowish brown silty clay	-	
2202	Subsoil	Loose mid brown silty clay	0.33m	
2203	Deposit	Firm mid reddish brown silty clay	-	Seen within the geophysical anomaly identified during survey. Paleochannel deposit.

Trench 23

Length: 24.10m Width: 1.50m Orientation: South West to North East

Maximum Depth: 0.50m Minimum Depth: 0.31m

Context Number	Context Type	Description	Height/Depth	Discussion
2300	Topsoil	Loose mid reddish brown silty clay	0.10m	
2301	Natural	Compact mid brownish red silty clay	-	

Trench 24

Length: 16.30m Width: 1.50m Orientation: North to South

Maximum Depth: 0.82m Minimum Depth: 0.07m

Context Number	Context Type	Description	Height/Depth	Discussion
2400	Topsoil	Loose mid greyish brown clayey silt with modern rubble inclusions	0.07m	Concrete in the northern part, two thirds of the trench was filled with rubble, building material

Trench 25

Length: 18m Width: 1.50m Orientation: West to East

Maximum Depth: 0.35m Minimum Depth: 0.20m

Context Number	Context Type	Description	Height/Depth	Discussion
2500	Topsoil	Loose id greyish brown clayey silt with heavy rooting	0.09m	Contaminated compact ground

APPENDIX 2: PLATES

Plate 1; Trench 1 post excavation overshot, facing south-south-west, Digi: 285, 2 x 1m scales.

Plate 2; Trench 2 post excavation overshot, facing west, Digi: 236, 2 x 1m scales.

Plate 3; Trench 3 post excavation overshot oblique, facing north-west, Digi: 270, 1 x 1m and 1x 2m scales.

Plate 4; Trench 4 post excavation overshot, facing east, Digi: 268, 1 x 1m and 1x 2m scales.

Plate 5; Trench 4 south facing section oblique, facing north-west, Digi: 74, 1 x 1m and 1x 2m scales.

Plate 6; Trench 5 post excavation overshot, facing west, Digi: 50, 2 x 1m scales.

Plate 7; Trench 5 north facing section, facing south, Digi: 207, 1 x 2m scales.

Plate 8; Trench 6 post excavation overshot, facing west, Digi: 30, 2 x 1m scales.

Plate 9; Trench 6 north facing section oblique, facing south-west, Digi: 104, 1 x 2m and 1 x 1m scales.

Plate 10; Trench 6 post excavation overshot, facing east, Digi: 37, 2 x 1m scales.

Plate 11; Trench 7 post excavation overshot, facing east, Digi: 18, 2 x 1m scales.

Plate 12; Trench 7 post investigation overshot, facing north, Digi: 256, 1 x 1m and 1 x 2m scales.

Plate 13; Trench 8 post excavation overshot, facing north, Digi: 346, 1 x 1m and 1 x 2m scales.

Plate 14; Trench 8 post investigation overshot, facing east, Digi: 365, 1 x 2m scales.

Plate 15; Trench 9 post excavation overshot, facing west, Digi: 298, 1 x 2m scales.

Plate 16; Trench 9 pre-excavation overshot of Mesolithic pits, facing east, Digi: 354, 1 x 1m scales.

Plate 17; Trench 9 post excavation overshot of Mesolithic pits, facing south, Digi: 370, 1 x 1m scales.

Plate 18; Trench 10 post excavation overshot, facing north west, Digi: 274, 1 x 1m and 1 x 2m scales.

Plate 19; Trench 11 post excavation overshot, facing east, Digi: 328, 2 x 1m scales.

Plate 20; Trench 12 post excavation overshot, facing west, Digi: 302, 2 x 1m scales.

Plate 21; Trench 13 post excavation overshot, facing west, Digi: 224, 2 x 1m scales.

Plate 22; Trench 14 post excavation overshot, facing west, Digi: 6, 2 x 1m scales.

Plate 23; Trench 15 post excavation overshot, facing west, Digi: 92, 2 x 1m scales.

Plate 24; Trench 16 post excavation overshot, facing east, Digi: 116, 2 x 1m scales.

Plate 25; Trench 17 post excavation overshot, facing north-east, Digi: 122, 2 x 1m scales.

