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INTRODUCTION

Background

- 12.1 This Chapter of the Environmental Impact Assessment Report (EIAR), commissioned by SLR Consulting Ireland on behalf of Kilsaran Concrete Unlimited Company, addresses the impacts on the archaeological, architectural and cultural heritage of the application site and the surrounding area of a proposal to develop a new sand and gravel pit at Naul, County Meath. The site location and study area are indicated in **Figure 12-1**. The existing site, operations and the proposed development are described in detail in Chapters 1 and 2 of this EIAR.
- 12.2 The proposed development will consist of:
- Extraction and processing on site, to include washing (with associated closed recycled washing plant and lagoon system), screening and crushing; storage; stockpiling and haulage of sand and gravel to service the existing readymix concrete plant operated by Kilsaran on the eastern side of the R108 regional road and permitted under P. Ref. 80/572 & 22/153 (ABP-314881-22);
 - The total extraction area extends to an area of c. 6.2 hectares and will be worked (extracted and restored) on a phased basis for a period of 11 years plus 1 year to complete final restoration works (total duration of 12 years);
 - Phased stripping and storage of topsoil and overburden materials for reuse in the restoration works. Restoration of the site will be to a beneficial agricultural after-use;
 - Access to the site will be through the existing agricultural enterprise site entrance onto the R108 regional road with upgrade of same to consist of setting-back of the existing boundary wall to the north of the site access, and provision for the upgrade of the existing internal access track and sections of a new access track which will include a new weighbridge; and
 - All associated site ancillary works within an overall application area of c. 14.9 hectares.

Scope of Work / Methodology

- 12.3 This study complies with the requirements of Directive EIA 2014/52/EU. The chapter is an assessment of the known or potential cultural heritage resource within a specified area and includes the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. It consists of a collation of existing written and graphic information in order to identify the likely context, character, significance and sensitivity of the known or potential cultural heritage, including architectural and archaeological aspects using an appropriate methodology (EPA 2002, 2003 and 2022). It consists of the following study stages:
- Baseline Studies; and
 - Assessment of the proposed development area.
- 12.4 The study involved detailed investigation of the archaeological and historical background of the development site, the landholding and the surrounding area extending 1km from the development boundary (**Figure 12-1**). This area was examined using information from the Record of Monuments and Places of County Meath, the Meath County Development Plan, lists of excavations and cartographic and documentary sources. A field inspection was carried out on 30th August 2019 to identify and assess any known archaeological sites and previously unrecorded features and possible finds within the area of the landholding.

- 12.5 The criteria and definitions for describing effects set out below is drawn from the 2022 EPA Guidelines.

Quality of Effects	Positive A change which improves the quality of the environment.
	Neutral No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/adverse Effects A change which reduces the quality of the environment.
Significance of effects	Imperceptible An effect capable of measurement but without noticeable consequences.
	Not significant An effect which causes noticeable changes in the character of the environment but without noticeable consequences.
	Slight effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging trends.
	Significant effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very Significant effects An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment.
	Profound effects An effect which obliterates sensitive characteristics
Describing the extent and context of effects	Extent Describe the size of the area, the number of sites, and the proportion of population affected by an effect.
	Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions.
Describing the Probability of effects	Likely effects The effects can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely effects The effects can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
	Momentary effects

Describing the duration and frequency of effects	Effects lasting from seconds to minutes.
	Brief effects Effects lasting less than a day.
	Temporary effects Effects lasting less than a year.
	Short-term effects Effects lasting one to seven years.
	Short-term effects Effects lasting seven to fifteen years.
	Long term-term effects Effects lasting fifteen to sixty years.
	Permanent effects Effects lasting over sixty years.
	Reversible effects Effects that can be undone, for example through remediation or restoration.
	Frequency of effects Describe how the effect will occur.
Describing the types of effects	Indirect effects Impacts on the environment which are not a direct result of the project.
	Cumulative effects The addition of minor or significant effects, including effects of other projects, to create a larger more significant effect.
	'Do-Nothing Effects' The environment as it would be in the future should the project not be carried out.
	'Worst case' effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable effects When the full consequences of a change in the environment cannot be described.
	Irreversible effects When the character distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual effects The degree of environmental change that will, occur after the proposed mitigation measures take effect.
	Synergistic effects Where the resultant effect is of greater significance than the sum of its constituents.

- 12.6 An impact assessment and mitigation strategy have been prepared. An impact assessment is undertaken to outline potential adverse impacts that the proposed development may have on the cultural resource, while a mitigation strategy is designed to avoid, reduce or offset such adverse impacts.
- 12.7 The application site is located in the townland of Naul, Co. Meath, on OS Six Inch sheet Nos. 33 and 34, 0.7 km to the north of the river Delvin, north-west of the village of Naul and west of the R108 Road. The proposed development would involve the extraction of sand and gravel in an area of 6.2 hectares.
- 12.8 Extracts from the Record of Monuments and Places for Counties Meath and Dublin are presented on a map of the local area around the site in **Figure 12-1**. RMP sites included on the Records of Monuments and Places statutory mapping are identified by black circles. The application area is shown in red.

Contributors / Author(s)

- 12.9 The assessment was prepared by Dr. Charles Mount who is a Member of the Institute of Archaeologists of Ireland and has more than thirty years of cultural heritage assessment experience. He holds M.A. and Ph.D. degrees in archaeology as well as a professional diploma in EIA and SEA Management.

Limitations / Difficulties Encountered

- 12.10 No limitation or difficulties were encountered during the desktop study, field survey or in the preparation of this report.

REGULATORY BACKGROUND

- 12.11 The following paragraphs set out the regulatory background regarding cultural impact assessments in Ireland in general and the site-specific planning background relevant to this cultural impact assessment.

Legislation

- 12.12 No specific Irish legislation exists governing cultural heritage assessments.

Planning Policy and Development Control

- 12.13 The Meath County Development Plan 2021-27 is the statutory plan detailing the development objectives/policies of the local authority. The plan includes objectives and policies, relevant to this assessment, i.e., with regard to archaeological and cultural heritage. The County Development Plan has several policies in relation to archaeological and architectural heritage (see below).

- 12.14 The Council's Archaeological Heritage policies and objectives are:

- **HER POL 1** To protect sites, monuments, places, areas or objects of the following categories:
 - Sites and monuments included in the Sites and Monuments Record as maintained by the National Monuments Service of the Department of Housing, Local Government and Heritage;
 - Monuments and places included in the Record of Monuments and Places as established under the National Monuments Acts;

- Historic monuments and archaeological areas included in the Register of Historic Monuments as established under the National Monuments Acts; Meath County Development Plan 2021-2027 Chapter 8;
 - National monuments subject to Preservation Orders under the National Monuments Acts and national monuments which are in the ownership or guardianship of the Minister for Housing, Local Government and Heritage, or a local authority;
 - Archaeological objects within the meaning of the National Monuments Acts; and Wrecks protected under the National Monuments Acts or otherwise included in the Shipwreck Inventory maintained by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht.
- **HER POL 2** To protect all sites and features of archaeological interest discovered subsequent to the publication of the Record of Monument and Places, in situ (or at a minimum preservation by record) having regard to the advice and recommendations of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and The Framework and Principles for the Protection of the Archaeological Heritage (1999).
 - **HER POL 3** To require, as part of the development management process, archaeological impact assessments, geophysical survey, test excavations or monitoring as appropriate, for development in the vicinity of monuments or in areas of archaeological potential. Where there are upstanding remains, a visual impact assessment may be required.
 - **HER POL 4** To require, as part of the development management process, archaeological impact assessments, geophysical survey, test excavations or monitoring as appropriate, where development proposals involve ground clearance of more than half a hectare or for linear developments over one kilometre in length; or developments in proximity to areas with a density of known archaeological monuments and history of discovery as identified by a suitably qualified archaeologist.
 - **HER POL 5** To seek guidance from the National Museum of Ireland where an unrecorded archaeological object is discovered, or the National Monuments Service in the case of an unrecorded archaeological site.
 - **HER POL 6** To protect the Outstanding Universal Value of the UNESCO World Heritage Site of Brú na Bóinne in accordance with the relevant guidelines and national legislation, so that its integrity, authenticity and significance are not adversely affected by inappropriate development or change.
 - **HER POL 7** To encourage the retention, conservation, and appropriate re-use of traditional buildings within the UNESCO World Heritage Site of Brú na Bóinne in preference to either their replacement, or the construction of new buildings on green field sites.
 - **HER POL 8** To ensure that development within the UNESCO World Heritage Site of Brú na Bóinne shall be subject to the Development Assessment Criteria set out in Appendix 8 and the Development Management Guidelines in Chapter 11.
 - **HER POL 9** To consider individual housing within the UNESCO World Heritage Site of Brú na Bóinne, as shown on Map 8.1 - UNESCO World Heritage Site - Brú na Bóinne, only for those involved locally in full time agriculture and who do not own land outside of the UNESCO World Heritage Site of Brú na Bóinne and subject to compliance with all other relevant provisions contained in this Development Plan.

