1.1 Louth County Council: Further Information Request

LOUTH COUNTY COUNCIL

REGISTERED POST
WuXi Biologics Ireland Limited
c/o Aiden O'Neill
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Planning Section
Town Hall
Crowe Street
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Co Louth
A91 W20C
Tel: 042/9335457

Date: 04/06/2024

FURTHER INFORMATION REQUEST

RE: Permission for the construction and operation of a new Effluent Balancing and Resource Recovery Plant (EBRRP) on a site of 7.888hectares, which will consist of: (1) Excavation of the site to facilitate the proposed development, and reuse of excavated material as a landscaped spoil heap within the site; (2) Construction of 3no. covered structures containing 12no. process tanks, located within concrete bunds with metal stairwells and platforms for access, and connected to an odour treatment facility. (3) Installation of 5no. covered storage tanks located within concrete bunds with metal stairwells and platforms for access. (4) Installation of a sludge dewatering facility. (5) Construction of a single-storey administration and process building with roof-mounted solar panels and rainwater harvesting tank. (6) Widening of an existing access on the Mullagharlin Road and associated setback of the existing hedgerow, to facilitate a temporary construction access and a permanent operational access for small vehicles. (7) Construction of a fabricated metal access bridge and pipe and cable support structures to link the proposed development with the existing biopharmaceuticals plant. (8) A temporary construction compound, to include double-stacked metal containers/cabins with access stairs, laydown areas, and 50no. parking spaces; temporary internal road; and temporary internal construction haul road (including footpath). (9) All site development works, drainage, ancillary equipment, lighting, retaining walls, fencing, and landscaping works. The application relates to a development which comprises of an activity which holds an Industrial Emissions Discharge (IED) Licence (Licence No. P1122-01). An Environmental Impact Assessment Report (EIAR) has been prepared in respect of the proposed development and will be submitted to the planning authority with the application at WuXi Biologics Ireland Limited Dundalk Science and Technology Park, in the townland of Haynestown Mullagharlin, Dundalk, Co. Louth

REF. NO. 2460213

Dear Sir/ Madam,

I refer to your application received on 19/04/2024 and wish to inform you that pursuant to Section 33 of the Planning and Development Act, 2000 (as amended), and Article 33 of the Planning and Development Regulations, 2001(as amended), Louth County Council requests you to forward the following Further Information:

1. The Planning Authority has concerns in respect of the location of the temporary construction compound relative to the archaeological features on subject site. The noted sites of recorded monuments include the following Souterrain (LH012-055----); Enclosure (LH012-102---) and Ring ditch (LH012-101----).

   Accordingly, the applicant needs to consider the relocation of the compound or alternatively siting or mitigation to ensure that the Recorded Monuments and identified archaeological features and deposits located within the site of the proposed development are not impacted upon in anyway.

2. The applicant is required to engage the services of a suitably qualified archaeologist to carry out further archaeological impact assessment of the development and should include for the creation of a 20m buffer zones established around the known sites of recorded monuments i.e. Souterrain, Enclosure and Ring ditch.

3. The archaeologist should carry out any relevant documentary research and inspect the development site. A revised Archaeological Impact Assessment should be carried out to assess any new proposals.

4. Having completed the work, the archaeologist shall submit a written report stating their recommendations to the Planning Authority and to the Department. Where archaeological material or features are shown to be present, preservation in situ, preservation by record (excavation) or monitoring may be required.

5. The applicant should consider any revised proposals in the context of the information contained within the EIAr and whether any further updating and/or mitigation measures have an impact on cumulative effects and environmental interactions.

6. The applicant is requested to submit revised newspaper & site notices if the above further information will result in a significant alteration from the original proposal in relation to site size, site layout, development location or description, etc., in accordance with Article 35, 1(c), of the Local Government (Planning & Development) Regulations, 2006, which include reference to these alterations. Where revised newspaper and site notices are required the applicant shall submit in writing a description of the significant alterations e.g. provision of a Wastewater Treatment System, amendment to site size, site layout etc. to

provide clarity and to update the details previously submitted under Section 9 'Description of Proposed Development' on the planning application form.

The 4 week period for making a decision shall not commence until this request for Further Information has been **fully complied with.** If this request is not complied with within the period of 6 months from the date of this notice, the application shall be declared withdrawn.

The applicant is requested to attach a schedule of all documents being submitted in response to the further information request. **(1 copy)**

This matter is being dealt with by **Declan Conlon** who can be contacted on 042-9335457.

Yours faithfully,

Amy Duffy

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Amy Duffy
Planning Section

A response in writing is required. When Further Information is submitted, if you do not receive an acknowledgement from the Planning Authority within 7 days, please contact the Planning Office, Town Hall, Crowe Street, Dundalk. Tel: 0429335457.

1.2 Archaeological Impact Assessment (AIA): EBRRP at Haynestown, Dundalk, Co. Louth

Archaeological Impact Assessment Report WuXi Biologics Ireland Ltd Effluent Balancing and Resource Recovery Plant (EBRRP), Haynestown, Dundalk, Co. Louth

Donald Murphy
22 July 2024

Report Status: Final

ACSU Ref.: 2483

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PROJECT DETAILS

Project	Archaeological Impact Assessment for new Effluent Balancing and Resource Recovery Plant (EBRRP) at Haynestown, Dundalk, Co. Louth
Report Type	Archaeological Impact Assessment
Townland(s)	Haynestown
RMP No.	LH012-055---- (Souterrain)
SMR Nos	LH012-102---- (Enclosure), LH012-101---- (Ring-ditch) and LH012-116---- (Habitation site)
RPS Id./NIAH Reg. No.	N/A
ITM Ref.	704120, 802977
Consultant	Archaeological Consultancy Services Unit, 21 Boyne Business Park, Greenhills, Drogheda, County Louth
Archaeologist	Donald Murphy
Report Author(s)	Donald Murphy
Report Status	Final
Report Date	22 July 2024
ACSU Ref.	2483

VERSION CONTROL

Revision	Date	Description	Status	Author	Reviewed	Approved
1.0	06.06.2024	Archaeological Impact Assessment	Final	D.M.	K.C.	D.M.
1.1	22.07.2024	Archaeological Impact Assessment	Final	D.M.	K.C.	D.M.

NON-TECHNICAL SUMMARY

This report presents the findings of an Archaeological Impact Assessment (AIA) on a revised design for the site of a proposed new Effluent Balancing and Resource Recovery Plant (EBRRP) at WuXi Biologics Ireland Ltd located in the Dundalk Science and Technology Park, Co. Louth, within the townland of Haynestown (ITM 704120, 802977). It was prepared in response to a Further Information Request from Louth County Council regarding Planning Application 2460213.

The site of the new waste water facility is located within the south-west portion of a recently developed biopharmaceutical facility where archaeological investigations undertaken between 2004 and 2023, in the form of geophysical surveys, test excavations, monitoring and excavation, have revealed a complex landscape of prehistoric and early medieval activity. There are four previously known archaeological monuments in close proximity to the site. Habitation site LH012-116---- to the south was discovered in 2014 during test trenching and was subsequently excavated, although additional remains may still be preserved in the wider area. Enclosure LH012-102---- to the east and ring-ditch LH012-101---- to the north, were both originally identified in 2009 as cropmarks on aerial photography. The exact location of souterrain LH012-055----, which is mapped as occurring in the east side of the site, has not yet been identified. Geophysical surveys in 2004, 2007, 2019 and 2023, as well as test excavations in 2008 and 2023, failed to identify the remains of a souterrain in this area. This does not, however, exclude the possibility that an additional souterrain(s) may still be discovered here. It is also possible that the location lies further to the east, within the area of Enclosure LH012-102---- (C019), which was partially excavated in 2019–2020 (19E0060), resulting in the discovery of two souterrains that remain preserved *in situ*. The north-western half of this enclosure also remains preserved *in situ* and a minimum 20m buffer zone is recommended around this site, with a similar buffer zone recommended around ring-ditch LH012-101---- to the north. No site works, temporary storage, etc., shall take place within these buffer zones.

In 2023, newly discovered archaeological remains (e.g. pits, ditches, post-holes, spread/deposit, hearth, furrows, metalled surface) were identified within the site as geophysical anomalies (23R0044) and during test trenching (22E0689). It is therefore recommended that these features, and any further archaeological sites and/or features identified during the archaeological monitoring of topsoil removal and enabling works across the site, are preserved by record (excavation). This includes within the area of the temporary compound, which although proposed as low impact, would still adversely affect the underlying archaeology through compaction. This work should be undertaken under licence from the National Monuments Service (NMS) of the DHLGH by a suitably qualified archaeologist in accordance with methodologies agreed in advance with the NMS.

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1. INTRODUCTION

This report presents the findings of an Archaeological Impact Assessment (AIA) on a revised design for the site of a proposed new Effluent Balancing and Resource Recovery Plant (EBRRP) at WuXi Biologics Ireland Ltd located in the Dundalk Science and Technology Park, Co. Louth, within the townland of Haynestown (ITM 704120, 802977; Figures 1–2). The site lies to the east of, and is accessed from, Mullagharlin Road, and is within the south-west portion of a recently developed biopharmaceutical facility.

The site is located within a highly sensitive archaeological landscape, with extensive archaeological remains recorded and identified as a result of recent archaeological investigations (Figure 2; see Sections 4.1 and 4.2 for details). One *Record of Monuments and Places* (RMP) site, souterrain LH012-055----, is mapped as occurring in the east side of the area of the proposed development (see Figure 9). This is listed in the RMP for County Louth, published in 1996, as being exposed 0.1m below the ground surface during ploughing; however, its exact location has not yet been established (see Section 4.2). A further three sites are listed in the *Sites and Monuments Record* (SMR): Enclosure LH012-102----, Ring-ditch LH012-101---- and Habitation site LH012-116----. The former two were originally identified in 2009 as cropmarks on aerial photography, while the latter site was discovered in 2014 during test trenching and subsequent excavation related to a gas pipeline development (see Section 4.2). All three SMRs are scheduled for inclusion in the next revision of the RMP.

This AIA was carried out in response to a Further Information Request (FIR) from Louth County Council in relation to Planning Application 2460213 (see Section 2). Prior to this, a geophysical survey was conducted in early 2023 by Donald Murphy of Archaeological Consultancy Services Ltd (ACSU) under licence 23R0044 (Murphy 2023a; see Figures 5–7), with subsequent targeted test trenching completed between 31st July and 8th August 2023 under licence 22E0689 (Murphy 2023b; see Figures 7 and 9). The remains of at least 31 archaeological features were identified during test trenching: 15 pits, 10 linear ditches, 2 possible post-holes, a spread/deposit, a hearth, agricultural furrows and a metalled surface (Figures 10–12). Soil from the excavated trenches was also examined for finds, both macroscopically and with a Garrett ATX metal detector under licence 23R0256; no artefacts were recovered (ibid.).

2. THE DEVELOPMENT

Planning Application Ref. No. 2460213 relates to the construction and operation of a new Effluent Balancing and Resource Recovery Plant (EBRRP) on a site of 7.888 hectares, at WuXi Biologics Ireland Limited in Dundalk Science and Technology Park. The proposed development will consist of:

(1) Excavation of the site to facilitate the proposed development, and reuse of excavated material as a landscaped spoil heap within the site; (2) Construction of 3 no. covered structures containing 12 no. process tanks, located within concrete bunds with metal stairwells and platforms for access, and connected to an odour treatment facility. (3) Installation of 5 no. covered storage tanks located within concrete bunds with metal stairwells and platforms for access. (4) Installation of a sludge dewatering facility. (5) Construction of a single-storey administration and process building with roof-mounted solar panels and rainwater harvesting tank. (6) Widening of an existing access on the Mullagharlin Road and associated setback of the existing hedgerow, to facilitate a temporary construction access and a permanent operational access for small vehicles. (7) Construction of a fabricated metal access bridge and pipe and cable support structures to link the proposed development with the existing biopharmaceuticals plant. (8) A temporary construction compound, to include double-stacked metal containers/cabins with access stairs, laydown areas, and 50 no. parking spaces; temporary internal road; and temporary internal construction haul road (including footpath). (9) All site development works, drainage, ancillary equipment, lighting, retaining walls, fencing, and landscaping works.