Plate 26; Trench 18 post excavation overshot, facing east, Digi: 146, 2 x 1m scales.

Plate 27; Trench 19 post excavation overshot, facing east, Digi: 140, 2 x 1m scales.

Plate 28; Trench 20 post excavation overshot, facing south-east, Digi: 170, 2 x 1m scales.

Plate 29; Trench 21 post excavation overshot, facing north-east, Digi: 214, 2 x 1m scales.

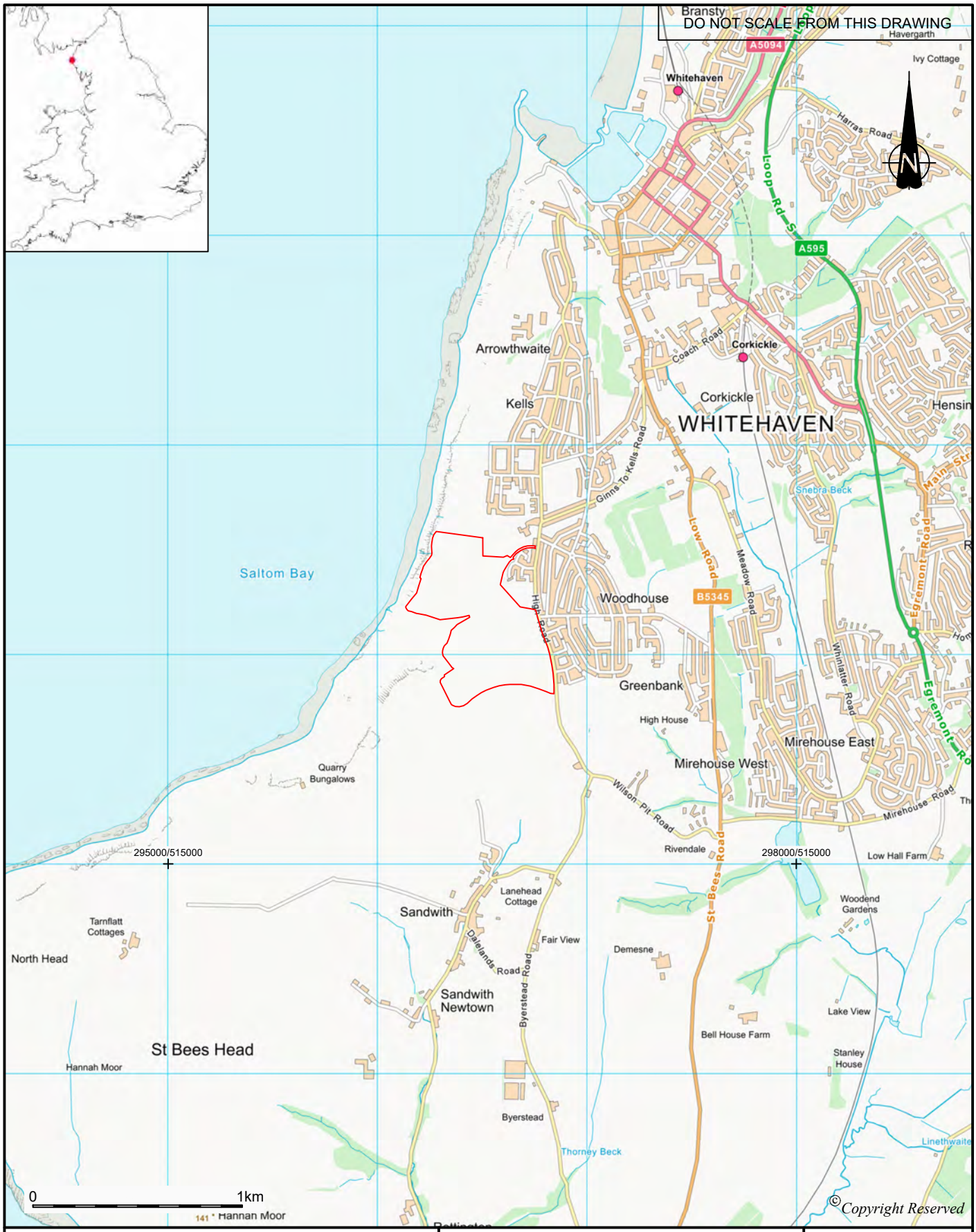
Plate 30; Trench 22 post excavation overshot, facing north-east, Digi: 160, 2 x 1m scales.