- **HER POL 10** To ensure that residential extensions within the UNESCO World Heritage Site of Brú na Bóinne respect the scale, design and character of the original building. Meath County Development Plan 2021-2027 Chapter 8.
- **HER POL 11** To support the Department of Culture, Heritage and the Gaeltacht and all stakeholders in the implementation of the Brú na Bóinne Management Plan, 2017.
- **HER POL 12** To recognise and respect potential World Heritage Sites in Meath on the UNESCO Tentative List – Ireland.
- **HER POL 13** To protect and preserve in situ all surviving elements of medieval town defences.
- **HER OBJ 1** To implement in partnership with the County Meath Heritage Forum, relevant stakeholders and the community the County Meath Heritage Plan and any revisions thereof.
- **HER OBJ 2** To ensure that development in the vicinity of a Recorded Monument or Zone of Archaeological Potential is sited and designed in a sensitive manner with a view to minimal detracting from the monument or its setting.
- **HER OBJ 3** To protect important archaeological landscapes from inappropriate development.
- **HER OBJ 4** To encourage the management and maintenance of the County's archaeological heritage, including historic burial grounds, in accordance with best conservation practice that considers the impact of climate change.
- **HER OBJ 5** To promote awareness of, and encourage the provision of access to, the archaeological resources of the county.
- **HER OBJ 6** To work in partnership with key stakeholders to promote County Meath as a centre for cultural heritage education and learning through activities such as community excavation and field/summer schools.
- **HER OBJ 7** To work in partnership with the community and all other relevant stakeholders to promote, understand, conserve and sustainably manage the UNESCO World Heritage Site of Brú na Bóinne.
- **HER OBJ 8** To encourage and facilitate pre-application discussions, in conjunction with the Department of Culture, Heritage and the Gaeltacht, regarding the siting and design of developments affecting the UNESCO World Heritage Site of Brú na Bóinne and the scope of any necessary impact assessments.
- **HER OBJ 9** To refer all planning applications within the UNESCO World Heritage Site of Brú na Bóinne to the Department of Culture, Heritage and the Gaeltacht for comment. These comments will be considered in the assessment of all such planning applications.
- **HER OBJ 10** To actively support and encourage the re-use of vacant and derelict dwellings within the Core and Buffer Zone of the World Heritage Site of Brú na Bóinne by providing assistance and professional advice to owners seeking to re-develop such sites.
- **HER OBJ 11** To protect the ridgelines which frame views within and from the UNESCO World Heritage Site of Brú na Bóinne from inappropriate or visually intrusive development.
- **HER OBJ 12** To prepare and implement a Business Plan for the World Heritage Site in conjunction with relevant stakeholders, subject to funding.
- **HER OBJ 13** To support the State in the nomination process of Tara and Kells to World Heritage status as part of an assemblage of Royal and Monastic Sites in co-operation with the relevant Local Authorities.

- **HER OBJ 14** To retain the surviving medieval street pattern, building lines and burgage plot widths in historic walled towns.
- 12.15 In relation to Architectural, Industrial and Landscape Design Heritage the Council's policies and objectives are to:
- **HER POL 14** To protect and conserve the architectural heritage of the County and seek to prevent the demolition or inappropriate alteration of Protected Structures.
 - **HER POL 15** To encourage the conservation of Protected Structures, and where appropriate, the adaptive reuse of existing buildings and sites in a manner compatible with their character and significance. In certain cases, land use zoning restrictions may be relaxed in order to secure the conservation of the protected structure.
 - **HER POL 16** To protect the setting of Protected Structures and to refuse permission for development within the curtilage or adjacent to a protected structure which would adversely impact on the character and special interest of the structure, where appropriate.
 - **HER POL 17** To require that all planning applications relating to Protected Structures contain the appropriate accompanying documentation in accordance with the Architectural Heritage Protection Guidelines for Planning Authorities (2011) or any variation thereof, to enable the proper assessment of the proposed works.
 - **HER POL 18** To require that in the event of permission being granted for development within the curtilage of a protected structure, any works necessary for the survival of the structure and its re-use should be prioritised in the first phase of development. It is the objective of the Council:
 - **HER OBJ 15** To review and update the Record of Protected Structures on an on-going basis and to make additions and deletions as appropriate.
 - **HER OBJ 16** To identify and retain good examples of historic street furniture, e.g. cast-iron post boxes, water pumps, light fixtures and signage, as appropriate.
 - **HER OBJ 17** To promote best conservation practice and encourage the use of appropriately qualified professional advisors, tradesmen and craftsmen, with recognised conservation expertise, for works to protected structures or historic buildings in an Architectural Conservation Area.
 - **HER OBJ 18** To provide detailed guidance notes and continue to develop the Council's advisory/educational role with regard to heritage matters and to promote awareness, understanding and appreciation of the architectural heritage of the County.
 - **HER OBJ 19** To commission a study over the lifetime of the Plan to assess the significance of the Mass Rocks and Holy Wells throughout County Meath.
 - **HER POL 19** To protect the character of Architectural Conservation Areas in Meath.
 - **HER POL 20** To require that all development proposals within or contiguous to an ACA be sympathetic to the character of the area, that the design is appropriate in terms of height, scale, plot density, layout, materials and finishes and are appropriately sited and designed with regard to the advice given in the Statements of Character for each area, where available.
 - **HER POL 21** To encourage the retention, sympathetic maintenance and sustainable re-use of historic buildings, including vernacular dwellings or farm buildings and the retention of historic streetscape character, fabric, detail and features.

- **HER POL 22** Seek the retention of surviving historic plot sizes and street patterns in the villages and towns of Meath and incorporate ancient boundaries or layouts, such as burgage plots and townland boundaries, into re-developments.
- **HER POL 23** To actively promote the retention and restoration of thatched dwellings as a key component of the built heritage of the County.
- **HER POL 24** To encourage appropriate change of use and reuse of industrial heritage structures provided such a change does not seriously impact on the intrinsic character of the structure and that all works are carried out in accordance with best conservation practice, subject to compliance with normal planning criteria.
- **HER POL 25** To protect and enhance the built and natural heritage of the Royal Canal and Boyne Navigation and associated structures and to ensure, in as far as practically possible, that development which may impact on these structures and their setting be sensitively designed with regard to their character and setting. Development of the project will be subject to the outcome of the Appropriate Assessment process.
- **HER POL 26** To encourage the protection and enhancement of heritage gardens and demesne landscapes, and to support, in consultation with the owners, the provision of public access to these sites as appropriate.
- **HER OBJ 20** To identify places of special character, with a view to their designation as Architectural Conservation Areas and to modify existing ACAs, where necessary.
- **HER OBJ 21** To prepare and review, where necessary, detailed character statements and planning guidance for each ACA.
- **HER OBJ 22** To avoid the demolition of structures and the removal of features and street furniture which contribute to the character of an ACA. The Council will require that any planning application for demolition or alteration within an ACA be accompanied by a measured and photographic survey, condition report and architectural heritage assessment.
- **HER OBJ 23** To ensure that conversions or extensions of traditional buildings or the provision of new adjoining buildings, are sensitively designed and do not detract from the character of the historic building.
- **HER OBJ 24** To update the survey of surviving thatched structures in the County and to promote available grant schemes to assist owners with their retention and repair.
- **HER OBJ 25** To carry out a survey of Land Commission dwellings over the life of the Development Plan, to acknowledge their contribution to the building stock of the County, as appropriate.
- **HER OBJ 26** To require an architectural / archaeological assessment, as appropriate, which references the Meath Industrial Heritage Survey and other relevant sources, for all proposed developments on industrial heritage structures or sites.
- **HER OBJ 27** To carry out Phase 2 of the Industrial Heritage Survey which will comprise a field survey and assessment of surviving structures and sites and consider (if appropriate) proposing them for addition to the Record of Protected Structures.
- **HER OBJ 28** To discourage development that would adversely affect the character, the principal components of, or the setting of historic parks, gardens and demesnes of heritage significance.
- **HER OBJ 29** To require that proposals for development in designated landscapes and demesnes include an appraisal of the landscape, designed views and vistas, including a tree survey, where relevant, in order to inform site appropriate design proposals.

Guidelines

- 12.16 The report format and some of the descriptions of effects are based on the Guidelines on the Information to be contained in Environmental Impact Assessment Reports, published by the Environmental Protection Agency (EPA) in 2022.

Significant Risks

- 12.17 There are no known significant risks to human health or environmental effects, which may occur in relation to this cultural heritage assessment.

RECEIVING ENVIRONMENT

Study Area

- 12.18 The overall study area extends 1km from the application area in all directions and is shown in **Figure 12-1**.