A FIR from Louth County Council related to the location of the temporary construction compound relative to known archaeological features, specifically souterrain LH012-055----, enclosure LH012-102---- and ring-ditch LH012-101----, and accordingly, the need for a further archaeological impact assessment to include any adjustments to the proposed development and the establishment of minimum 20m buffer zones around the known archaeological sites. Based on this request, the following design changes have been made:

- The balancing tanks and off specification tanks dimensions will be reworked from 6no. cells with overall external dimensions of 54.2m x 16.3m x 7.6m to 4no. cells with overall external dimensions of approximately 47.5m x 19m x 8.5m (including roof slab but excluding base slab). This will result in a reduction in the overall footprint of tanks and bund area.
- The sludge buffering tanks will be incorporated with the aeration tanks in a common structure with internal dividing walls to optimise site footprint.
- The aeration tanks will be shifted slightly south from their original location.
- The overall bund will be rationalised and will be overall smaller, although some small areas to the south which were not previously excavated will now need to form part of the bund to facilitate the above rationalisation.
- The sludge dewatering infrastructure will be moved further south in line with the reduction in bund footprint.

- The chemical delivery area will be moved further west in line with the reduction in bund footprint.
- The fire access road will be moved further south in line with the reduction in bund footprint.
- The construction compound will be moved further south and significantly reduced in extent in line with the reduction in bund footprint.

All of these changes will result in a reduction in the overall footprint of the tanks, bund and compound area to ensure that the recommended buffer zones around the Recorded Monuments within the site of the proposed development will not be impacted and to minimise the risk of impact on other archaeological remains (see Figure 8).

3. METHODOLOGY

This impact assessment comprises a literature review and consultation of various written, cartographic and photographic sources. This included the *Record of Monuments and Places* (RMP) and *Sites and Monuments Record* (SMR), compiled and updated by the National Monuments Service and the National Historic Properties Service. The RMP is comprised of manuals that list all known archaeological sites and monuments in a county with accompanying maps (based on Ordnance Survey (OS) six-inch maps) locating these sites. All sites included in the RMP are protected under the National Monuments Acts (1930–2004). The SMR consists of all records stored in the Archaeological Survey of Ireland national database and is presented in the Historic Environment Viewer, which also includes sites listed in the *National Inventory of Architectural Heritage* (see below). The last published RMP for County Louth is dated 1996, and as such, many of the sites listed in the SMR are scheduled for inclusion in the next revision of the RMP.

The Topographical Files of the National Museum of Ireland were also consulted to assess the area's archaeological potential. These files list on a townland basis all archaeological artefacts in the care of or known to the museum. Such a record can provide evidence for human settlement or activity in the absence of physical remains or documentary references. The results of previous and ongoing archaeological investigations were also considered in order to evaluate the level of archaeological remains coming to light in the area. This was primarily achieved by searching the *Database of Archaeological Excavations in Ireland* (www.excavations.ie), which contains summaries of all investigations carried out under licence from 1970 to the present, as well several recent archaeological investigations undertaken by ACSU with the WuXi Biologics Ireland Ltd site (summarised in Section 4.2).

Historical maps, including those held in the Map Collections of University College Dublin, Trinity College Dublin and Ordnance Survey Ireland (OSi) were also consulted, as well as aerial photography and imagery from the Geological Survey of Ireland and Google Earth. These sources can indicate areas of archaeological potential through features like curving field boundaries, crop marks and soil marks, and can provide information regarding the nature and extent of recorded archaeological sites that have become denuded since the early nineteenth century. Historical maps are also useful in identifying other features of cultural heritage significance such as vernacular structures, wells, lime kilns and townland boundaries.

The *Louth County Development Plan 2021–2027* was also consulted as this contains, among other things, a Record of Protected Structures (RPS), which are structures that a planning authority thinks is of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social, or technical point of view. Further buildings and features of architectural interest in the area that are not included on the Record of Protected Structures are detailed in the *National Inventory of Architectural Heritage* (NIAH). The NIAH was developed by the Department of Housing, Local Government and Heritage and identifies, records, and evaluates the post-1700 architectural heritage of Ireland. It also forms the basis of a list for structures that should be included in the RPS.

As part of the assessment, a site visit was also carried out. The aim of this was to assess the current condition of the site, its proximity to known archaeological monuments and whether or not there was any visible evidence for previously unrecorded areas or features of historical or archaeological significance.

4. ARCHAEOLOGICAL ASSESSMENT

4.1 Archaeological & Historical Background

The site is located within the townland of Haynestown (*Baile Héine*), in the Barony of Dundalk Upper and the Civil Parish of Haynestown. The *Placenames Database of Ireland* records the earlier name of the townland in 1301 as *Felde* (field), and derivatives of this name were used until at least 1449, after which, in 1494, the name Fellda al. Haeneston was noted (https://www.logainm.ie/api/v1.0/1710). It was suggested by O'Donovan (1836) that Hayne is a family name, however, the element Héin(e) might have derived from Middle English *haene*/*hean*, meaning 'poor, wretched'.

The monuments listed in the *Record of Monuments and Places* (RMP) and *Sites and Monuments Record* (SMR), as well as the results of various archaeological investigations carried out in the area, demonstrate that the surrounding landscape is a palimpsest of historic and prehistoric activity (see Section 4.2 for details).

Ring-ditch LH012-101----

Adjacent and north of the site is a ring-ditch (LH012-101----), which was identified by Dr Gillian Barrett as a cropmark on an aerial photograph (GB89.I.22) and recently subject to a geophysical survey under licence 19R0042 and test trenching under licence 19E0060 (Stirland 2024; see Section 4.2). Ring-ditches fall into the monument category of 'barrows', representing funerary sites that emerged towards the end of the Neolithic and the beginning of the Bronze Age. They can be defined as earthen or earth/stone construction mounds with a surrounding ditch or ditches, sometimes with a low external bank, typically less than 30 metres in diameter and most commonly associated with cremation burials (O'Sullivan and Downey 2012). In 2002, in advance of the gas pipeline works from North Dublin to Limerick, ring-diches/barrows were excavated at Flemingtown, Co. Meath, Dalystown 1, Co. Westmeath, Knockuregare, Co. Limerick and Rath, Co. Dublin (Grogan et al. 2007,). All of these sites had substantial ditches, the largest having an external diameter of 38.75m. The excavations provided evidence for this type of funerary site occurring throughout the Chalcolithic and Bronze Age (c. 2450–800 BC) and highlighted the significance of liminal space for death and burial in the form of ceremonial enclosures. McGarry (2009) states that of all the barrows excavated in Ireland, about half of them have produced the remains of a single person, most commonly found under the mound and central to the barrow. Almost all sites, however, produce cremated human remains spread throughout the fill of the barrow ditches; as can be seen at sites such as Ballybeen, Co. Antrim (Mallory 1984) and Ballydribbeen, Co. Kerry (Dunne 2003). Another interesting feature of barrows is the presence or absence of an 'entrance' or break in the ditch, which provides a causeway into the monument. Entrances are present in several ring-ditches and ring-barrows and although the entrance may be orientated in any direction there is a clear preference for them facing either east or south-east. It must be noted, however, that there are also many instances were entrances are not present, such as Donacarney, Co. Meath (Stirland 2017). The ring-ditch at Haynestown is located approximately 500m south of another barrow monument (LH012-082----) identified in 1993 prior to road construction and dated to the Iron Age (O'Sullivan 1993). This comprised a penannular ditch, 10.5m in maximum diameter, with a causeway to the north-east. The ditch varied in width from 1–1.5m and in depth from 0.2–0.9m, the fill of which included cremated bone, metallurgical residue (slag), fragments of metal artefacts, a bead, pottery sherds and flint flakes.

Souterrain LH012-055---- and Enclosure LH012-102----

Mapped as occurring within the east area of the site is souterrain LH012-055----, which was discovered during ploughing in the area, and to the east of this is enclosure LH012-102----, which like the ring-ditch, was identified by Dr Gillian Barrett as a cropmark on the same aerial photograph (GB89.I.22). Subsequent investigations in this area included geophysical surveys in 2004 and 2008 and archaeological testing in 2008 under licence 08E0486 (Byrne 2008). The 2008 geophysical survey by Earthsound Geophysics Ltd reportedly indicated the presence of a passage orientated north–south, c.12m long and up to 5m wide and possibly including two chambers, as well as a small enclosure c. 13m to the north-east. As this area was to be located within a public space it was not invasively tested, but 20 trenches across the site did not reveal any subsurface archaeological features or deposits, although it was noted that the soil was very dry at the time (ibid.). This area was subject to further geophysical survey in 2019, under licence 19R0042, which did not determine the location of the souterrain (Stirland 2024). Subsequent excavation under licence 19E0060 (ibid.; see Section 4.2) exposed the south-east portion of a ditched enclosure (recorded as C019), within which the remains of two souterrains (recorded as C805 and C811) were also discovered and these remain preserved *in situ*. This excavation also confirmed that the cropmark identified as enclosure LH012-102---- was actually the remains of an annexe on the north-east side of the main ditched enclosure (C019). A second ditched enclosure (C1104) with an associated souterrain (C1233) was also uncovered c. 370m to the east during this work. As the Record of Monuments and Places account suggests that souterrain LH012-055---- is located further to the west of ditched enclosure C019, it is possible that a third souterrain is also located outside the limits of that excavation area. Alternatively, souterrain C805, located in the east side of C019, could be the souterrain first identified during ploughing. During excavation modern disturbance along 2m of the passage was suggested where three roof lintels had been moved from their original positions, perhaps due to ploughing, and the gaps sealed by fertiliser bags (ibid., 178). Accordingly, this might suggest that the mapped location of LH012-055---- is incorrect. Furthermore, the most recent geophysical survey and test trenching carried out in this area, under licences 23R0044 and 22E0689, respectively (Murphy 2023a; 2023b), did not uncover any remains suggestive of a souterrain (see Figure 9).

Ditched enclosures/ringforts and associated souterrains such as these are some of the most frequent monuments found within this area of County Louth. The majority of early medieval ditched enclosures date to the sixth–ninth centuries AD, and we see a significant decline in their use in the tenth century (O'Sullivan and Nicholl 2010). Though a site in Laytown, Co. Meath, could have a fourth century date (McConway 2002), other sites such as Ballynacarriga, Co. Cork (Noonan 2004) and Raystown, Co. Meath (Seaver 2005; 2016) were

probably occupied from the fifth century well into the eleventh century. Kerr (2007) has also suggested that platform enclosures were constructed later than univallate types, between the mid-eighth and mid-tenth centuries. Recent research has also indicated that some ditched enclosures were used well into the twelfth century and also in the post-medieval period (Fitzpatrick 2009). The artefact assemblages (Souterrain Ware, copper-alloy brooch and ring pins, worked bone and jet/jet-like material, and iron artefacts such as a shod spade and candlestick/rushlight holder) and scientific dating recovered from the two ditched enclosures identified at Haynestown indicated that they could have been in contemporary use, sometime in the eighth to tenth centuries AD (Stirland 2024).

Such enclosures are generally regarded as enclosed farmsteads, with the associated ditch and bank thought to have been built to protect against cattle raids (Stout 1997). Some have provided little evidence for internal structures, suggesting they were used for corralling cattle, known as a *bodun*, though the majority provide evidence to suggest they were inhabited settlements with houses, farmyards and outbuildings and artefacts suggestive of domestic, craft and agricultural use (Monk 1995; O'Sullivan and Nicholl 2010). Some larger sites, such as Raystown, Co. Meath, fulfilled many functions; there was evidence for animal husbandry, cereal and grain processing, milling, burial and metallurgy (Seaver 2016). The excavations at Haynestown confirmed that the landscape between and around the two enclosures has an extensive associated field system, with thirteen cereal-drying kilns across the area indicating a long tradition of arable farming between at least the sixth century and the ninth/tenth-century AD (Stirland 2024).