Plate 31; Trench 23 post excavation overshot, facing north-east, Digi: 82, 2 x 1m scales.

Plate 32; Trench 24 post excavation overshot, facing north-east, Digi: 186, 2 x 1m scales.

Plate 33; Trench 25 post excavation overshot, facing west, Digi: 194, 2 x 1m scales.

APPENDIX 3: FIGURES



CLIENT: Persimmon Homes	DRG No.: CL12387-101		REV: A
PROJECT: Land at Former Marchon Site, Whitehaven, Cumbria	SIZE: A4	SCALE: 1:25,000	DATE: July 2021
	DRAWN BY: HP	CHECKED BY: LCL	APPROVED BY: FG
DRAWING TITLE: Figure 1: Site location			

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N:\CP\CL12387 - FORMER MARCHON SITE WHITEHAVEN\03 - DESIGN\AUTOCAD\100 EVALUATION FIGURES\CL12387-101-A.DWG

DO NOT SCALE FROM THIS DRAWING

Site boundary

1km radius

Heritage assets

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

Persimmon Homes

PROJECT

Land at the Former Marchon Site, Whitehaven, Cumbria

DRAWING TITLE

Figure 2:
Location of heritage assets within a 1km study area

DRG No.		REV
CL12387-102		A
DRG SIZE	SCALE	DATE
A3	1:12,500	July 2021
DRAWN BY	CHECKED BY	APPROVED BY
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DO NOT SCALE FROM THIS DRAWING

Site boundary

Evaluation trenches

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

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PROJECT

Land at the Former Marchon Site, Whitehaven, Cumbria

DRAWING TITLE

Figure 3:
Trench location plan

DRG No.	REV
CL12387-103	A

DRG SIZE	SCALE	DATE
A3	1:4,000	July 2021

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HP	LCL	FG

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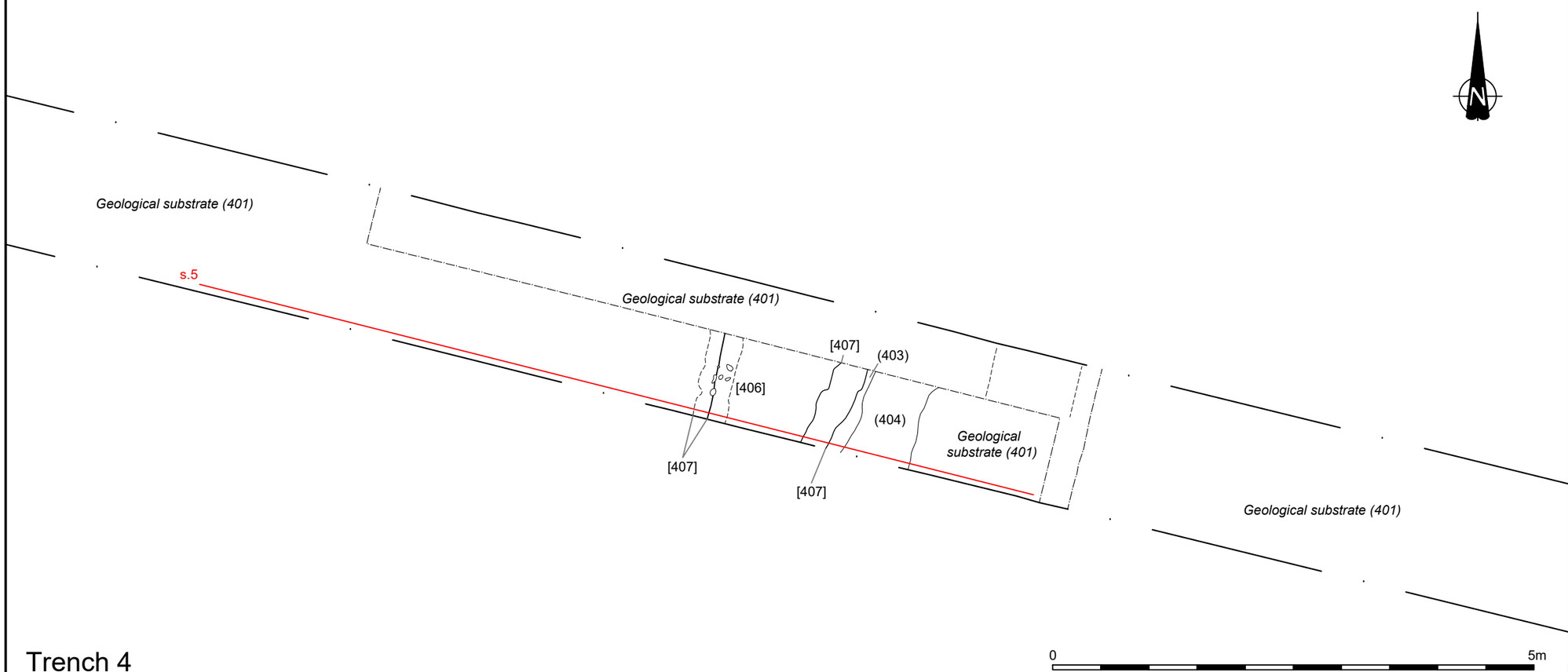
DO NOT SCALE FROM THIS DRAWING