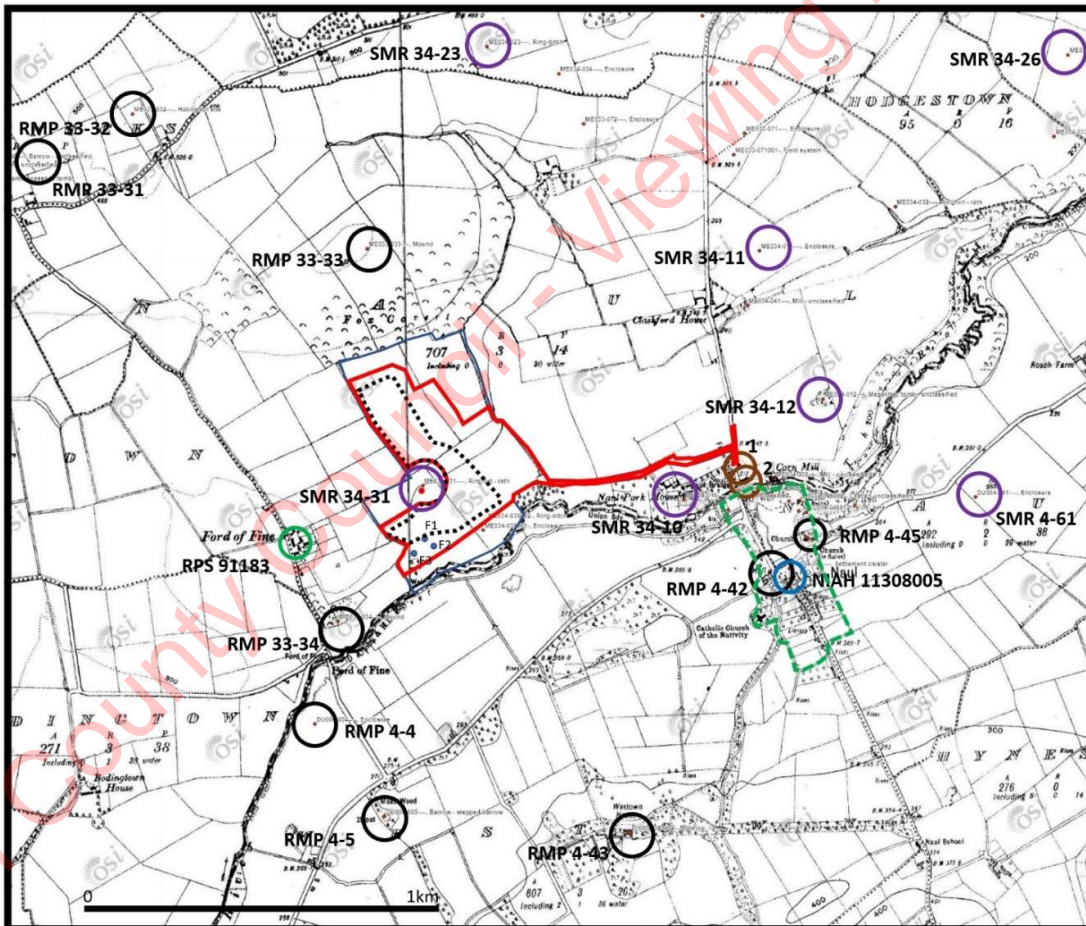


Figure 12-1 The study area superimposed on the Sites and Monuments Record. The landholding is indicated with a blue line and the application area by a red line. The area of extraction is indicated by the black dashed line. Features identified during archaeological testing in 2008 are indicated with blue dots and numbered F1-F3. RMP sites are indicated with black circles and polygon. SMR sites with purple circles. Protected Structures with green circles and polygon, NIAH structures with blue circles and non-designated structures on the 1909 OS map with brown circles.

Baseline Study Methodology

- 12.19 Research has been undertaken in two phases. The first phase comprised a paper survey of all available archaeological, historical and cartographic sources. The second phase involved a field inspection and archaeological assessment of the proposed development area.

Paper Study

- 12.20 This is a document search. The following sources were examined and a list of sites and areas of archaeological potential compiled from:
- Record of Monuments and Places;
 - The Sites and Monuments Record;
 - Available aerial photography;
 - Cartographic and written sources relating to the study area;
 - Meath County Development Plan 2021-2027;
 - Fingal County Development Plan 2023-29; and
 - The National Inventory of Architectural Heritage.

The Record of Monuments and Places / Sites and Monuments Record

- 12.21 This was established under section 12 (1) of the 1994 National Monuments (Amendment) Act and provides that the Minister shall establish and maintain a record of monuments and places where the Minister believes there are monuments, such record to be comprised of a list of monuments and relevant places and a map or maps showing each monument and relevant place in respect of each county in the State. The associated files contain information of documentary sources and field inspections where these have taken place. 20 Recorded monuments were noted within the study area. All available information on these sites is provided in Appendix 12-1.
- 12.22 Examination of the Sites and Monuments Record (SMR) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht on 2 July 2024 indicated that there are no undesignated monuments included within the application area (see Appendix 12-2).

Cartographic Sources

- 12.23 This included seventeenth century mapping as well the 1st and 2nd editions of the Ordnance Survey six-inch maps and Documentary sources provide more general historical and archaeological background.

The County Development Plans

- 12.24 These notes structures listed for preservation.

National Inventory of Architectural Heritage

- 12.25 The National Inventory of Architectural Heritage (NIAH) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht was examined as part of the baseline study for this chapter of the EIAR on 2 July August 2024 (details provided further on in this chapter).

Field Inspection

- 12.26 A field inspection was carried out to determine the location, extent and ascertain the significance of any archaeological sites and to identify any previously unrecorded or suspected sites and potable finds.

RECEIVING ENVIRONMENT, HISTORICAL AND ARCHAEOLOGICAL LANDSCAPE

The Landscape

- 12.27 The application site is in the townland of Naul, Co. Meath, on OS Six Inch sheet Nos. 33 and 34, north of the river Delvin, c.0.7 km to the north-west of the town of Naul and west of the R108 Road. The soil is fine loamy drift with limestones overlying drift with limestones (<http://gis.teagasc.ie/soils/map.php>).

Historical and Archaeological Background

- 12.28 The following is a brief summation of the main types of sites and monuments that are known from the county along with the historical development of the study area. It is intended as a guide to the types of sites and monuments that might be encountered in the study area.
- 12.29 The site is situated in the townland of Naul, in the Barony of Duleek Upper, and the civil parish of Clonalvy.

The Prehistoric Period

- 12.30 Prehistoric activity is recoded in the study area. On the Fourknocks ridge to the north-west of the application area where the Fourknocks Passage Tomb RMP ME033-028001- is situated outside the study area there is a pit-burial (RMP ME033-031001-), a barrow (RMP ME033-031----) and a prehistoric settlement site (RMP ME033-032----) recorded within the study area. Other prehistoric sites in the study area include a destroyed megalithic tomb (SMR ME034-012----) in Naul townland, ring-ditches in Herbertstown and Tullog townlands (SMR ME034-023----, ME034-026----), a barrow in Westown townland (RMP DU004-005) and two levelled possible prehistoric mounds (RMP ME033-033---- and RMP ME033-034----) in Naul townland.

The Early Medieval Period

- 12.31 By the eighth century AD the Southern Ui Neill had become overlords of the Kingdom of Brega, extending over Meath, North Dublin and South Louth and ruled the vassal sept of the Ciannachta Brega, who occupied the study area (MacCotter 2008, 204-5). The Ciannachta occupied land on both sides of the River Boyne and are noted in the Annals from the sixth century. Byrne suggests that they had come from Co. Derry and had been settled on lands conquered by the Ui Neill. Classically settlement at this period is indicated by the presence of enclosed farmsteads known as ringforts, when enclosed with earthen banks, and cashels when enclosed by stone walls. There are no ringforts known from the study area but three enclosures in Westown (DU004-004----) and Naul (RMP DU004-045009-, SMR ME034-011----) may be the remains of ringforts.

The Later Medieval Period

- 12.32 The first appearance of the Anglo-Normans in Meath was in 1171 when Milo de Cogan raided Meath and plundered Duleek. In the following year King Henry II granted the Kingdom of Meath to Hugh de Lacy to hold as King Murrough O Melaghlin, King of Meath, had held it (Otway-Ruthven 1980, 52). De Lacy established a manor at Duleek and constructed a motte castle. At some point in the medieval period the Manor of the Naul came into the hands of the Cruise family. In a Royal inquisition of 1333 John Cruys (Cruise) of Nall (Naul) was recorded as owing Royal Service (Orpen 1920, 176). The Cruise family held the Manor of Naul until the seventeenth century.
- 12.33 The process of sub-infeudation which was characteristic of Anglo-Norman settlement is normally associated with the construction of timber castles, known as Motte and Baileys. However, there

are no Mottes known in the study area and the closest example is at Lisdernan north-east of Bellewstown. Manorialism describes the organisation of the feudal rural economy and society that characterised Anglo-Norman settlement. In Ireland the Lord's Manor House was also often enclosed by a rectangular moat. These moated sites are a useful indicator of Anglo-Norman settlement. However, there are no Moated sites known in the study area or the vicinity. A Castle in Naul townland north of the River Delvin (SMR ME034-010---) is thought to have been constructed by the Caddell family in the 13th century. At some point in the fifteenth century the Cruise family constructed a Tower House (RMP DU004-045002-) in Naul south of the River Delvin.