Souterrains are artificial underground or semi-subterranean passages and chambers that are frequently associated with early medieval ditched enclosures. Their distribution across Ireland is also uneven, with the greatest concentrations occurring in north Louth, north Antrim, south Galway, and west Cork and Kerry (Clinton 2001). They are usually interpreted as hiding places during times of attack and for storage, while some are also suggested to have been used for temporary habitation (O'Sullivan et al. 2013, 109–111). The three souterrains (C805, C811 and C1233) uncovered and persevered *in situ* at Haynestown are comprised of stone-lined passages without formal chambers, with all three having some evidence of disturbance/partial dismantling and infilling in the past, particularly around their entrances and the adjacent sections of their passageways (Stirland 2024). The remaining sections were largely well preserved, however, with the walls lined by between two and thirteen rough courses of locally-sourced greywacke stones and occasional large glacial boulders, as well as some evidence of corbelling of the upper courses to meet the roof lintels. Artefacts and scientific dating suggested that the souterrains were used at the same time as the enclosures (ibid.).

4.2 Previous Archaeological Investigations

The site of the waste water treatment facility lies within a larger area that has been subject to archaeological investigations in 2004, 2007, 2008, 2014, 2019–2020 and 2023.

2004–2008

The earliest investigations included a geophysical survey in 2004 by Earthsound Geophysics Ltd, when fourteen anomalies were detected, eight of which were deemed to be of archaeological potential (Byrne 2008). This was followed in 2007 by a resistivity survey, which was carried out to determine the extent of the souterrain (LH012-055----). As detailed above, a linear anomaly, c.12m long (north–south) and up to 5m wide was interpreted as a possible passage, while a nearby circular anomaly was interpreted as a small enclosure (ibid.). In 2008, these results were subsequently targeted in test trenching by Martin Byrne under licence 08E0486, but no features of archaeological significance were identified. Only 20 trenches were excavated, however, and it was during a spell of very dry weather, making it difficult to determine changes in the subsoil (ibid.). This work was undertaken to inform an Environmental Impact Assessment Report (EIAR) for the WuXi Biologics Ireland Ltd site and it was concluded that given the dry soil conditions that prevailed at the time of the resistivity survey, alongside the results of the test excavations, it was considered more likely that the anomaly provisional identified as souterrain LH012-055---- may be geological in origin (Byrne Mullins & Associates 2008, 230).

2014

In 2014, testing of the above-ground gas installation (AGI) within the south-west portion of the site identified a number of pits/post-holes representing prehistoric structures; these were later excavated by Gill McLoughlin under licence 14E0027 and subsequently registered as SMR LH012-116--- (Habitation site). This site comprised eight pits set in two groups or clusters, with two larger outlying pits as well as deposits and stake-holes (McLoughlin 2014). Associated artefacts included burnt and unburnt flint, including a number of scrapers and blades, burnt bone, fragments of two small undecorated Grooved Ware vessels and two hammerstones. The lithic and pottery assemblage suggested a Late Neolithic date, which was supported by a ^{14}C date of 2862–2498 cal. BC[1] (UBA-26515; 4093 ± 33 BP) on a charred hazelnut shell fragment, and it was postulated that further material probably lay outside the excavated area (ibid.).

[1] All radiocarbon dates have been calibrated using OxCal 4.4 IntCal 20 (Reimer et al. 2020; Bronk Ramsey 2021) and presented to 2-sigma (95.4%) probability.

2019–2020

Geophysical survey by Donald Murphy under licence 19R0043 and investigations by Jon Stirland under licence 19E0060, including test trenching, monitoring and excavation, were undertaken between early 2019 and mid-2020 (Stirland 2024). As a result of this work, a complex multi-period landscape was identified (Figure 5). This included evidence of prehistoric activity ranging in date from the Neolithic through to the Iron Age, including a Middle Neolithic enclosure, cremation burials of Middle Bronze Age, Late Bronze Age and later Iron Age date, burnt mounds and the remnants of a later Bronze Age field system, as well as an Early Medieval settlement complex that includes at least two ditched enclosures with associated field systems and ditched trackway, three souterrains, cereal-drying kilns, structures and pit clusters.

As mentioned above, the 2019–2020 phase of site assessment included geophysical survey and test trenching at the site of ring ditch LH012-101----, which was previously identified through aerial photography as a cropmark of two widely-spaced concentric ditches. A total of seven trenches were excavated across the site (Phase 2 of development area) and the subsurface remains of the two ditches were recorded within Trenches 1–4, which were hand excavated (Stirland 2024). These ditches are set between 8.5m (N/S) and 11m (E/W) apart. The outer ditch (C1069) has an external diameter of 55m and the ditch itself has a width of 4.4m and was excavated to a depth of 1.1m, at which point the excavation of the section had to be halted for health and safety reasons due to the depth of topsoil within the trench. The inner ditch (C1070) has an external diameter of 30m and the ditch itself has a width of 2.7m and a depth of 0.5m. The recovery of a single sherd of pottery from the outer ditch suggests a Bronze Age date is likely for this monument. The test trenches were infilled and the site was covered with geotextile and preserved *in situ*, placed in a protective buffer zone.

Similarly, the area of enclosure LH012-102---- and associated souterrain LH012-055---- was also subject to geophysical survey under licence 19R0043 and while this identified the site of an enclosure, no definite evidence for a souterrain was uncovered (Stirland 2024). Excavation under licence 19E0060 was subsequently completed on the south-east portion of this enclosure (C019), which, as mentioned above, revealed two internal souterrains (C805 and C811). This work also confirmed that enclosure LH012-102----, which was originally identified as a cropmark on aerial photography, actually corresponded with the remains of a curvilinear annexe ditch on the north-east side of the main ditched enclosure C019. The north-west portion of this ditched enclosure was not excavated and remains *in situ* with an associated protective buffer zone; the site of the EBRRP is immediately to the west (Figure 8). These investigations also suggested that souterrain LH012-055---- might be represented by C805, which comprises a curving passage measuring 22m in length and

1m in width. This is based on the description of the discovery in the SMR file and the presence of modern agricultural fertiliser bags securing some displaced roof lintels that could have been moved as a result of modern ploughing. As this souterrain is situated further east than the mapped location for LH012-055----, it is possible that the mapped location is incorrect and that it actually falls within the buffer zone recommended around the remains of ditched enclosure C019. This suggestion is also strengthened by the fact that test trenching undertaken in this area in 2008 and 2023 (see below) failed to identify any remains of a souterrain.

Additional features identified during 2019–2020 that likely extend within the site of the EBRRP include two linear ditches (C815 and C835) and represent part of the associated field system (see Figure 11; Stirland 2024). Ditch C835 cut the south-western portion of enclosure ditch C019 and the excavated section measured 15m in length (NE/SW), with a width of between 0.94m and 1.20m and a depth of between 0.20m and 0.35m. Ditch C815 was located approximately 10m to the south-east and the excavated section measured 21m in length (NNE/SSW), with a width of 2.25m and a depth of 0.50m. Its north-eastern limit terminated 0.66m from the outer side of enclosure ditch C019, in a slightly rounded terminus. Both ditches had gradually sloping sides and flat to slightly concave bases. A cluster of features representing Structure 5 was identified approximately 3m to the south-west of ditched enclosure C019 and directly north of field system ditch C835. It comprised two post-holes and nine stake-holes that were largely within a shallow hollow or depression, the base of which was oxidised, suggesting this likely represented the remains of a large firepit within a house or structure that did not survive. Ten fragments of abraded Souterrain Ware pottery were recovered from one of the post-holes. Located 3.8m to the south-east, on the south-east side of ditch C835, were a further four stake-holes, two of which each included single fragments of abraded Souterrain Ware. It is likely that additional features relating to this activity survive within the site of the EBRRP.

Furthermore, an area in the south-west portion of the site was also excavated during the 2019–2020 work (Gas Pipeline Area), revealing parallel ditches (C1019 and C1044) aligned north-west to south-east and an associated metalled surface (C1020) that was interpreted as part of a trackway, possibly the ditched trackway detected elsewhere and mentioned above (see Figure 11; Stirland 2024). Sections of a further two ditches (C1022 and C1035) excavated in this area were aligned roughly north-east to south-west and their termini appeared to respect the metalled surface, suggesting they may have formed part of the Early Medieval field system. Earlier activity in this area was also detected in the form of three pits (C1024, C1026 and C1028), two of which included burnt bone largely unidentifiable to species but with some likely to be human. An abraded sherd of Middle Bronze Age pottery was also recovered from one of these pits, where hazel charcoal returned a Late Neolithic date of 2670–2460 cal. BC (ICA-14C/5363; 4040 ± 30 BP). This activity likely represents a

continuation of Habitation site LH012-116--- identified to the south in 2014 (see Figure 2). Two additional parallel ditches (C567 and C582) that were excavated in the southern end of the site (east of the AGI) are also likely to represent part of the ditched trackway and likely continued further to the south-west, into the site of LH012-116---- (see Figure 11). These ditches were aligned roughly north-east to south-west and had an internal gap of 9m, with C567 measuring 0.99m in width by 0.28m in depth and C582 measuring 0.85m in width by 0.34m in depth.

2023

Most recently, the site of the EBRRP and surrounding area was subject to a geophysical survey, conducted in early 2023 (23R0044, Murphy 2023a; Figures 5–7). This survey recorded the unexcavated north-western portion of the ditched enclosure C019 mentioned above (the south-eastern portion was excavated under licence 19E0060; Stirland 2024), as well as associated linear and curvilinear features. Other linear anomalies within the area surveyed are in apparent alignment with the previously excavated ditches interpreted as Early Medieval field systems. Bands of magnetic disturbance were also noted; these correspond with areas that were trafficked by machinery visible on aerial imagery. An array of scattered smaller anomalies throughout the survey area could represent spreads/deposits, pits, kilns and/or structures. These are likely archaeological in nature due to their location; however, some might represent iron present in the topsoil.

Between 31 July and 8 August 2023 this area was also subject to test trenching (23E0452, Murphy 2023b; Figures 7, 9–12), which targeted the anomalies identified during the geophysical survey. This consisted of 14 trenches, each measuring 1.8m in width, with a total of 997m of linear trenches excavated that succeeded in identifying the remains of at least 31 features. These included 15 pits (C8, C10, C13, C15–C17, C19, C21, C25, C27, C28, C38, C42, C45 and C55), some isolated and others in clusters; 10 linear ditches (C24, C29–C31, C33, C34, C36, C47 and C50/C51), half of which were orientated east–west and likely representing part of the field system mentioned above; 2 possible post-holes; a spread/deposit (C40); a hearth (C4); agricultural furrows (C36), and a metalled surface (C32). Soil from the excavated trenches was also examined for finds, both macroscopically and with a Garrett ATX metal detector under licence 23R0256; no artefacts were recovered (ibid.).

4.3 Recorded Monuments

As outlined above, a previously known archaeological monument, a souterrain (RMP LH012-055----), is mapped as being located within the east side of the site (see Figure 9), while another previously known

monument, an enclosure (SMR LH012-102----), is located directly adjacent the site (Figure 2). As detailed above, the investigations carried out in 2019–2023 have identified the extent of the enclosure (C819) but the exact location of the souterrain remains unclear, although it may be represented by souterrain C805, which is preserved *in situ* within the excavated section of the enclosure. The north-western half of the enclosure also remains preserved *in situ* within a buffer zone (see Figure 8).