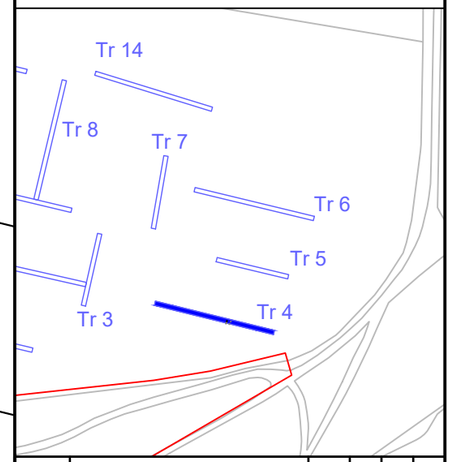
(101) Context numbers

Section location

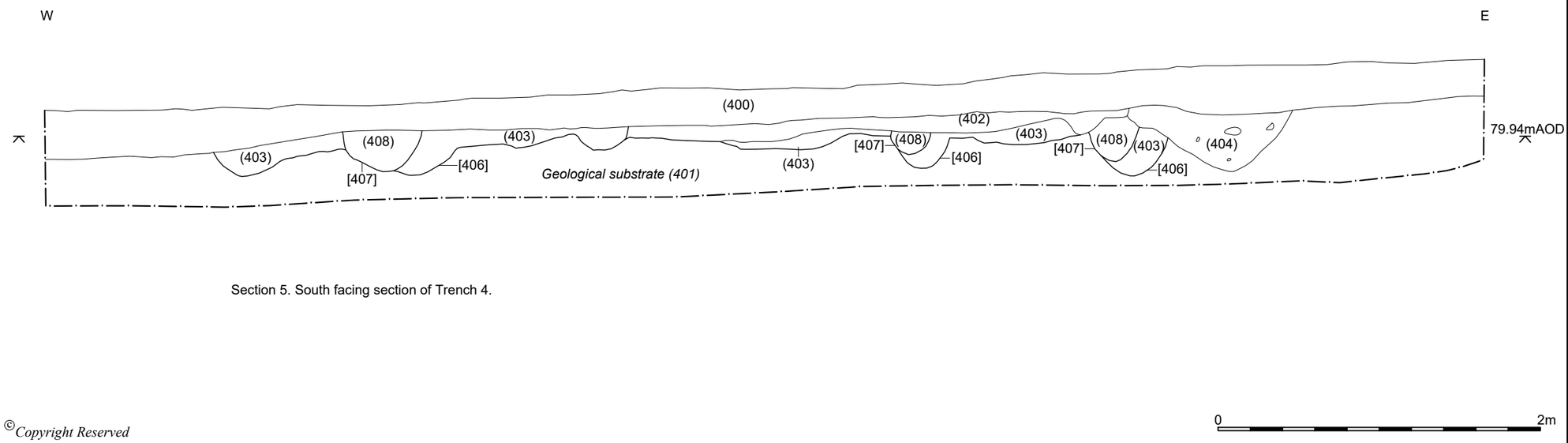
Limit of excavation

Height mAOD





Trench 4



Section 5. South facing section of Trench 4.