The Post-Medieval Period

- 12.34 In 1610 the Manor of Naul was held by Christopher Cruise who also held Naul Tower House (RMP DU004-045002-) (Lynch 1830, 106). The Down Survey records that in 1641 Naul was held by John Cudlesh but by 1670 the Book of Survey and Distribution records it was held by Sir Audley Mervin (<http://downsurvey.tcd.ie>). By 1847-64 Griffith's valuation records that the application area had come into the hands of Pollard Urquhart, George Keating and others.

BUILDINGS

Naul Architectural Conservation Area

- 12.35 Naul is designated an architectural conservation (ACA) area in the County Fingal development Plan 2023-2029. The town is described in the plan as:

Naul popularly known as The Naul, is a small rural village in the very north of Fingal. The name Naul derives from the Irish An Aill, "The Cliff", referring to the rocky cliffs on either side of the River Delvin north of the village. In the medieval period a parish church, several mills and three tower houses were recorded here. The remains of one of the medieval tower houses, known as the Black Castle, is location on top of the rocky outcrop that gives the village its name. There is a strong rural vernacular character to the village from the modest historic building stock that survives along the Main Street, some of which is heavily modified. The historic fabric is typical of Irish villages, conforming to a simple typology of rendered rubble stone walls and slated or formerly thatched corrugated-iron roofs. Despite a prominent row of formally designed houses, the architectural significance of the village lies in its historic informality. At the northern end of the village the old coaching inn, the square in front of it, and the thatched building of the Seamus Ennis Arts Centre create a distinctive space, despite the busy road junction.

- 12.36 The proposed application area is located c.0.57km west of the ACA on the north side of the Delvin River and will have no impact on the setting of the ACA. The ACA contains several protected structures that are noted individually below.

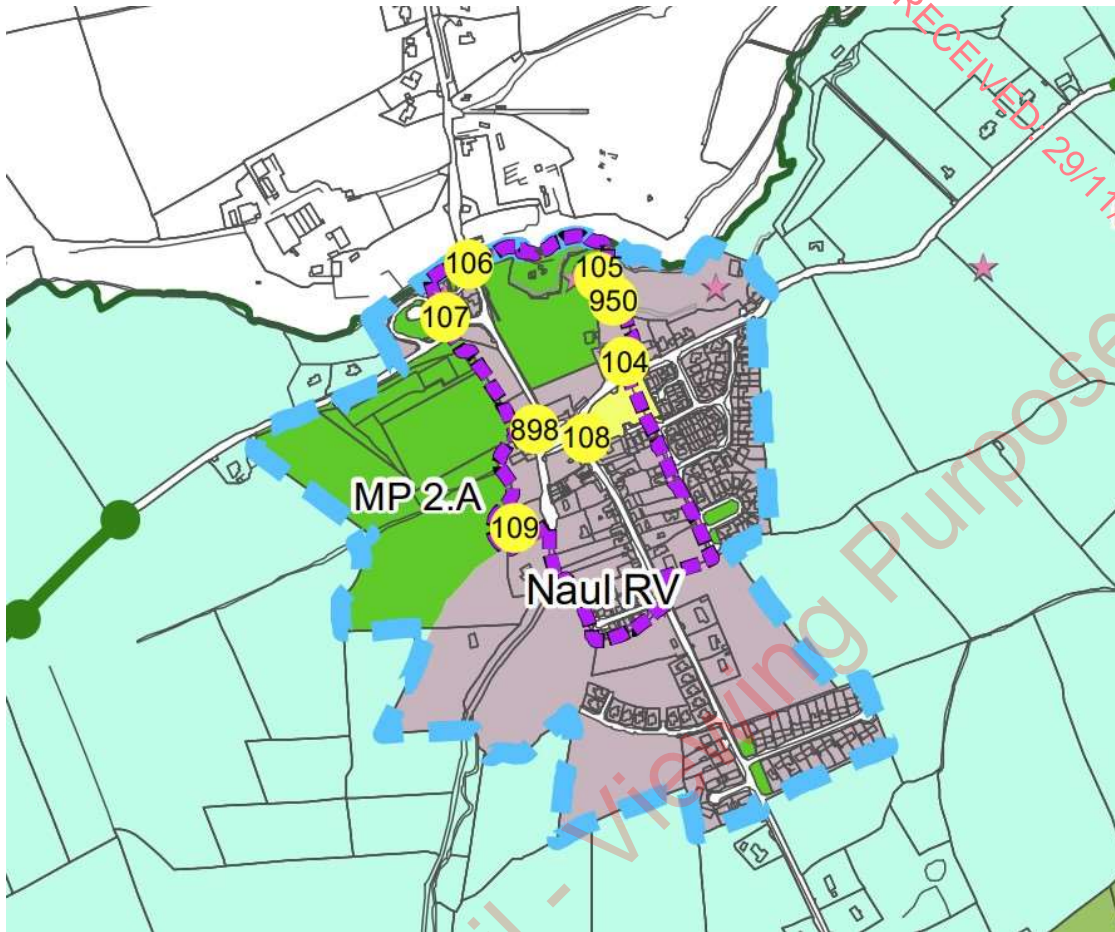


Figure 12-2 Fingal County Development Plan 2023-2029 map indicated the extent of the Naul ACA and Protected Structures (yellow circles).

Protected Structures

- 12.37 The Meath County Development Plan 2021-2027 and the Fingal County Development Plan 2023-2029 containing the Record of Protected Structures was examined as part of the baseline study for this chapter of the EIAR. The review established that there are no Protected Structures situated within the application area. There are nine Protected structures listed within the study area (see **Table 12-1** below and **Figures 12-1** and **12-2**).
- 12.38 The closest Protected Structure to the proposed site is a House RPS 91183 in Naul townland. This structure is situated 240m west of the application area. The structure has no views of the application area which is screened by several field boundaries with mature hedges. This and the remaining Protected Structures in the study area are considered to be too far distant to be directly or indirectly impacted by the proposal.

Table 12-1
Protected Structures in the Study Area

No.	91183
Structure type	Thatched House
Townland	Naul

Designation	Record of Protected Structures
Data source	Co. Meath Record of Protected Structures
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Six-bay, single-storey with attic formerly thatched house, now with tin roof, 2 brick chimneys, whitewashed lime rendered mud walls, 6/6 pane windows, early extension to rear, and farmyard.
Photos	-
No.	950
Structure type	Double Lime Kiln
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Mid to late 18 th century rounded segmental arch lime kiln & early to mid 19 th century semi-elliptical arch lime kiln
Photos	-
No.	0104
Structure type	Church (in ruins) and graveyard
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Remains of early 18th century single-cell stone chapel (plaque dates it to 1710 but retains earlier features) & enclosed graveyard
Photos	-
No.	0105
Structure type	Castle

Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance:	Regional
Type of impact	None
Significance & quality of impact	None
Description	Remains of medieval stone castle.
Photos	-
No.	0106
Structure type	Bridge
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	18th century triple arched stone road bridge over River Delvin.
Photos	-
No.	0107
Structure type	Mill
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Former 18th century water mill complex, converted to apartments.
Photos	-
No.	0108
Structure type	Thatched structure
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures

Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Late 18th or early 19th century thatched structure, now an arts centre.
Photos	-
No.	0109
Structure type	Church
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance:	Regional
Type of impact:	None
Significance & quality of impact	None
Description	Early 19th century Roman Catholic Church built as a chapel of ease.
Photos	-
No.	0898
Structure type	Pub
Townland	Naul
Designation	Record of Protected Structures
Data source	Co. Fingal Record of Protected Structures
Perceived Significance:	Regional
Type of impact:	None
Significance & quality of impact	None
Description	Early- to mid-18th century former coaching inn with Dutch styled curvilinear gable fronting the street, attached to lower two-storey six-bay 19th-century building with pub frontage.
Photos	-

National Inventory of Architectural Heritage

- 12.39 The National Inventory of Architectural Heritage (NIAH) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht was examined as part of the baseline study for this chapter of the EIAR on 2 July August 2024. The review established that there is one structure included in the NIAH within the study area, which is a water pump (see **Table 12-2** below). The water pump is situated 330m south of the application area and is considered to be too far distant to be directly or indirectly impacted by the proposal.

Table 12-2
Additional Structures listed in the NIAH within the Study Area

No.	11308005
Structure type	Water Pump
Townland	Naul
Designation	None
Data source	National Inventory of Architectural Heritage
Perceived Significance	Regional
Type of impact	None
Significance & quality of impact	None
Description	Cast-iron water pump, c.1900, of square profile with a curved handle. Lettering "Balrothery District Council Tonge and Taggart, Dublin"
Photos	-

Field Inspection

- 12.40 On 30th August 2019 fieldwork was carried out to identify any additional upstanding non-designated structures in the vicinity of the extraction area. This involved assessing all upstanding structures that are marked on the 1909 edition of the six-inch Ordnance Survey mapping within 100m of the application area (see **Figure 12-1**). There are two upstanding structures from the 1928 edition situated in this area that are not of heritage interest (see **Table 12-3** below).