Just north of the site of the EBRRP is a ring-ditch (SMR LH012-101----), which was subject to test excavation in 2019, but is also preserved *in situ*, within a recommended minimum 20m buffer zone (Figure 8). Just south of the site lies a fourth known archaeological monument, a habitation site (SMR LH012-116----), which was previously excavated on behalf of Bord Gáis Networks (14E0027, McLoughlin 2014) and identified as representing Late Neolithic activity that likely extends northwards, into the site of the EBRRP.

Table 1 is a list of recorded monuments located within the site environs (Figure 2). These descriptions are derived from the National Monuments Service Archaeological Survey Database (https://heritagedata.maps.arcgis.com/apps/webappviewer/).

Table 1: Recorded monuments in the environs of the site

LH012-055----	**Souterrain**	**Haynestown**
Situated on slight rise in arable land. Lintels of drystone-built passage 0.1m below ground surface encountered during ploughing. Structure as yet unopened. **Six-Inch First edition:** NULL **Six-Inch Latest edition:** NULL **ITM Coordinates:** 704089 , 803011 **Latitude and Longitude:** 53.965902 , -6.413639		
LH012-102----	**Enclosure**	**Haynestown**
Aerial photograph (GB89.I.22) shows cropmark of a curvilinear enclosure which coincides with SMR 55 (souter-rain); in close proximity to a ring-ditch. **Six-Inch First edition:** Not indicated **Six-Inch Latest edition:** Not indicated **ITM Coordinates:** 704089 , 803011 **Latitude and Longitude:** 53.965902 , -6.413639		

LH012-101----	Ring-ditch	Haynestown
Aerial photograph (GB89.I.22) shows cropmark of a ring-ditch defined by two widely spaced fosses; in close proximity to a cropmark of a curvilinear enclosure. **Six-Inch First edition:** Not indicated **Six-Inch Latest edition:** Not indicated **ITM Coordinates:** 703994 , 803205 **Latitude and Longitude:** 53.967664 , -6.415020		
LH012-116----	**Habitation site**	**Haynestown**
Archaeological testing (14E0027) on behalf of Bord Gáis Networks identified habitation material in February 2014, which was further investigated under the same licence by Gill McLoughlin when two groups of pits and two larger outlying pits were recorded. In all eight pits (diam. up to c. 0.8m) were excavated, but further material probably lies outside the excavated area of dims c. 10m x c. 8m. The lithic and pottery assemblage suggests a late Neolithic date, which is supported by a C14 date of 2862-2498 Cal. BC. (McLoughlin 2014) **Six-Inch First edition:** Not indicated **Six-Inch Latest edition:** Not indicated **ITM Coordinates:** 704130 , 802885 **Latitude and Longitude:** 53.964762 , -6.413058		

4.4 National Inventory of Architectural Heritage and Record of Protected Structures

There are no Protected Structures located within the site, as listed in the *Louth County Development Plan 2021–2027*. The nearest such monument is Haynestown Stud (RPS No. LHS012-050), also registered in the National Inventory of Architectural Heritage (NIAH Reg. No. 13901217), located c. 265m to the north-west of the site, on the other side of the railway line (Figure 2).

4.5 Finds listed within the Topographical Files of the National Museum of Ireland

The Topographical Files of the National Museum of Ireland list one artefact from the townland of Haynestown and this consists of a ceramic pottery sherd. The find (NMI Reg. No. 1978:123) is registered as retrieved from the surface of the ploughed field close to a souterrain (presumably LH012-055----) and is described as 'Orange

fabric with grey-orange core. Everted rim with pinched applied decoration below lip. Worn remains of orange/brown glaze on exterior'. Based on the description, the find appears to represent a sherd of post-medieval pottery.

4.6 Cartographic Evidence

A review of available historic mapping for the area was carried out to include the Ordnance Survey (OS) of Ireland 6-inch (1834) and 25-inch (1907) maps (Figures 3–4). Potential archaeological or cultural heritage features are often marked on such maps and they provide a useful resource in identifying sites, particularly if they no longer have any above-ground remains, and they also allow us to trace the site's development during the nineteenth and early twentieth centuries. Both maps, surveyed in 1834 and 1907, respectively, show the site located within two agricultural fields adjacent to, and east of, a north-west to south-east aligned road extending within the footprint of the current Mullagharlin Road (Figure 3). No features of archaeological significance are shown. By the time of the 1907 map, the Drogheda to Dundalk railway line is depicted to the west of the site, with Haynestown Bridge also labelled and illustrated (Figure 4).

4.7 Aerial Photography

A review of available aerial photography for the area was also undertaken as part of this assessment. Aerial photographs dating between 1995 and 2013 from the Ordnance Survey of Ireland (OSi) and Google Earth imagery dating between 2013 and 2022 were assessed. Unrecorded archaeological sites can often be identified in aerial photographs as cropmarks or differential growth in a field, particularly during periods of drought, such as those experienced in the summer of 2018. Based on this aerial imagery, the site remained unchanged until 2007 when some groundworks along the perimeter of the site are visible. By 2017, the Gas Installation (AGI) was constructed in an area adjacent and to south-west of the site, and by 2018 a carpark and what appears to be a perimeter road were added. By 2019, the area adjacent, and to the east, was subject to groundworks with archaeological sites under excavation visible. By the end of 2019, backfilled test trenches at the location of the ring ditch (LH012-101----) are visible and excavated archaeological features in the very south-west corner of the current site can also be seen. At this time, a haul road runs through a portion of the site. By 2020, the south-west corner of the current site was being used for soil tipping, with a large mound visible.

4.8 Field Inspection

A site inspection was carried out in early June 2024 by Donald Murphy of Archaeological Consultancy Services Unit (ACSU) Ltd (Plates 1–4). The site was accessed from Mullagharlin Road to the west. It is in the south-west portion of a recently developed biopharmaceutical facility and is within an archaeological exclusion zone that is currently fenced off. It consists of part of a grassed field with two spoil mounds at the south end of the site.

5. IMPACT ASSESSMENT

There will be no direct impact on the recorded (RMP and SMR) archaeological monuments within the environs of the site by establishing minimum 20m buffer zones around ring-ditch LH012-101---- to the north and enclosure LH012-102---- to the east, to ensure ongoing preservation *in situ* (see Figure 8). These represent exclusion zones, where no site works, temporary storage, compounds, etc., will be allowed. The temporary compound related to the EBRRP development has also been significantly reduced in size and is now designed to ensure it remains outside these exclusion zones. Additional changes to the design (see Section 2) have also resulted in a reduction in the overall footprint of the tanks and bund, to further minimise the risk of impact on archaeological remains.

As detailed above, while the exact location of souterrain LH012-055---- has not yet been established, it is likely that it may also be protected within the buffer zone around enclosure LH012-102----. Previous geophysical surveys in 2004, 2007, 2019 and 2023, as well as test excavations in 2008 and 2023, failed to identify the remains of a souterrain in the general area within which it is mapped (see Figure 9), and it is possible that this souterrain actually lies further to the east, within the area of ditched enclosure C019, where two souterrains were uncovered during excavations in 2019–2020 (Stirland 2024). This does not exclude the possibility that an additional souterrain (or souterrains) may still be discovered in this area.

There will, however, be a direct impact on archaeological features identified during geophysical survey and test trenching of the development site, and on further such features that may yet be found within this area (outside of the minimum 20m buffer zones around LH012-101---- and LH012-102----/LH012-055----). If the proposed development causes these features to be impacted upon directly, the impact will be permanent, accordingly recommended mitigation measures are outlined in Section 6.

6. CONCLUSIONS & RECOMMENDATIONS

This report was prepared in response to a Further Information Request (FIR) from Louth County Council regarding Planning Application 2460213. It presents the findings of an archaeological impact assessment prepared in relation to the development of a new Effluent Balancing and Resource Recovery Plant (EBRRP) at WuXi Biologics Ireland Ltd located in the Dundalk Science and Technology Park, Co. Louth, within the townland of Haynestown (Figures 1–2; Plates 1–4). The site is located within the south-west portion of this recently developed biopharmaceutical facility where, in 2019–2020, an extensive campaign of geophysical survey, test excavation, monitoring and excavation revealed a complex landscape of prehistoric and early medieval activity (Stirland 2024; Figure 5).

This revised Archaeological Impact Assessment incorporated the results from previous archaeological investigations of the wider site, undertaken between 2004 and 2023, including the results of a recent geophysical survey and targeted test trenching (see Section 4.2; Figures 5–7 and 9–12). In response to the FIR, changes to the development design have resulted in a reduction in the overall footprint of the tanks, bund and temporary compound area, to minimise the risk of impact on archaeological remains. In particular, the size of the proposed temporary compound was significantly reduced, ensuring that it is now excluded from the minimum 20m buffer zones recommended around ring-ditch LH012-101---- to the north and enclosure LH012-102---- to the east. Despite geophysical surveys and test excavations in the mapped area of souterrain LH012-055----, the exact location of this monument has not yet been established and so it is not possible to recommend a related exclusion zone; the likelihood, however, is that it may be within the buffer zone around enclosure LH012-102----.

Within the proposed development site, the predicted impacts on newly discovered archaeological remains are deemed to be direct and permanent. This includes features identified as geophysical anomalies (23R0044, Murphy 2023a) and during test trenching (22E0689, Murphy 2023b). It is therefore recommended that:

- Where archaeological material/features have been shown to be present on the site (e.g. pits, ditches, post-holes, spread/deposit, hearth, furrows, metalled surface), mitigation should involve preservation by record (excavation). This includes within the area of the temporary compound, which although proposed as low impact, would still adversely affect the underlying archaeology through compaction. This archaeological resolution should be undertaken under licence from the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage by a suitably qualified archaeologist.

- All topsoil removal and enabling works across the site (including geotechnical test pits) should be archaeologically monitored to identify any further archaeological sites and/or features that will be directly impacted by the development. All areas should be cleaned by hand and surveyed to ITM projection prior to excavation commencing.
- The appointed archaeologist should consult with the Licensing Section of the NMS regarding archaeological features that are uncovered and methodologies will be agreed regarding their resolution.
- Adequate time and resources should be provided by the developer for the resolution of any archaeology identified within the development site that will be directly impacted upon by the groundworks and installation of a temporary compound. Time and resources will also be allowed for any post-excavation work and specialist analysis necessary following any archaeological excavation that takes place.
- A report is required to be compiled on completion of the archaeological monitoring and excavation, and will be submitted to the relevant authorities.