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

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Figure 4:
Trench 4; plan and section

DRG No.		REV
CL12387-104		A
DRG SIZE	SCALE	DATE
A3	P 1:50 / S 1:30	July 2021
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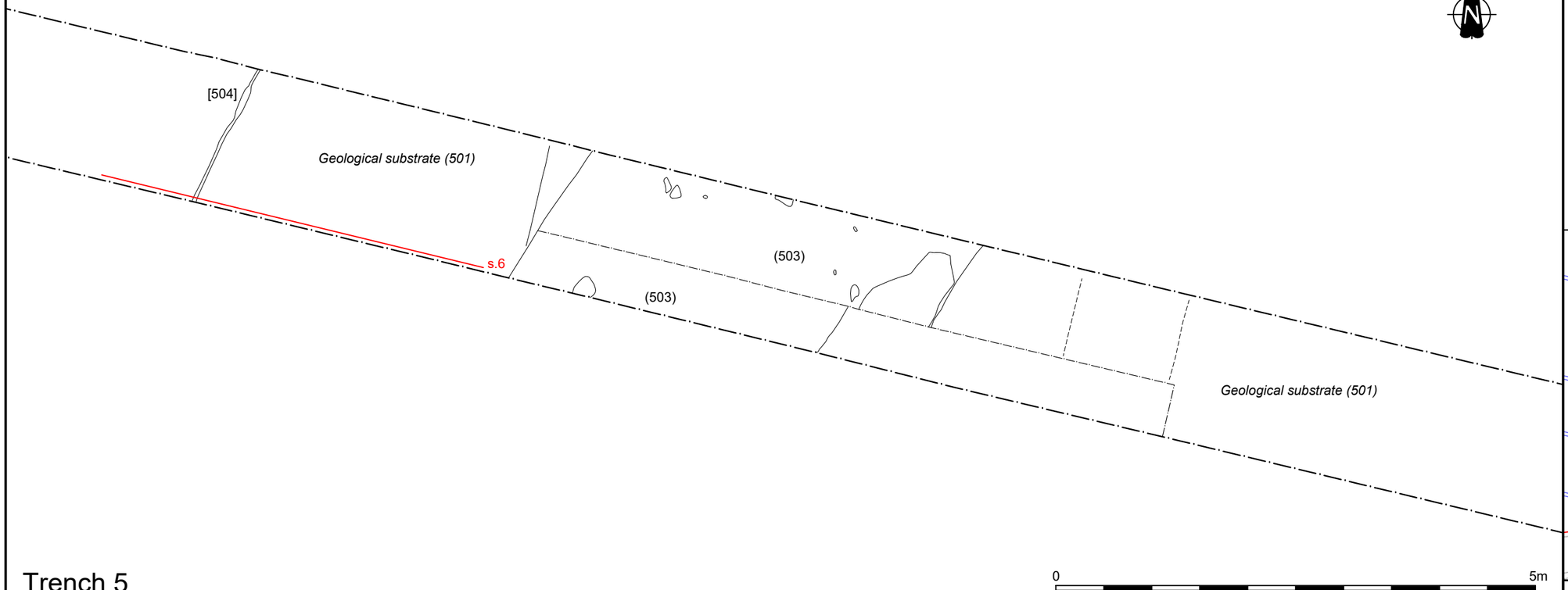
DO NOT SCALE FROM THIS DRAWING