Table 12-3
Non-designated structures indicated in 1928 edition of the six-inch Ordnance Survey mapping within 100m of the application area

No.	1
Structure type	Cottage
Townland	Naul
Designation	None
Data source	1909 edition of the six-inch Ordnance Survey mapping
Perceived Significance	None
Type of impact	None
Significance & quality of impact	None
Description	Three-bay cottage with slate roof, flat-headed windows and one chimney. Extension to rear. No heritage interest
Photos	See Plate 12-1
No.	2
Structure type	Farmhouse

Townland	Naul
Designation	None
Data source	1909 edition of the six-inch Ordnance Survey mapping
Perceived Significance	None
Type of impact	None
Significance & quality of impact	None
Description	Four-bay house with slate roof, flat-headed windows and no chimneys. Extension to east. No heritage interest
Photos	See Plate 12-2

ARCHAEOLOGY

Archaeological Assessment

Recorded Monuments

- 12.41 Examination of the Record of Monuments and Places for Co. Meath indicated that there are no Recorded Monuments located within the application area (see **Figure 12-1** and **Appendix 12-1**).
- 12.42 The closest Recorded Monument to the application area externally is ME033-034---- the site of a mound in Naul townland. This is described in the RMP as:
- ME033-034---- NAUL Mound**
Described as barrow. No visible trace.
- 12.43 The site of this monument is situated 215m south-west of the application area and is considered too far distant to be directly or indirectly impacted by the proposed development.
- 12.44 The remaining Recorded Monuments in the study area are situated further from the application area than RMP ME033-034---- and are considered too far distant to be directly or indirectly impacted by the proposed development.

Sites and Monuments Record

- 12.45 Examination of the Sites and Monuments Record (SMR) which is maintained by the Dept. of Culture, Heritage and the Gaeltacht on 2nd July 2024 indicated that there are no undesignated monuments included within the application area (see **Appendix 12-2**).
- 12.46 There are additional SMRs included within the study area outside the application area. The closest SMR to the application area externally is ME034-031---- a Ringfort in Naul Townland. This site is described in the SMR as:
- ME034-031---- Ringfort - rath Naul**
Located at the outer edge of a shelf on a SE-facing slope, at a break in the slope down to a SW-NE section of the Delvin River. The cropmark of a subcircular enclosure (int. diam. c. 30m NW-SE; c. 25m NE-SW) defined by a fosse SE-W-NW is visible only on Apple Maps which utilises a survey undertaken by Bluesky International during June 2018. An outer fosse can also be seen E-S-NW, but the defining features are obscured elsewhere by the tracks of vehicles.
- 12.47 The subsurface remains of this monument will be preserved in situ within a 40m buffer zone and will not be impacted by the proposal.

- 12.48 The next closest Recorded Monument to the application area externally is ME034-010---- the site of a castle that was incorporated into Naul Park House before the building was demolished in the 1980s. This site is described in the SMR as:

ME034-010---- NAUL Castle - unclassified

Remains of 'Whitecastle or Snowtown castle' incorporated into Naul Park House. Original castle thought to have been built by Richard Caddell in the 13th century. The Caddell family were evicted by Cromwell's General De Fyne in 1649. Naul Park House was built adjoining the E of the castle c. 1800. The entire house was demolished in the 1980s. Ground floor footings remain.

- 12.49 This site of this demolished monument is situated approximately 65m south of the access road to the application area and is considered too far distant to be directly or indirectly impacted by the proposal (**Plate 12-3**). The remaining SMR sites in the study area are considered to be too far distant to be directly or indirectly impacted by the proposed development.

Cartographic Sources

- 12.50 The seventeenth century Down Survey mapping, as well as Ordnance Survey 1st and 3rd edition six-inch maps and the first edition 25-inch maps of the area were examined. The analysis did not indicate any previously unrecorded archaeological sites in the application area or vicinity.

Place Name Evidence

- 12.51 The place names were extracted from the cartography in order to facilitate the search for structures and monuments and small finds, to help identify any unrecorded monuments or structures, to search for any published papers and documents related to the study area and to assist in the study of the historical development of the area. The English translations of the townland names of the study presented above below are based on Logainm.ie. The placenames refer entirely to topography and proprietors.

- Bodingtown: town of the Boding family;
- Flemingtown: town of the Flemming family;
- Fourknocks: cold hills;
- Herbertstown: town of the Herbert family;
- Hodgestown: town of the Hodge family;
- Hynestown: town of the Haynes family;
- Naul: the cliff;
- Tullog: a hillock; and
- Westown: the western town.

Archaeological investigations in the study area

- 12.52 There have been two geophysical surveys and two archaeological test excavation carried out within the application area (see **Figures 12-3 to 12-6** and **Appendices 12-3, 12-4, 12-5, 12-6** and **12-7**).

2008 Geophysical Survey Appendices 12-3 and 12-4

- 12.53 Geophysical survey was conducted in March 2008 adjacent to an existing quarry site in Naul townland, Ford De Fine, County Meath. This work was commissioned by ACS Ltd on behalf of Goode Concrete Ltd, and forms part of an archaeological assessment undertaken in connection with a proposed quarry extension. A total 4.4ha of gradiometer scanning was carried out in part of one field, throughout the entire area highlighted for the proposed quarry extension. On the basis of

the results from the initial scan 2.3 hectares of detailed gradiometer survey was undertaken in three areas (Areas 1 – 3).

Area 1

- 12.54 The remains of a ringfort comprising two enclosure ditches covering an area 35m x 35m in total has been recorded at the north-eastern limit of the proposed quarry extension. Traces of internal pit type responses, possible linear remains and further anomalies of interest are present at the interior of the inner enclosure, and additional responses have been identified beyond its immediate perimeter. The latter include several possible pit locations and linear features of potential interest.
- 12.55 Several weak trends are also present in Area 1. Those at the enclosure interior are expected to be of archaeological potential, whilst the two parallel trends aligned north-west to south-east and at the western limits of the ringfort are thought to represent remains of a more recent farm trackway.

Area 2

- 12.56 The results from detailed survey in Area 2 show a lesser degree of natural variation from the underlying soils and geology. The locations of several small-scale responses of potential interest are also shown, notably a discrete anomaly at the north-eastern survey edge. This anomaly is thought to be of potential archaeological interest.
- 12.57 Further weak trends and linear responses are present in Area 2, and the potential significance of some of these should not be dismissed. However, a natural or agricultural source is expected for the majority.

Area 3

- 12.58 Extensive background variation from the underlying soils and geology occurs throughout Area 3, as previously indicated by scanning. Despite this interference three separate enclosures have been recorded from west to east, and respectively these measure 52m x 30m (west); 25m x 20m (north-west), and 35m x 45m (east). The magnitude of these responses suggests significant burning activity has taken place, and this may support a multiperiod interpretation to the array of settlement responses present in the results.
- 12.59 Elsewhere in the data numerous weak ill-defined positive anomalies, linear trends, and isolated responses have been recorded. That some of these may be of archaeological potential should not be dismissed. However, in view of the large-scale natural variation across this section of Area 3 a natural and / or modern origin is suggested for the majority.
- 12.60 The 2nd phase of geophysical survey extended to a total 1.4 hectares in Area 4. Detailed gradiometry was undertaken during this 2nd phase of survey in May 2008. The results from survey in Area 4 show high levels of natural variation from the underlying soils and bedrock. This is represented by bands of positive / negative response extending through the western portion of survey. The range of this interference is such that were low-level responses of potential interest present they might be difficult to identify. Similar levels of natural variation were recorded to the west in Areas 1 & 2, during the 1st phase of geophysical investigation.
- 12.61 No definitive archaeological patterns are present in the results from Phase 2 detailed survey in Area 4. However, several small-scale positive anomalies and linear responses have been recorded to the west, and to the east of the centre of survey. Some of these may be significant, although a natural or modern ferrous source is suggested for the majority. Further examination could be undertaken over a sample of these responses to confirm their true origin.

2019 Geophysical Survey Appendix 12-5

- 12.62 Geophysical investigation of the part of the application area not previously the subject of archaeological assessment was carried out by Earthsound Geophysics in November 2019, Licence

No. 19R0225 (see full report attached). The work identified nineteen anomalies that could be of archaeological significance. The anomalies are described below.