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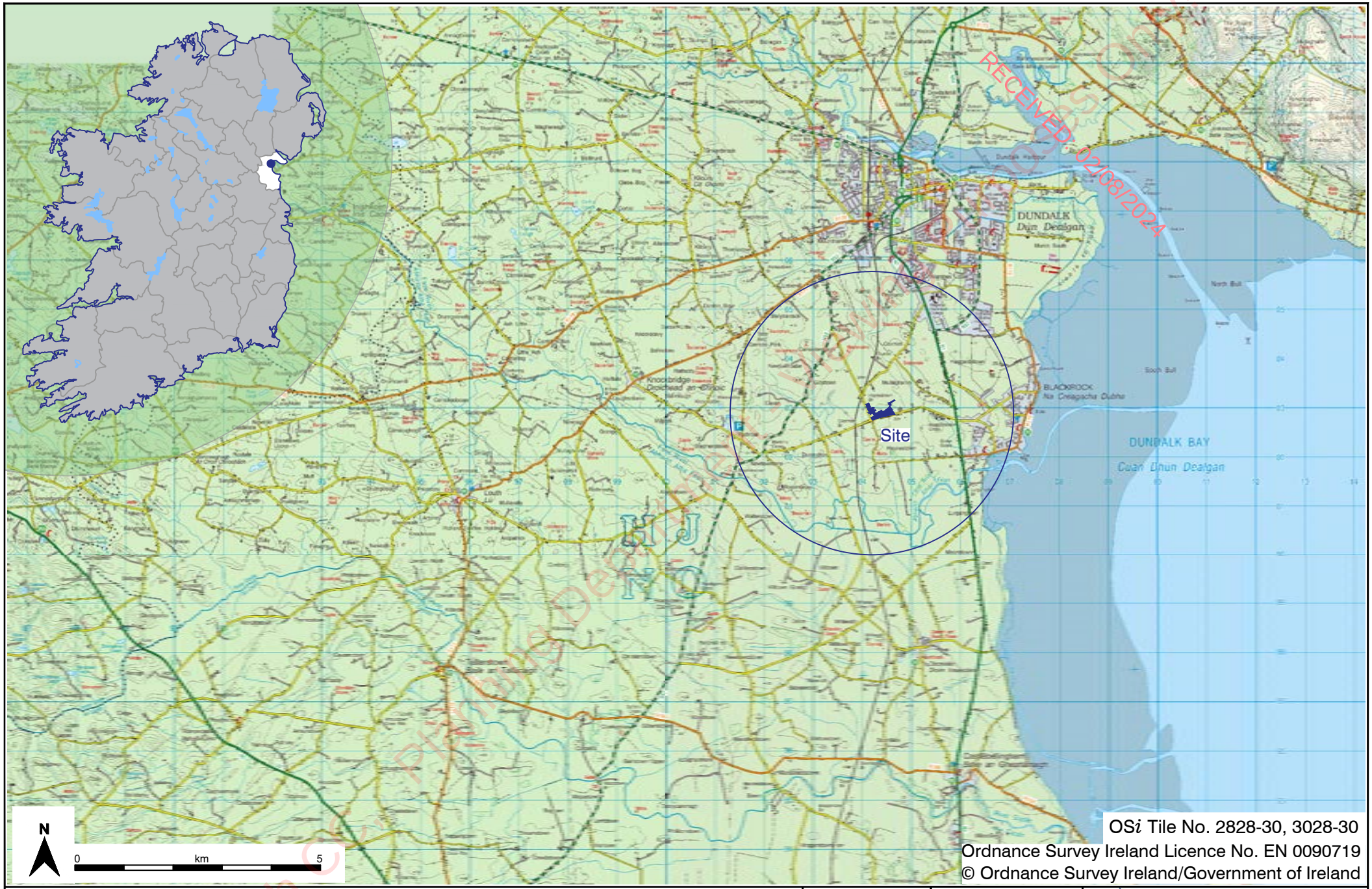
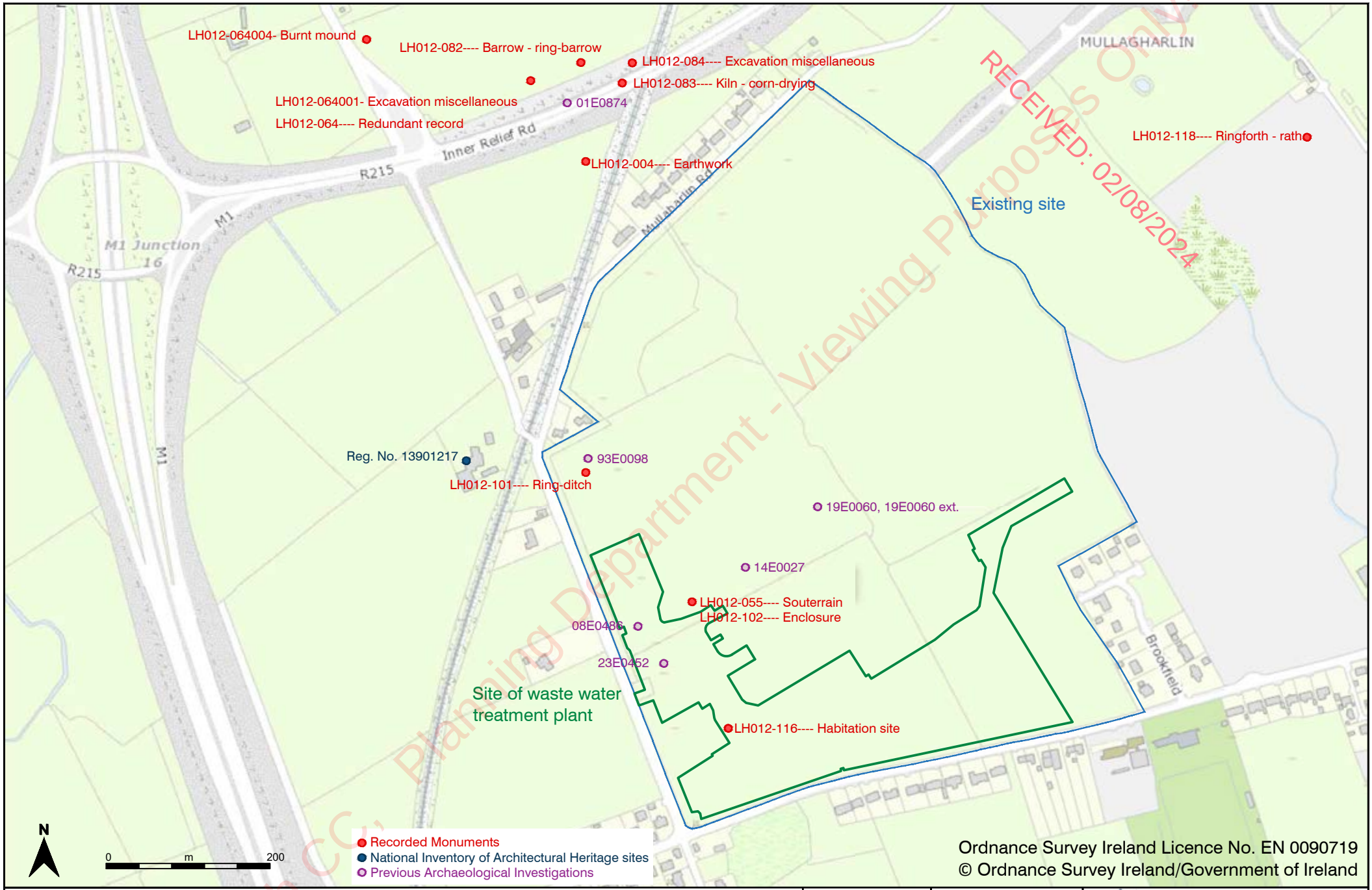


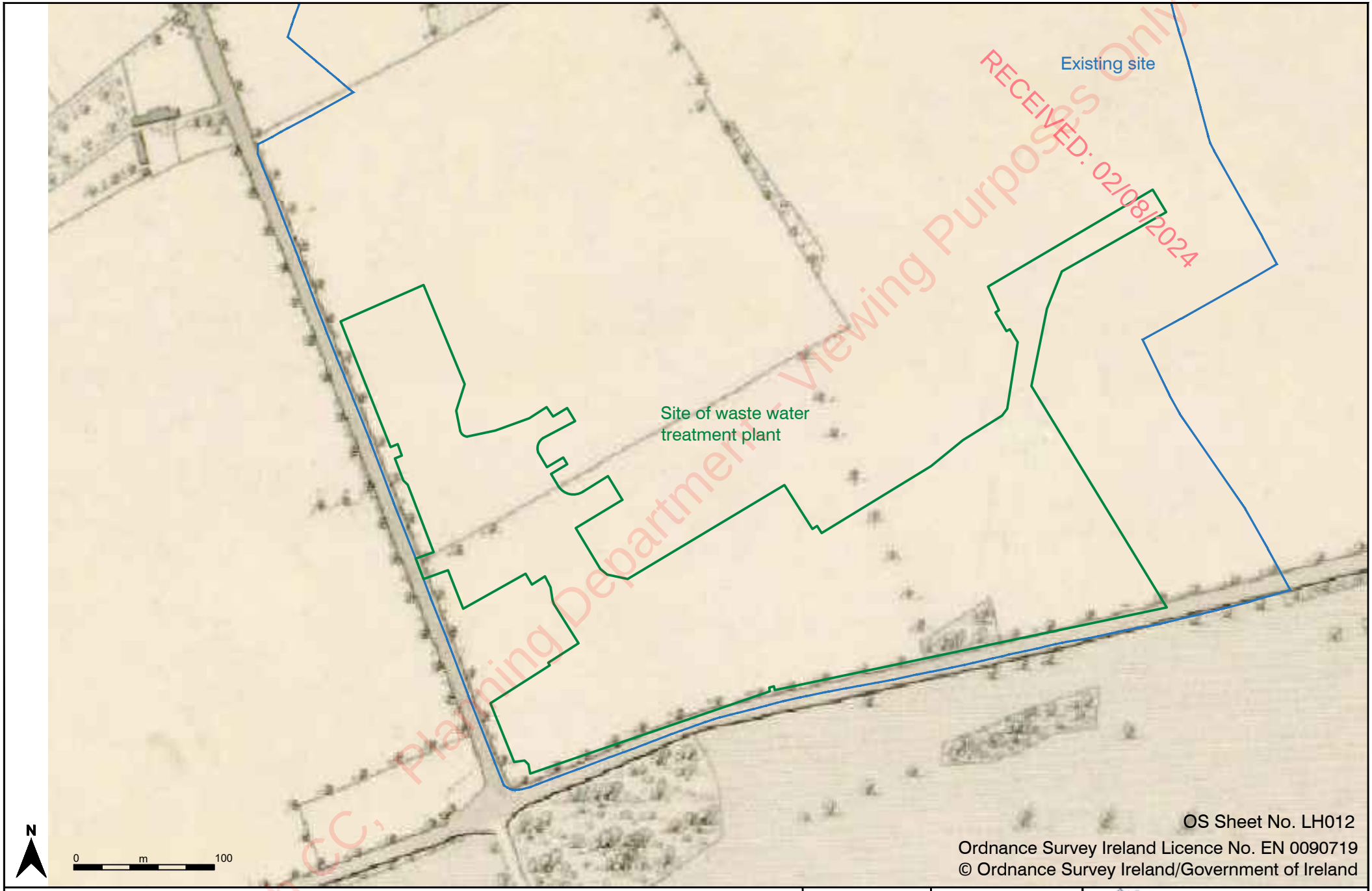
OS*i* Tile No. 2828-30, 3028-30

Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1001	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 1 Location of site		**Scale** 1:100,000 @ A4	