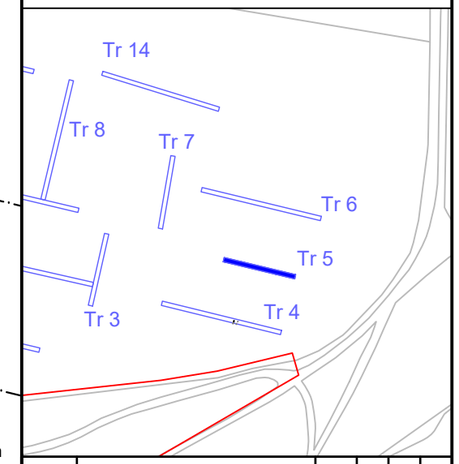
(101) Context numbers

Section location

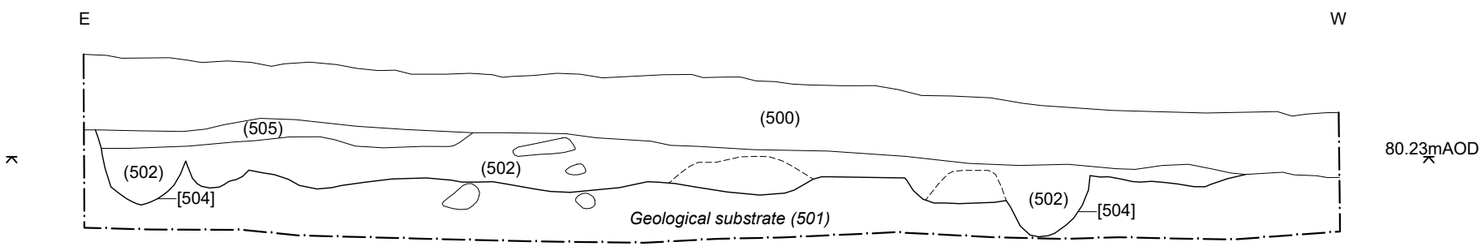
Limit of excavation

Height mAOD





Trench 5



Section 6. North facing section across rudimentary track (502).

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

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Land at the Former Marchon Site, Whitehaven, Cumbria

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Figure 5:
Trench 5; plan and section

DRG No.	REV
CL12387-105	A

DRG SIZE	SCALE	DATE
A3	P 1:50 / S 1:20	July 2021

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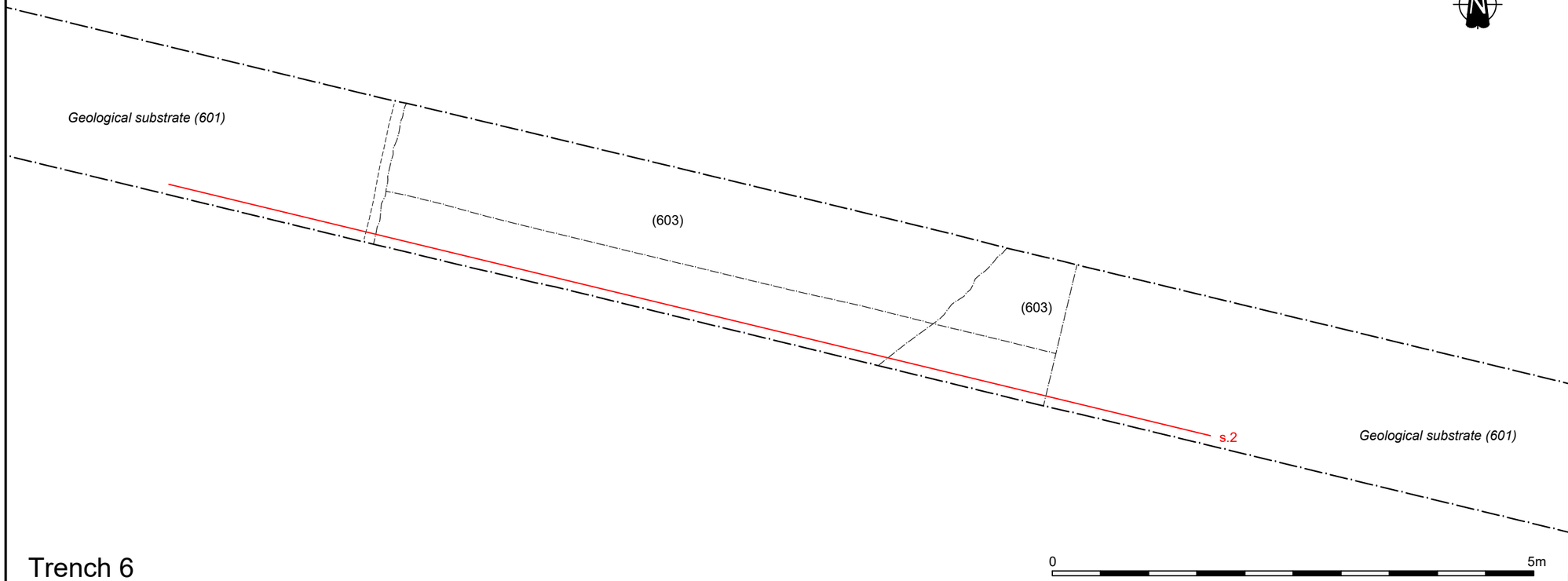
(101) Context numbers