- 12.63 **Anomaly 1** comprises of a highly magnetic linear which traverses the southern corner of the survey area. Measuring 19m in length, this anomaly is likely to have been burnt or fired. It may represent a relict field boundary or field division, once linked to the adjacent extant field boundary. To the north of anomaly 1 two curving ditches were detected, covering an area of 17m N-S by 13m E-W. These features could be archaeological or agricultural in origin.
- 12.64 **Anomalies 2 and 3** are curvilinear trends of raised magnetism, measuring 9m and 57m in length, which are likely to be associated with agricultural divisions. Anomaly 2 is located adjacent to three possible pits or tree bowls.
- 12.65 **Anomaly 4** comprises of three arcing possible ditches. Measuring 8m, 16m and 27m in length, these features could be archaeological, agricultural or geological in origin.
- 12.66 **Anomaly 5** consists of two arcing possible ditches which possibly enclose an area of 29m N-S and 31m E-W. These features could be associated with an archaeological enclosure.
- 12.67 **Anomaly 6** is an isolated area of highly magnetic responses which is located along a linear trend. The highly magnetic nature of the anomaly suggests that it likely represents burning, probably occurring during the destruction of the boundary.
- 12.68 **Anomaly 7** comprises an arcing possible ditch, 17m in length, which appears to surround eight possible pits. The possible ditch also appears to enclose an area of low magnetic enhancement, suggestive of a stony layer. These anomalies combined, cover an area 10m in diameter and could be archaeological in origin.
- 12.69 **Anomaly 8** is a double-ditched oval enclosure, measuring 24m E-W by 27m N-S internally. A possible entranceway was detected to the north, with a second possible entrance to the south. The double ditch nature of the enclosure can clearly be seen to the west; to the east the internal ditch is only visible as a weak trend due to the highly magnetic signature of the outer ditch. The presence of this highly magnetic material indicates that the enclosure has suffered burning. Possible internal activity is evidenced by a number of linear and curvilinear positive anomalies, detected within the enclosure. These could represent either habitation remains or internal divisions, a series of possible pits were also detected.
- 12.70 **Anomaly 9** corresponds to a number of features which are located on the external edge of the double ditched enclosure (anomaly 8). These comprise of an area of enhancement, possible pits and small sections of ditches or cut features. Two of the ditch features intersect with the outer enclosure ditch and may indicate the presence of a secondary 'D-shaped' annex or division, 26m N-S and 22m E-W. This annex would comprise of a linear ditch to the east and an arcing possible ditch to the west. The area of enhancement, possible pits and other possible ditches could suggest the presence of structures, smaller enclosures, boundaries or ditches which would have once surrounded the enclosure.
- 12.71 **Anomaly 10** consists of a series of ditched or cut features and pits, which appear to form a possible sub-rectangular division to the south of anomaly 8. Measuring 35m E-W and 20m N-S, this anomaly could be archaeological or agricultural in origin.
- 12.72 **Anomaly 11** comprises a series of highly magnetic features, covering an area of 23m N-S and 28m E-W, which are located adjacent to the modern field division. The highly magnetic nature of the features indicates that they contain burnt or fired material and could be archaeological or agricultural in nature.

- 12.73 **Anomaly 12** consists of a circular ditch, 14m in diameter which is interspersed by five possible pits. These pits could be contained within the ditch or represent different deposits. It is likely that the anomaly represents an enclosure ditch, with a possible entranceway to the southwest.
- 12.74 **Anomaly 13** is a linear feature of negative magnetism. Measuring 136m in length, this wall or stony bank intersects with a relict field boundary visible on historic mapping.
- 12.75 **Anomaly 14** corresponds to a series of possible pits and possible ditches. Sixteen possible pits are contained within or adjacent to two arcing ditches. It is possible that these features represent an archaeological enclosure 16m in width.
- 12.76 To the south two sets of arcing double ditches were detected, 10m (West) and 19m (East) in length. It is unclear if these features are archaeological in origin, associated with the above possible enclosure or are agricultural in nature.
- 12.77 **Anomaly 15** comprises a series of arcing possible ditches and possible pits which are located in the northern portion of the geological / alluvial activity. It is possible that these ditches and pits are archaeological in nature or they could be associated with the geological / alluvial activity.
- 12.78 **Anomaly 16** consists of a semi-circular ditch, 29m in diameter. This enclosure ditch is located adjacent to an area of magnetic enhancement and two possible pits which are likely to be archaeological in origin. Contained within the enclosure are two arcing cut features and four possible pits which are likely to indicate archaeological activity.
- 12.79 **Anomaly 17** represents a series of small, often interconnecting trends which were located on the northern edge of the survey area. These features have a very weak magnetic signature and therefore could be associated with geological, alluvial, agricultural or possibly archaeological activity.
- 12.80 **Anomaly 18** is located in the northwest corner of the survey area and comprises a rectilinear cut feature, 13.5m SE-NW by 10m NW-SE. Two possible entranceways are located to the north and south, while a number of internal divisions and two possible pits were also detected. This could represent the footprint of a structure or division.
- 12.81 **Anomaly 19** comprises two arcing probable ditches which are located on the western edge of the survey area. Encircling an area 73m in diameter, these ditches likely represent an archaeological enclosure, due to their strong magnetic signature. However, given that they are contained within an area of geological or alluvial activity the possibility that they relate to this activity cannot be ruled out.

2008 Archaeological testing Appendix 12-5

- 12.82 An extension to a quarry at Ford de Fine was the subject of a test excavation carried out in September 2008 (08E0242). The proposed extension was the subject of a geophysical survey carried out by Target Archaeological Geophysics (Nicholls 2008a; 2008b). Gradiometer scanning followed by targeted detailed gradiometer survey suggested a number of potential archaeological features existed below the surface, including a bivalate circular enclosure (c.35m in diameter) in the northeast of Field 1 and additional enclosures in the south of that field (Nicholls 2008a). There were no clear indications of archaeological remains in Field 2 (Nicholls 2008b). There was extensive natural variation across much of the proposed site and a number of anomalies may be the result of site investigation work at this location in the past. The site boundary of the proposed development was amended to avoid substantial impact on these archaeological remains.
- 12.83 A total of 26 test-trenches were excavated at this location. Previous geophysical survey had highlighted a number of areas of archaeological potential and the quarry layout was altered to

preserve some features in situ. A number of features were identified during the assessment. Three potential archaeological features were identified and are below.

- **F1** A shallow linear deposit of dark grey silty clay with no obvious inclusions within the recorded section. 0.60m wide x 0.03m deep. It corresponded to an east-west orientated anomaly on the geophysical survey.
- **F2** A linear deposit of dark brown silty clay with charcoal inclusions 0.35m wide x 0.15m deep. It extended across the trench and continued in both directions. It was also identified by the geophysical survey where it appeared to be an element of a larger square shaped enclosure.
- **F3** A curving ditch feature identified on the geophysical survey. 1.8m wide x 1.0m deep. Four deposits were recorded, the uppermost having charcoal inclusions and fragments of animal bone. This feature may be a tree-lined feature marked on the OS 3rd edition map.

2020 Archaeological Testing Appendix 12-7

- 12.84 Following the completion of the Geophysical investigation report Kilsaran Concrete commissioned Tobar Archaeological Services to carry out archaeological test excavation of all 19 identified geophysical anomalies area (see **Figure 12-6** and **Appendix 12-7**). The archaeological testing was carried out by Annette Quinn in March 2020 under licence No. 20E0053 from the National Monuments Service (NMS) of the Department of Culture, Heritage and the Gaeltacht (DCHG) (see full report attached). Test trench locations were agreed in advance with the Department of Culture, Heritage and the Gaeltacht. A total of thirty trenches were mechanically excavated across the site to investigate the anomalies under archaeological supervision. Only five anomalies Nos. 8, 9, 13, 15 and 19 were found to be of any significance. All the features were found to be buried beneath c. 0.37 -0.45m of ploughsoil.
- 12.85 **Anomaly 8** appears to be the remains of a levelled early medieval ringfort that was identified in test trenches 18 and 19 beneath 0.37-0.4m of ploughsoil. It consists of an oval area approximately 24 x 27m enclosed by an internal and external ditch with a possible entrance gap at north. The internal ditch measured 1.8m - 2m wide and 0.33m -0.74 deep and the external ditch measured 2.1 - 3m in diameter. The morphology of anomaly 8 suggests that it is the remains of a levelled early medieval ringfort, however no dating or any other diagnostic archaeological information was identified during the test excavation to confirm this. Note this monument was added to the Sites and Monuments Record by the Department of Culture, Heritage and the Gaeltacht as SMR ME034-031 Ringfort – rath on the 6th of February 2020, four months after the submission of the planning application by Kilsaran Concrete on the 24th of September 2019. **Anomaly 9** is a linear ditch investigated in trench 17 that measures 1.6m wide that extends south from the ringfort (SMR ME034-031).
- 12.86 **Anomaly 13** was investigated in trenches 10 and 11 and is a linear ditch 136m long that measures 1.9m - 2.4m wide and 0.35m deep. This is probably the remains of a relict field division. **Anomaly 15** was investigated in trench 5 and was found to consist of a single pit 0.4m in diameter. A linear feature in the trench appears to be a plough furrow. **Anomaly 19** was investigated in trench 6 and consisted of two linear and one L-shaped features. The L-shaped feature was 0.7m wide and 0.15m deep with a single stake-hole in its base and contained 4 sherds of 12-13th century cooking ware pottery. The first linear feature measured 0.55m wide and 0.3m deep, and the second linear feature measured 1.35m wide and 0.17m deep.

Other investigations in the study area

- 12.87 There have been several investigations carried in the study area outside the application area (see below) four of which uncovered prehistoric and medieval remains.