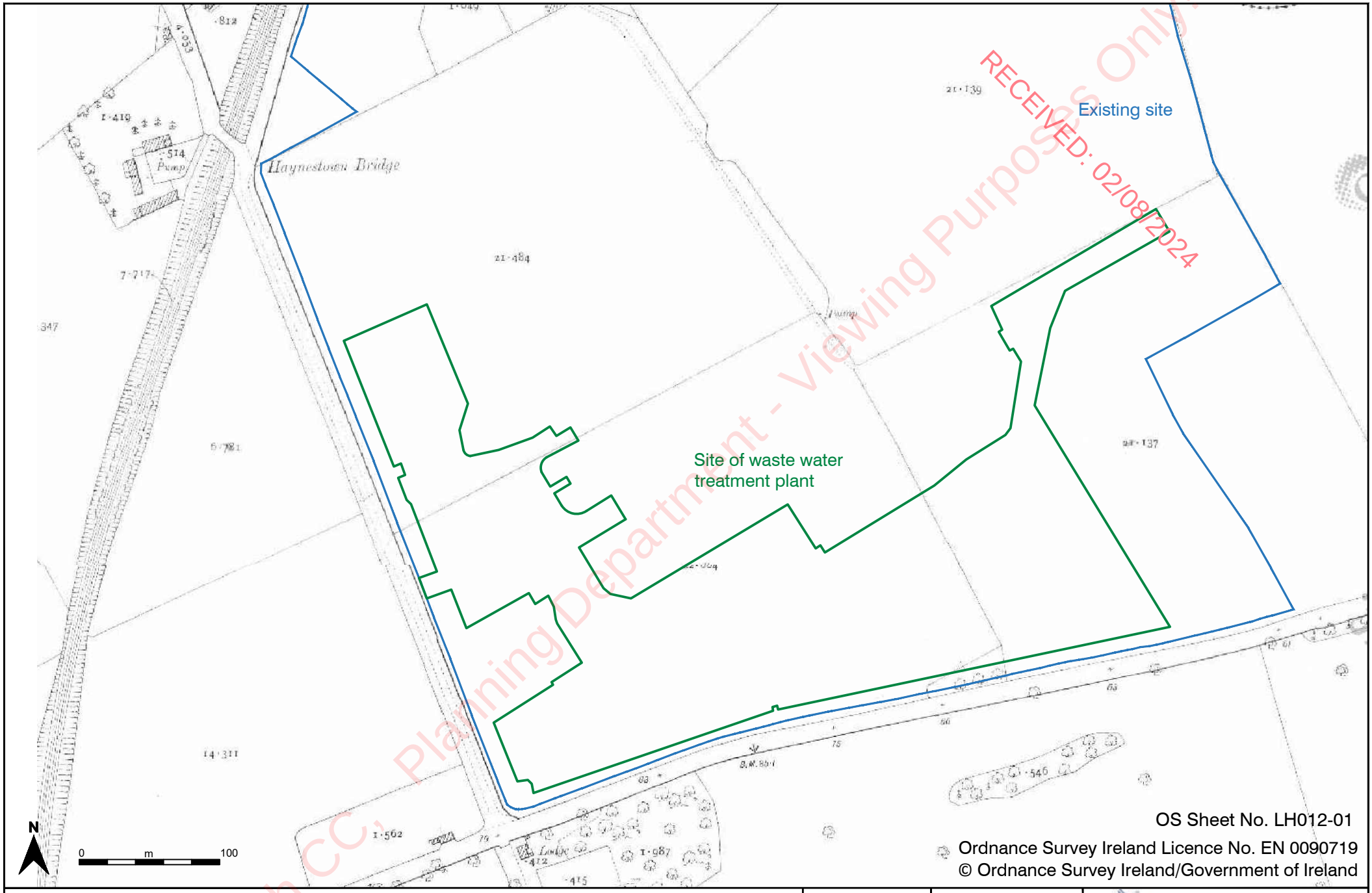
Project Haynestown WWTP, Dundalk, Co. Louth		**Date** July 2024	**Drawing No.** 2483_C1002
Figure 2 Location of site, previous archaeological investigations and nearby *Sites and Monuments Record* sites			**Scale** 1:6,000 @ A4

ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT



OS Sheet No. LH012

Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1003	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 3 Extract from 1st edition Ordnance Survey (OS) 6-inch map (surveyed 1834 - published 1836), showing location of site		**Scale** 1:3,500 @ A4	



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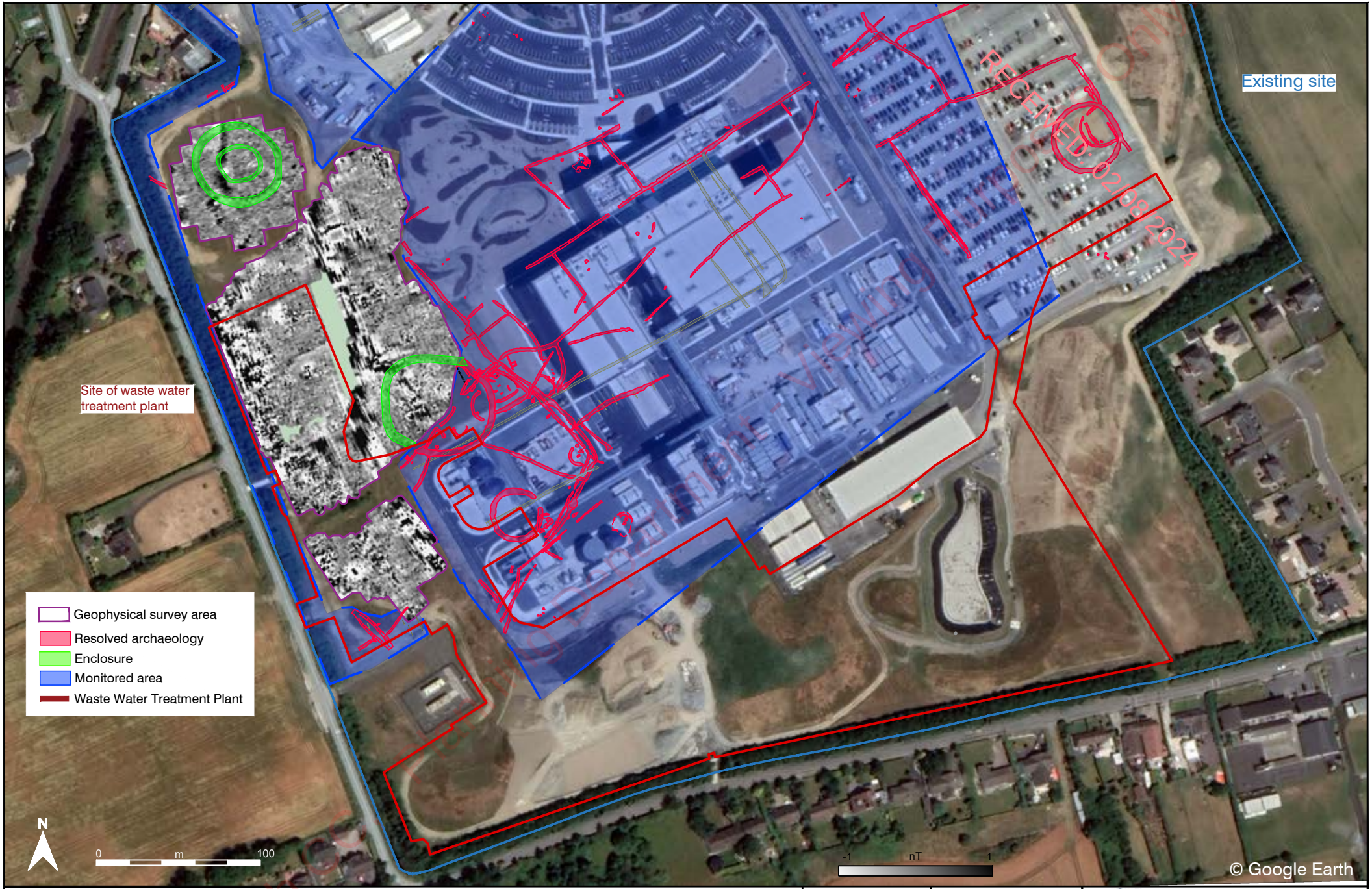
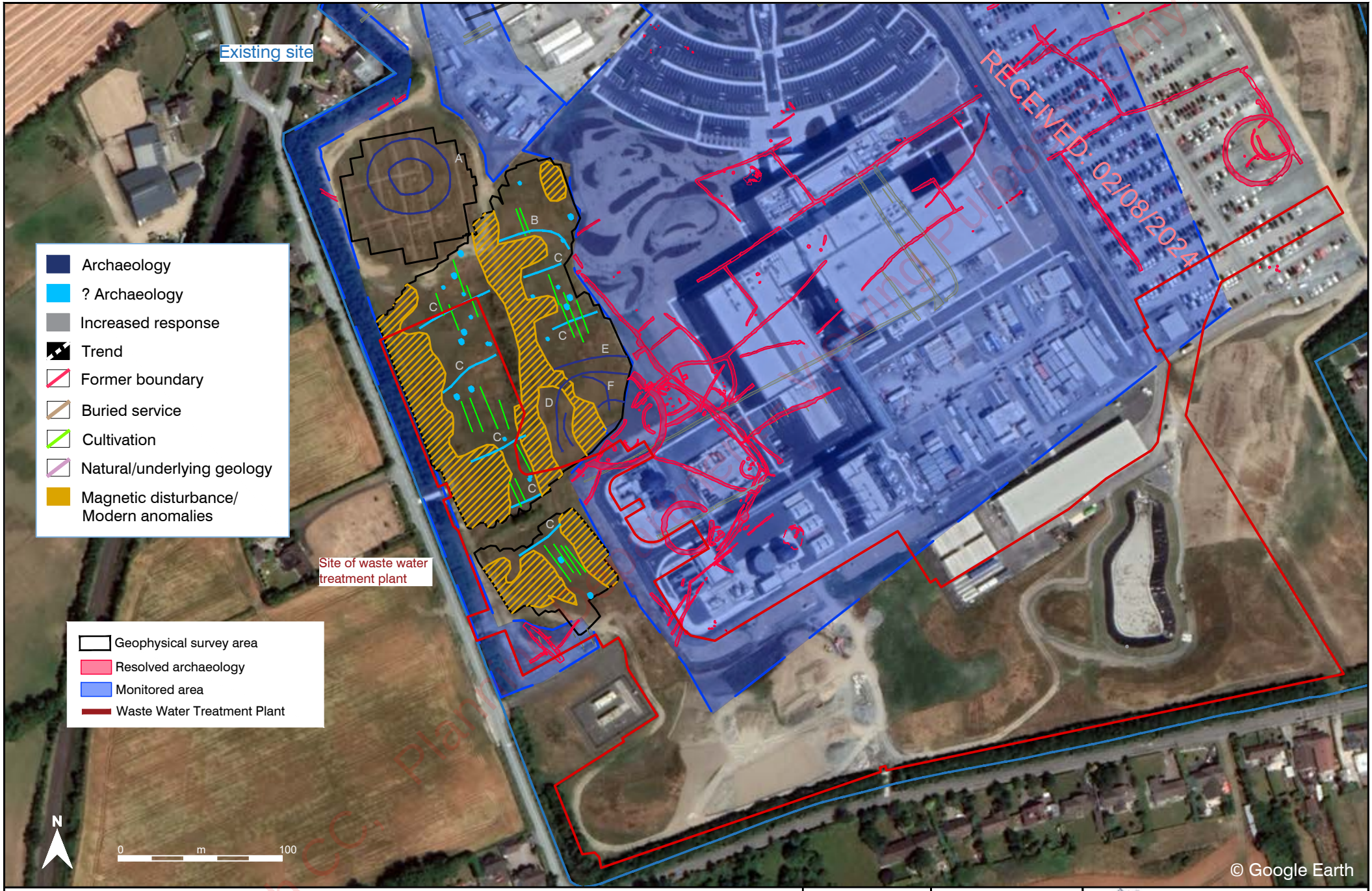
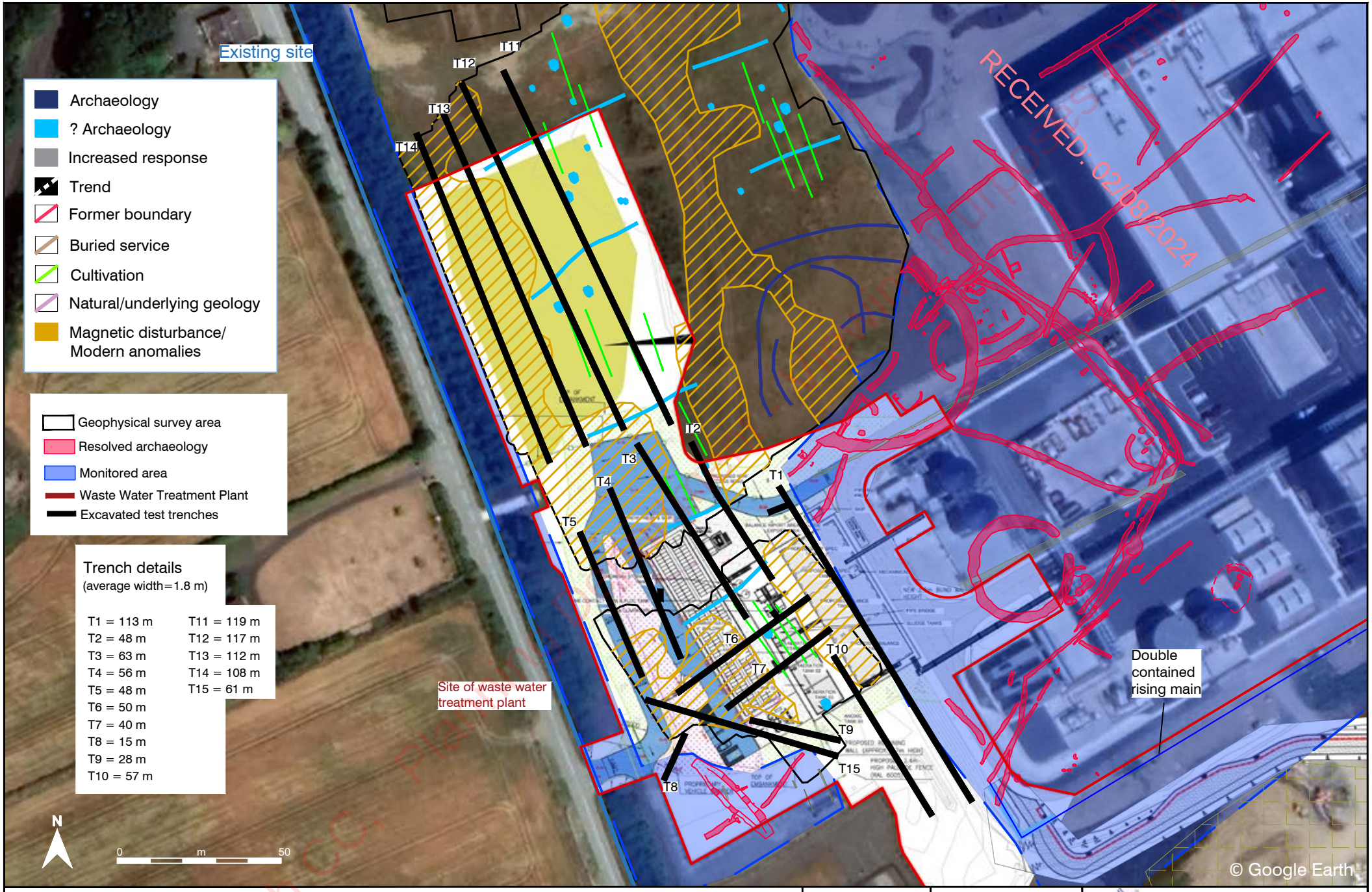
Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1004	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 4 Extract from 3rd edition Ordnance Survey (OS) 25-inch map (surveyed 1907 - published 1909), showing location of site		**Scale** 1:3,500 @ A4	