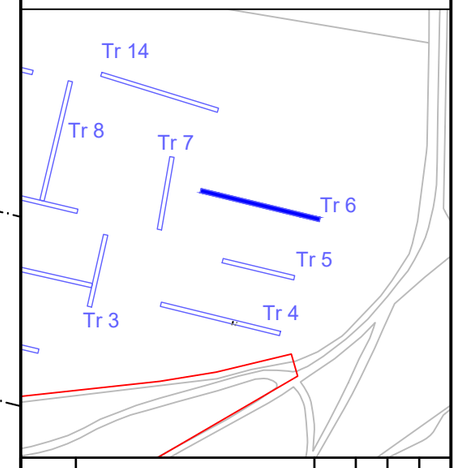
Section location

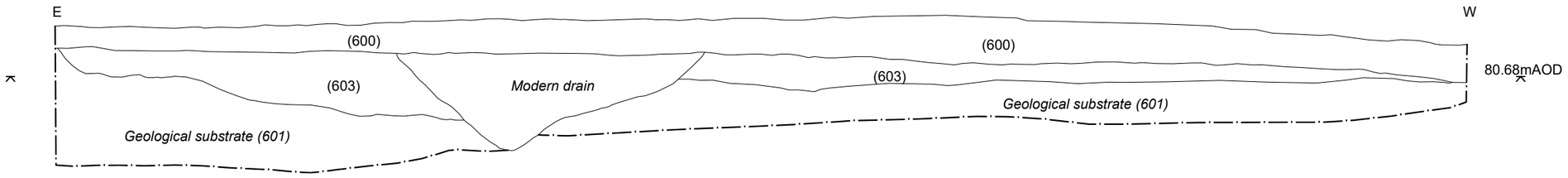
Limit of excavation

Height mAOD



Trench 6





Section 2. North facing section of Trench 6.

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

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Land at the Former Marchon Site, Whitehaven, Cumbria

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Figure 6:
Trench 6; plan and section