Westown The Old Mill Licence number: 04E1261

- 12.88 Development requiring the extension, renovation and conversion of an 18th-century flour mill (protected structure), with associated stables and stores, is to be carried out at the Old Mill, Naul. The site lies partially within the zone of archaeological potential around Naul and may have been the location of an earlier bridge and mill, such as those depicted on the Down Survey map of 1656. The current mill was constructed between 1718 and 1722, ceasing operations sometime between 1869 and 1906, and was roofless by 1934 when Oliver St John Gogarty described the building in a poem entitled 'The Mill at Naul'.
- 12.89 Much of the site has been disturbed by previous construction, landscaping or dumping, particularly the western portion, where only a small area was available for testing due to significant areas of dumped material or made-up ground. This portion of the site will become the car parking area, which will necessitate further build-up of the existing ground level. The only feature of note in this area, according to OS maps, was the mill-race, which was at an elevated position to the rear of the main mill building and will not be impacted upon by development.
- 12.90 Eight test-trenches were mechanically excavated within the site. Stratigraphy in all cases was topsoil/overburden over natural subsoil. No archaeological features were present in any of the trenches and no finds were noted in excavated topsoil deposits. A neatly constructed stone drain was noted in one trench, extending from the main mill building towards the stores/tailrace. This drain was uncovered for a distance of 5m. It was 0.8m wide, with a 0.4m-wide trough. It was constructed of limestone blocks (two to four courses high), with limestone cobbles forming the base. The drain was uncapped and contained no datable material. It had filled with topsoil and building debris and contained a thin deposit of grit at its base.

Westown Late Medieval Vault 15E0045

- 12.91 Monitoring took place of conservation and restoration works on a 19th-century house RMP DU004-0430001 which was built on a late medieval vault.

Naul No archaeology found Licence number: 17E0061

- 12.92 Planning permission was granted for the construction of 2 single storey dwellings, a garage, wastewater treatment systems, upgrade of an existing field gate to accommodate a new shared vehicular entrance and all associated site works on a site measuring 1.27ha. Monitoring was confined to the excavation of the western part of the access road and topsoil stripping for one of the permitted houses. No archaeological features or artefacts were revealed during monitoring.

Fourknocks No archaeology found Licence number: 16E0078

- 12.93 An assessment was undertaken on the site of a proposed single dwelling house, situated 200m south-east of Fourknocks passage tomb. The assessment took the form of geophysical survey (16R0024; J Leigh) followed by test trenching. Excavated areas and upcast spoil from the test excavations were metal detected under licence 16R0033. No archaeological material was recorded.

Fourknocks Early Bronze Age habitation/burial site Licence number: -

- 12.94 This excavation took place in the Autumn on the Fourknocks ridge to the north of Naul village. The site lies just below the crest of the ridge above the 500ft contour with extensive views on all sides. It was done prior to the construction of a Radio Link Repeater station by Posts and Telegraphs who funded the excavation. It is worth noting that the excavation was confined to an area equivalent to the size of the buildings which were to be constructed hut subsequently the area was extensively landscaped, an exercise which undoubtedly destroyed archaeological deposits.
- 12.95 There were no visible features on the site prior to investigation but a phosphate survey recorded clusters of strong and good levels of phosphate in the soil and trial trenching revealed a number of

pits, charcoal spreads and stone settings together with cremated bone and a range of struck and worked flints.

- 12.96 The main investigation produced evidence for occupation on the ridge in the form of a series of post-holes which appeared to define a compacted 'floor' area, pits containing undecorated coarse flat-bottomed pottery, small quantities of cremated bone and substantial amounts of charcoal. Radiocarbon dates, kindly supplied by Jan Lanting of Groningen, were as follows; 41100±40 BP. 4250±40 BP 4305±45 BP. A fourth date for a spread of charcoal on the lower end of the site was 2275±30 BP. Finds included part of an archer's wrist guard, a tanged flint arrow-head and a large number of worked flints. The site appears to represent occupation in the Early Bronze Age.



Figure 12-3 Greyscale plan from Target Archaeological Geophysics Phase 2 Report showing total extent of geophysical survey carried out in 2008 and the anomalies.

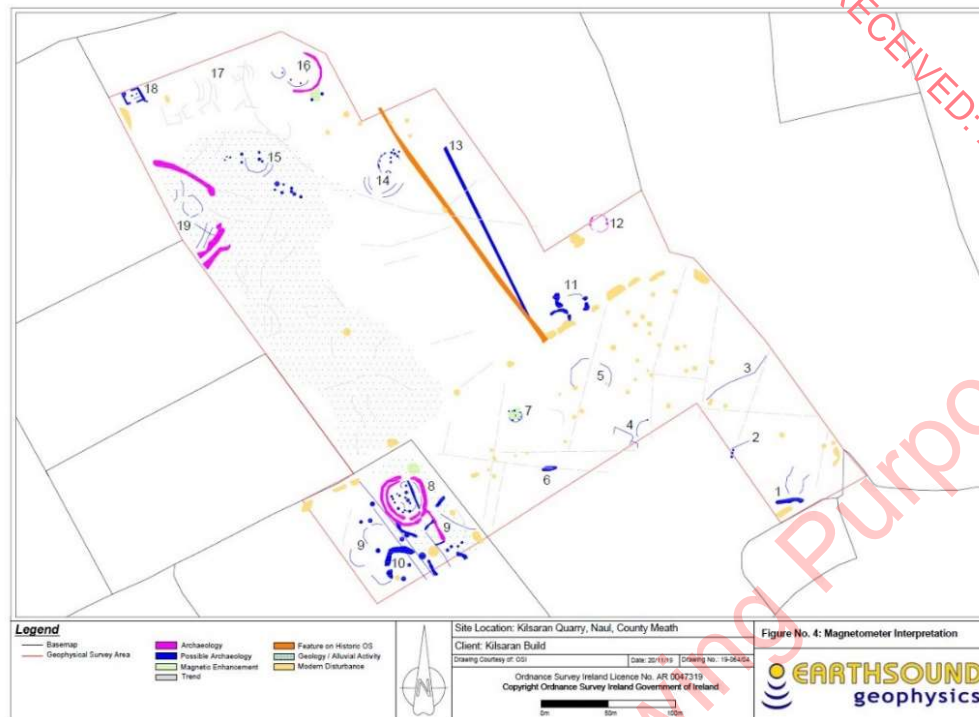


Figure 12-4 Geophysics Interpretation showing total extent of geophysical survey carried out in 2019 and the anomalies.

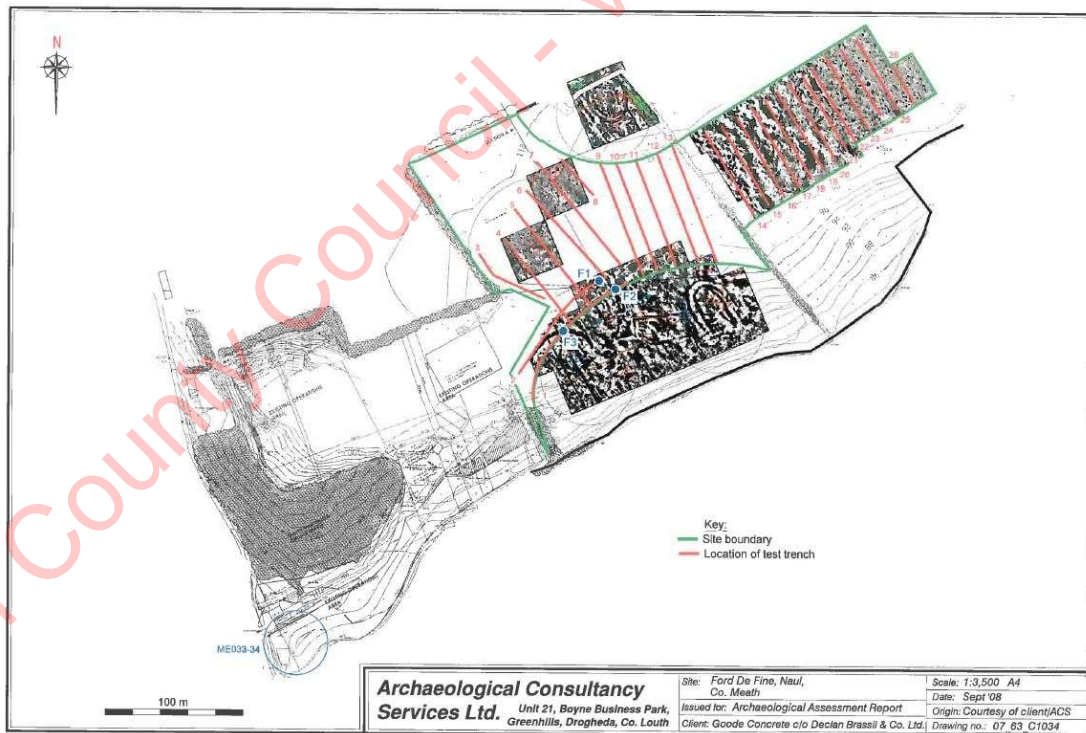


Figure 12-5 Plan from the ACS archaeological testing report showing total extent of test excavation carried out in 2008.