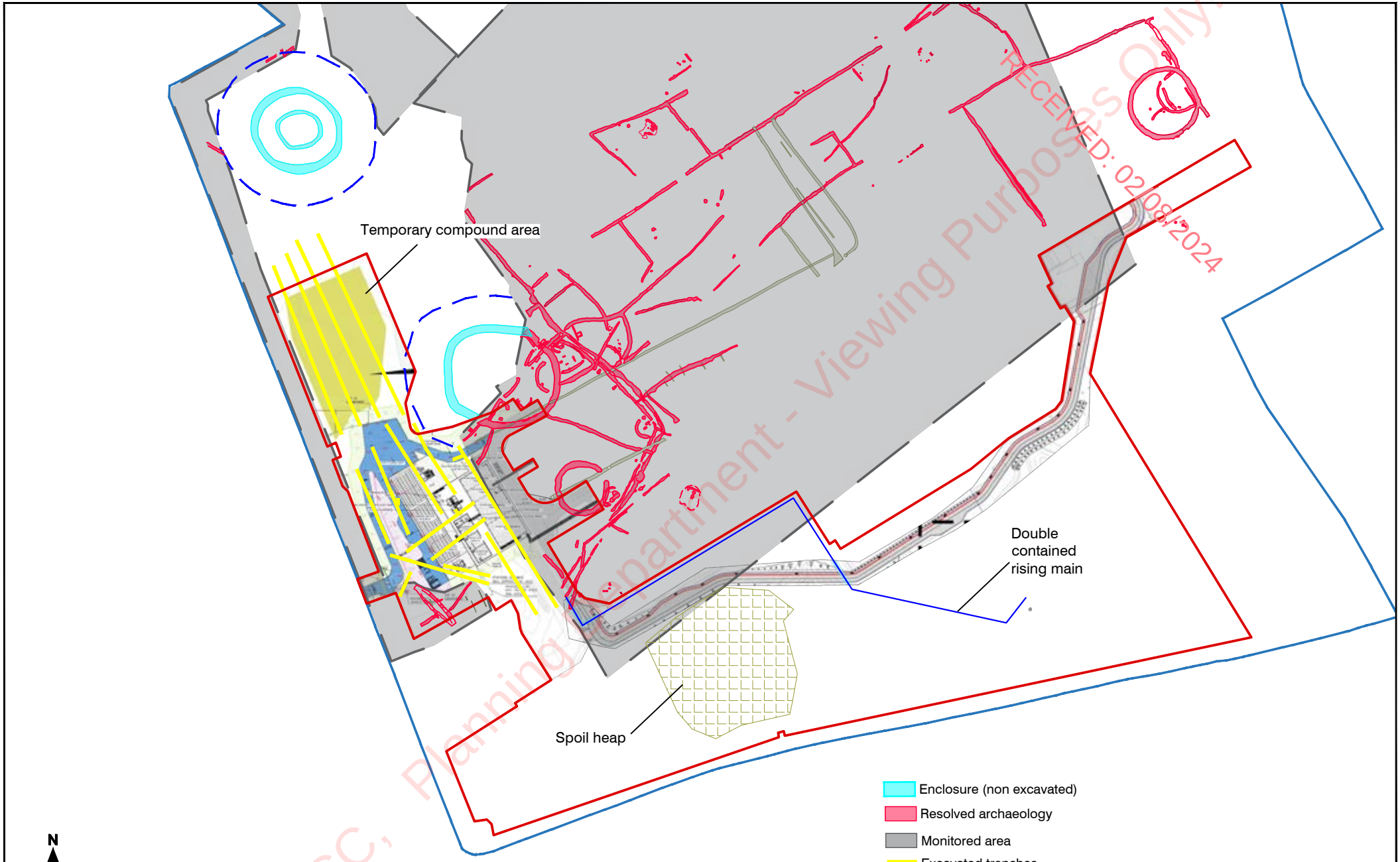
Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1005	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 5 Aerial view of site, showing greyscale images from 2019 and 2023 geophysical survey, resolved archaeology and area monitored		**Scale** 1:3,000 @ A4	



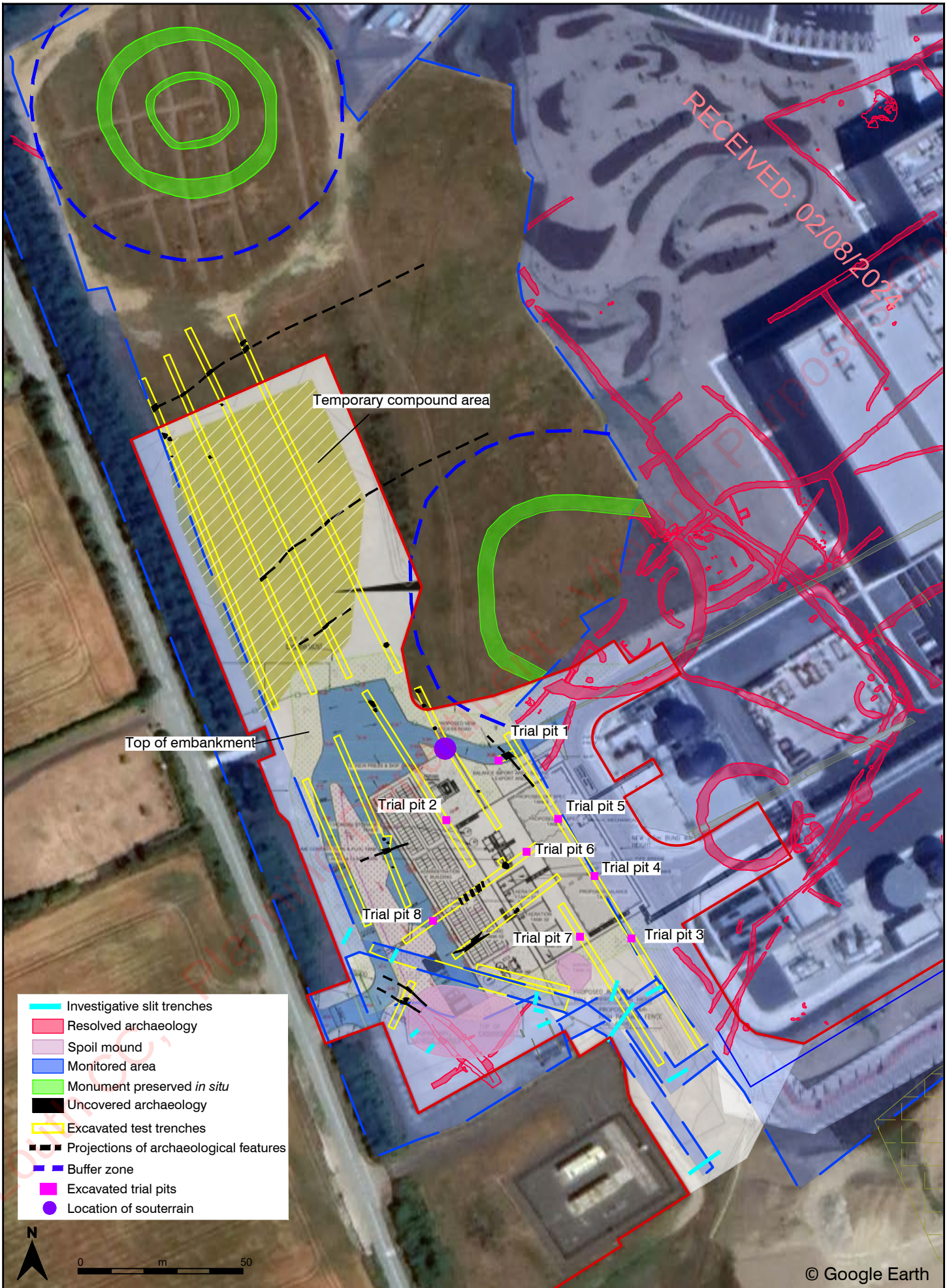
Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1006	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 6 Aerial view of site, showing geophysical survey interpretation, resolved archaeology and area monitored		**Scale** 1:3,000 @ A4	



Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1007	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 7 Detail of site development, showing geophysical survey interpretation, resolved archaeology and excavated trenches		**Scale** 1:1,500 @ A4	



Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1008	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 8 Detail of site development, showing location of excavated trenches, enclosures and associated buffer zones		**Scale** 1:3,000 @ A4	



Project	Haynestown WWTP, Dundalk, Co. Louth	**Date**	July 2024
Figure 9	Aerial view of site, showing location of excavated test trenches, uncovered archaeological features and excavated SI trial pits and Investigative slit trenches		