DRG No.	REV
CL12387-106	A

DRG SIZE	SCALE	DATE
A3	P 1:50 / S 1:40	July 2021

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(101) Context numbers

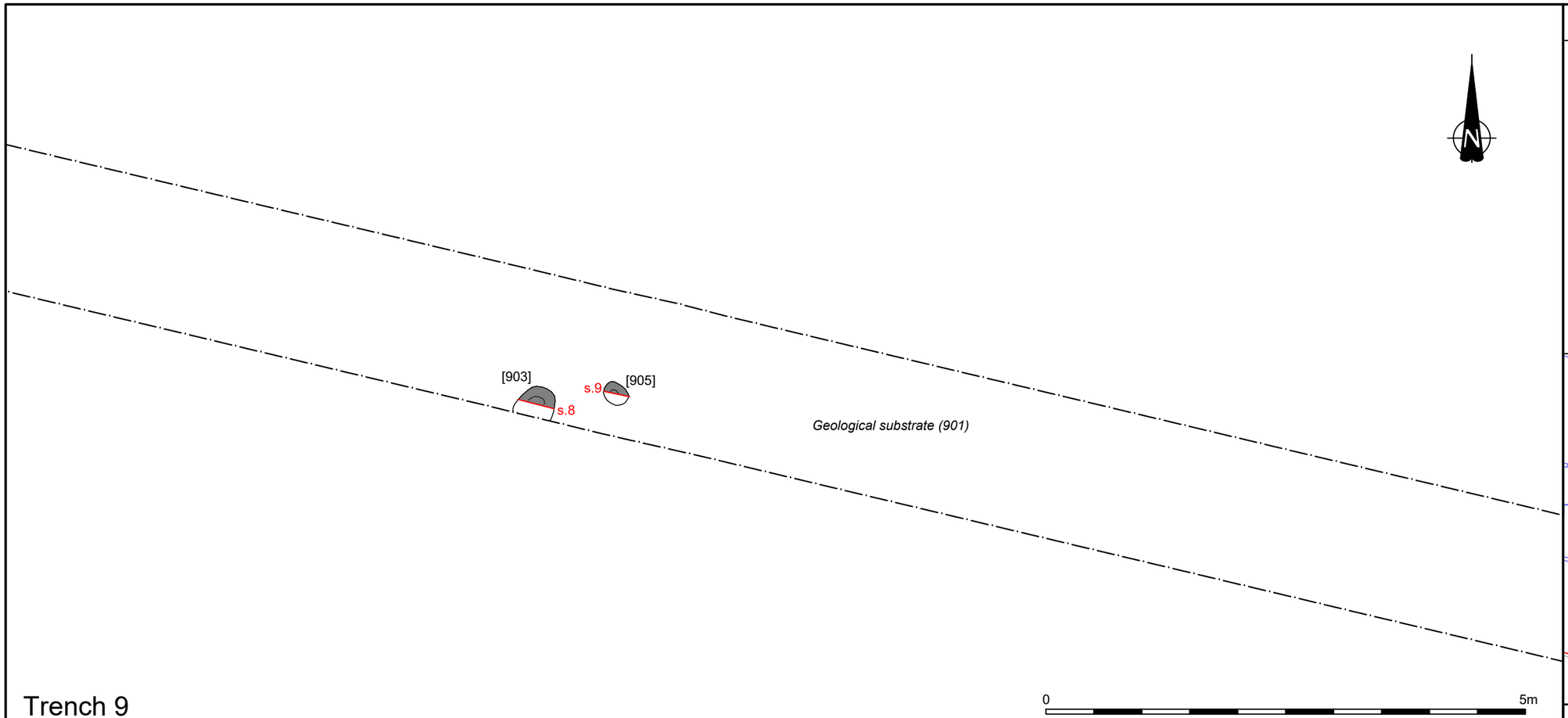
Section location

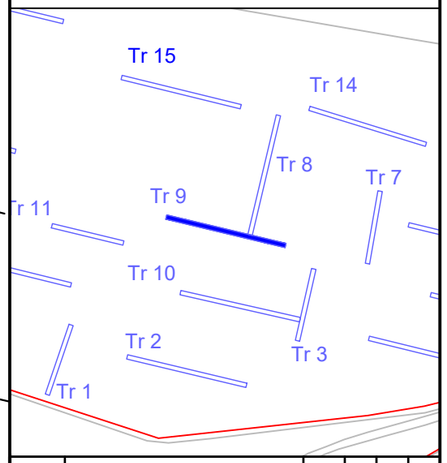
Limit of excavation

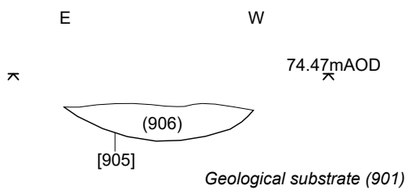
Excavated area

Height mAOD

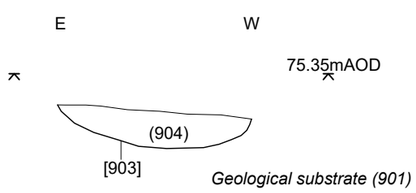
Trench 9







Section 8. North facing section across Pit [905].



Section 9. North facing section across Pit [903].

0 5m

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

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Figure 7:
Trench 9; plan and sections

DRG No.	REV
CL12387-107	A

DRG SIZE	SCALE	DATE
A3	P 1:50 / S 1:40	July 2021

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