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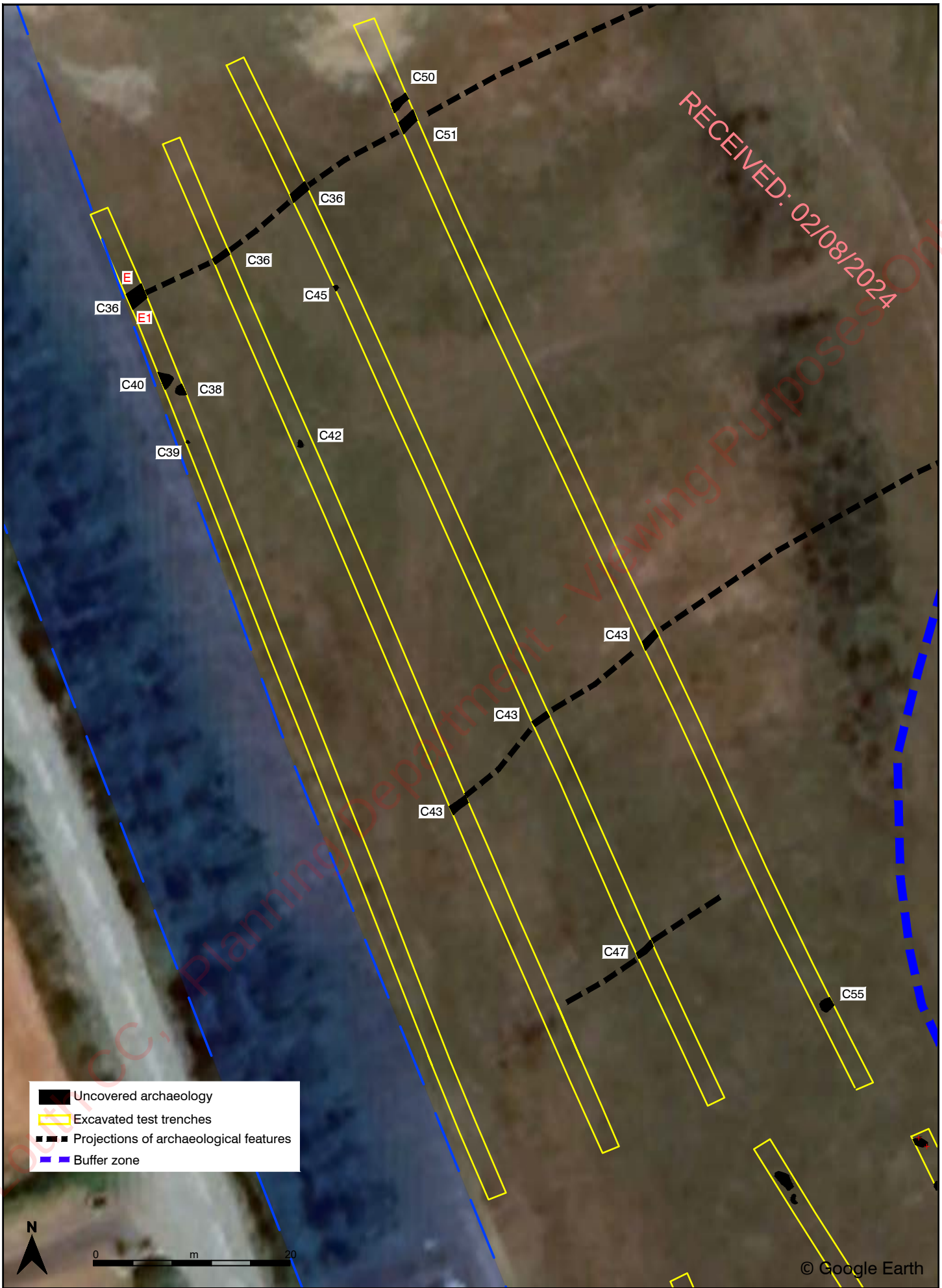
Scale	1:1,500 @ A4	**Drawing No.**	2483_C1009



Project	Haynestown WWTP, Dundalk, Co. Louth	**Date**	July 2024
Figure 10	Aerial view of site, showing details of uncovered archaeological features (north area)		
		Scale	1:500 @ A4
		Drawing No.	2483_C1010

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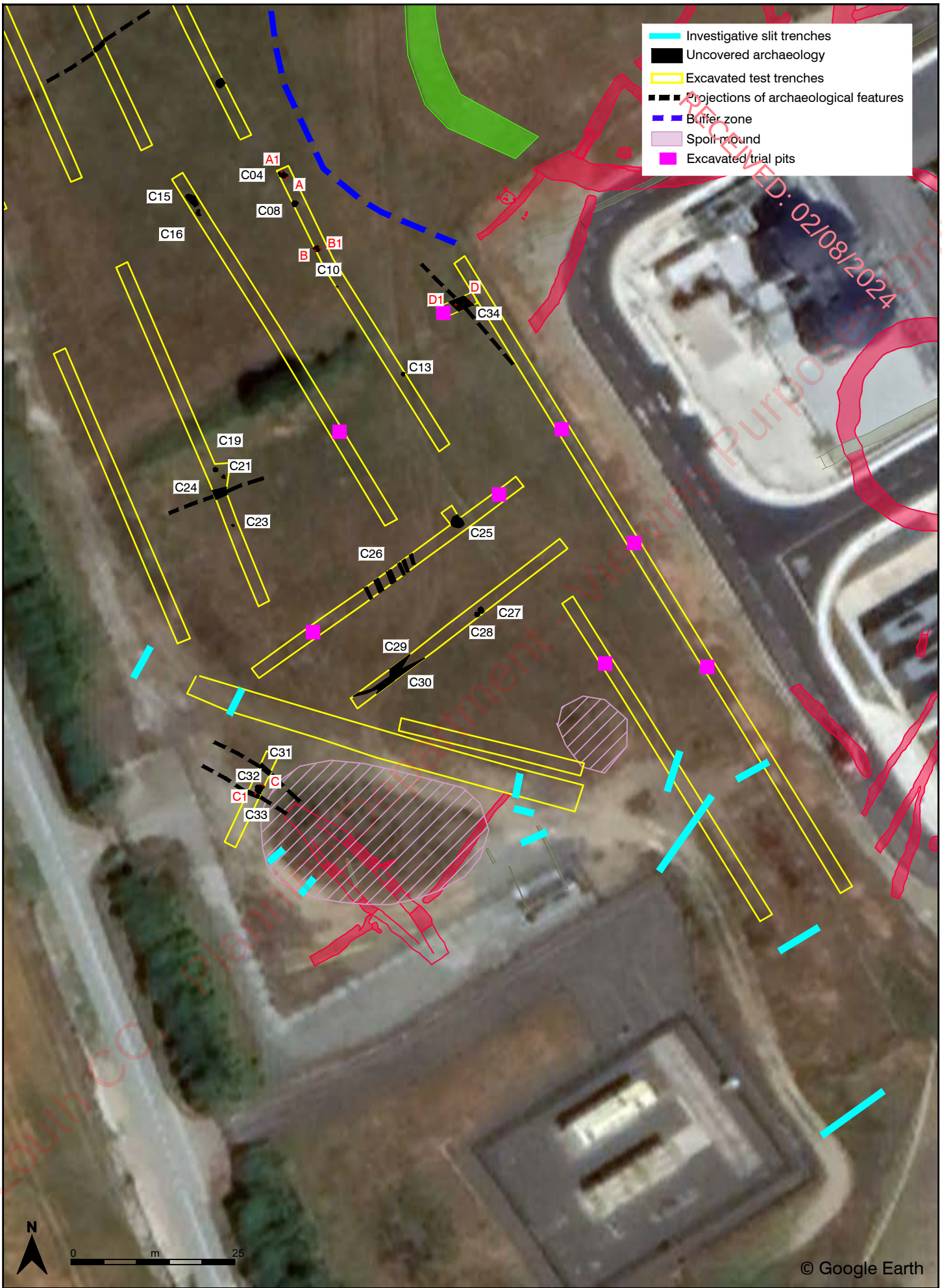
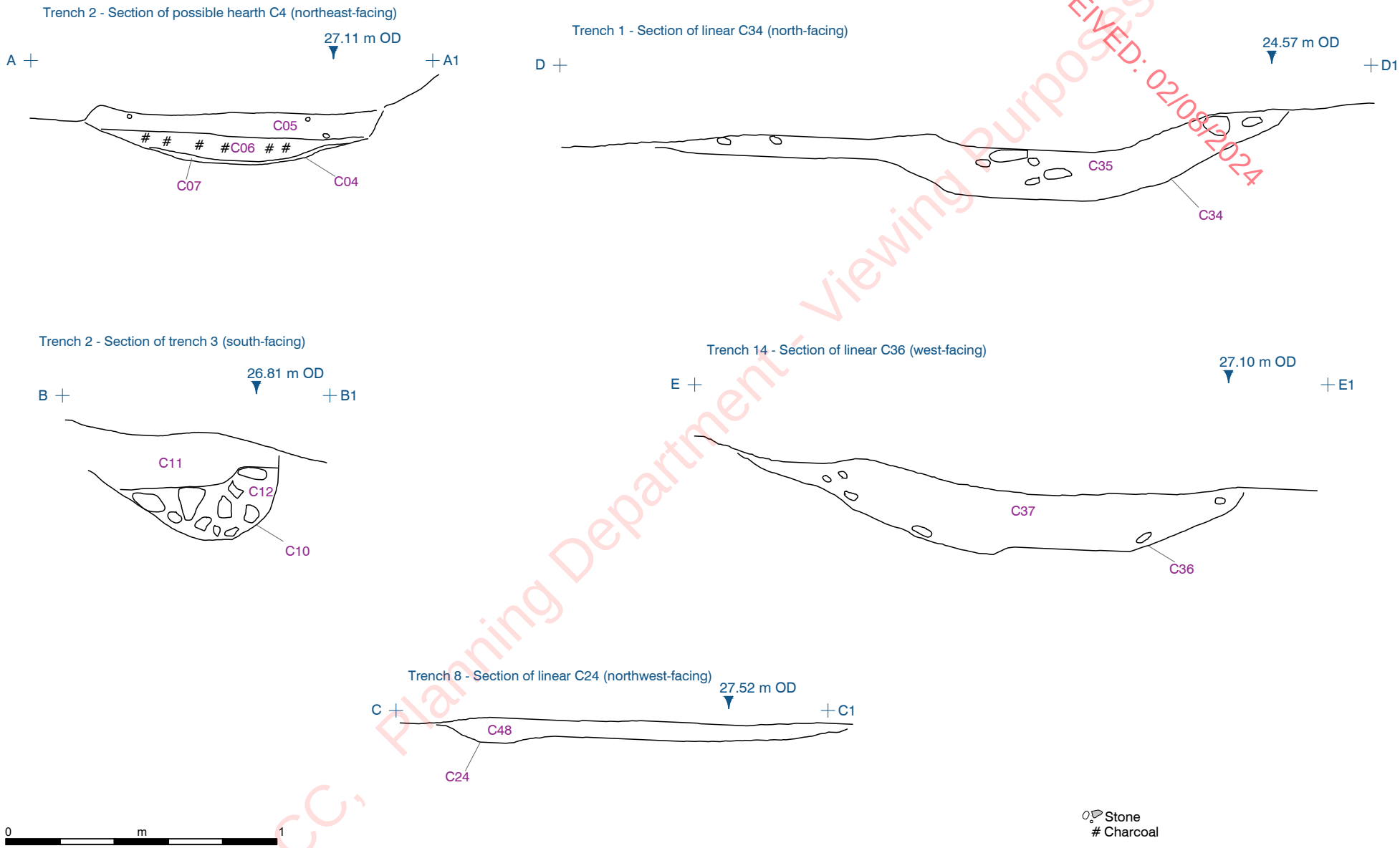


Project	Haynestown WWTP, Dundalk, Co. Louth	**Date**	July 2024
Figure 11	Aerial view of site, showing details of uncovered archaeological features (south area)		ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
		Scale	1:750 @ A4
		Drawing No.	2303_C1011



Project Haynestown WWTP, Dundalk, Co. Louth	**Date** July 2024	**Drawing No.** 2483_C1012	ARCHAEOLOGICAL CONSULTANCY SERVICES UNIT
Figure 12 Detail of excavated sections		**Scale** 1:20 @ A4	

Plate 1: Aerial view of site of proposed development during 2019–2020 excavations, looking north-east

Plate 2: Aerial view of site of proposed development during 2019–2020 excavations, looking south-west, with AGI visible in top left

Plate 3: Site of proposed development, looking north

Plate 4: Site of proposed development looking north-east