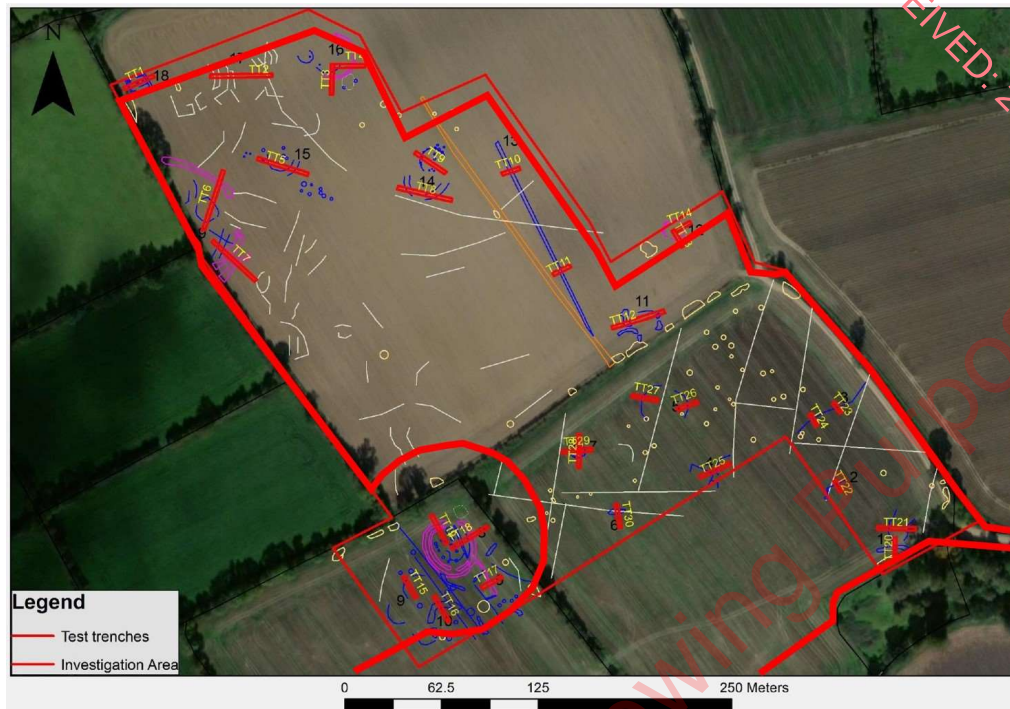


Figure 12-6 Plan from the Tober Archaeology archaeological testing report showing total extent of test excavation carried out in 2020. The thick red line is the current proposed application area.

County Development Plan

- 12.97 No sites of archaeological importance, National Monuments, or protected structures listed in the Meath Development Plan 2021-27 are located within the proposed development area.

Aerial Photographs

- 12.98 Examination of the Ordnance Survey 1995, 2000 and 2005 aerial imagery as well as Google earth imagery from 2006, 2009, 2013, 2016, 2017, 2018, 2019, 2020, 2021 and 2020 and Bing imagery from 2016 did not indicate any additional cultural heritage sites in the application area.

National Museum

- 12.99 Examination of the find's registers of the National Museum of Ireland indicated that there have been no finds from the application area reported to the National Museum of Ireland. There have been several finds reported from the study area (see below).

Naul, Co. Dublin Trunnion Chisel NM 1883:12

A bronze Age chisel was found in a garden in 1883.

Naul, Co. Meath flints NM P I1950:32

A flint flake was found in topsoil in 1950.

Naul, Co. Meath flints NMI1972:345-53

Nine flint tools were found in the vicinity of a destroyed cairn ME033-033---- in 1972.

Other Sources

- 12.100 Examination of archaeological corpus works on prehistoric artefacts (Harbison 1969, Eogan 1983, 2000, Kavanagh 1991, Simpson 1990), and pottery (O’Riordáin and Waddell 1993) and Iron Age material (Raftery 1984) did not reveal any additional material in the study area.

Field inspection

- 12.101 A field inspection was carried out on 30th August 2019 to identify any previously unknown archaeological or cultural heritage sites. See **Figure 12-7** for the numbered fieldwork areas.

Area 1

- 12.102 This is the south-west part of a large south-sloping arable field enclosed by hedges with mature trees and wire (see **Plate 12-4**). There was no visible indication of any cultural heritage material at ground level.

Area 2

- 12.103 This is a large steeply southeast-sloping arable field next to the river Delvin enclosed by hedges with mature trees (see **Plate 12-5**). There was no visible surface indication of the possible ringfort identified through geophysics or features 1, 2 and 3 identified through geophysics and archaeological testing.

Area 3

- 12.104 This is a large south-sloping arable field next to the river Delvin enclosed by hedges with mature trees and wire. (see **Plate 12-6**).

Area 4

- 12.105 This is the site access/haul road which is an existing farm track (**Plate 12-7**). The eastern section leading from the entrance is paved (**Plate 12-8**).



Figure 12-7 Aerial image of the application area, outlined in red, from Bing Maps showing the numbered fieldwork areas.

ASSESSMENT OF POTENTIAL IMPACTS

Direct Impacts

- 12.106 Six items of archaeological heritage have been identified through previous investigations in the application area (see below and **Figures 12-4** and **12-5**). Note that anomaly 8 the Ringfort SMR ME034-031---- a and Anomaly 9, a linear ditch that extends south from the ringfort are being preserved in situ with a 40m buffer zone.

Area 1

1. Anomaly 13 was investigated in trenches 10 and 11 and is a linear ditch 136m long that measures 1.9m 2.4m wide and 0.35m deep. This is probably the remains of a relict field division.
2. Anomaly 15 was investigated in trench 5 and was found to consist of a single pit 0.4m in diameter. A linear feature in the trench appears to be a plough furrow.
3. Anomaly 19 was investigated in trench 6 and consisted of two linear and one L-shaped features. The L-shaped feature was 0.7m wide and 0.15m deep with a single stake-hole in its base and contained 4 sherds of 12-13th century cooking ware pottery. The first linear feature measured 0.55m wide and 0.3m deep, and the second linear feature measured 1.35m wide and 0.17m deep.

Area 2

4. F1 is a linear east-west orientated anomaly identified through geophysics and confirmed through archaeological testing as a linear deposit of dark grey silty clay with charcoal 0.6m wide and 0.03m deep situated in Area 2.
5. F2 is a square-shaped anomaly identified through geophysics and confirmed through archaeological testing as a linear deposit of dark brown silty clay with charcoal 0.35m wide and 0.15m deep situated in Area 2.
6. F3 a curving anomaly identified through geophysics and confirmed through archaeological testing as ditch containing charcoal and animal bone 1.8m wide and 1m deep situated in Area 2.

Indirect Impacts

- 12.107 There will be no indirect impacts on any known items of archaeology, cultural heritage or buildings of heritage interest in the application area or the vicinity.

Interactions with Other Impacts

- 12.108 No interactions with other impacts have been identified.

Do Nothing Impacts

- 12.109 If the proposed development were not to proceed there would be no negative impact on the cultural heritage.

Worst Case Impact

- 12.110 The application site has been thoroughly assessed with multiple campaigns of geophysics and archaeological testing and therefore no worst-case scenario has been identified.

RECOMMENDATIONS / PROPOSED MITIGATION MEASURES

Direct Impacts

- 12.111 Anomalies 13, 15 and 19 and Features F1, F2 and F3 should be preserved by record in advance of development under licence from the National Monuments Service.

Indirect Impacts

- 12.112 No indirect impacts warranting specific mitigation were identified during the cultural heritage assessment.

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PLATES

Plate 12-1

Structure 1 looking east

Plate 12-2

Structure 2 looking north-east

Plate 12-3

View of the site of the demolished castle ME034-010

Plate 12-4

Panoramic view of Area 1 looking north-east

Plate 12-5

Panoramic view of Area 2 looking north

Plate 12-6

Panoramic view of Area 3 looking south-east

Plate 12-7

View of Area 4 looking east

Plate 12-8

View of Area 4 looking east to the entrance

PLATES



Plate 12-1

Structure 1 looking east.



Plate 12-2

Structure 2 looking north-east.



Plate 12-3

View of the site of the demolished castle ME034-010---- behind the tree.



Plate 12-4

Panoramic view of Area 1 looking north-east.



Plate 12-5

Panoramic view of Area 2 looking north.



Plate 12-6

Panoramic view of Area 3 looking south-east.



Plate 12-7

View of Area 4 looking east.



Plate 12-8

View of Area 4 looking east to the entrance.

APPENDICES

Appendix 12-1

Sites in the Record of Monuments and Places

Appendix 12-2

Sites in the Sites and Monuments Record

Appendix 12-3

2008 Phase 1 Geophysical Survey

Appendix 12-4

2008 Phase 2 Geophysical Survey

Appendix 12-5

2019 Geophysical Survey

Appendix 12-6

2008 Test Excavation

Appendix 12-7

2020 Test Excavation

Appendix 12-1

Sites in the Record of Monuments and Places

ME033-031---- FOURKNOCKS Barrow - unclassified

Oval mound (dims. 15m E-W, 12m N-S, H 2m) of earth and stones covering and containing pit burials (ME033-031001-).

ME033-031001- FOURKNOCKS Pit-burial

Pit with cremation beneath barrow (ME033-031----). A Cordoned Urn with the cremation of a child and a Vase Food Vessel found in body of mound.

ME033-032---- FOURKNOCKS Habitation site

Excavation undertaken in 1982 recovered evidence for habitation in the form of pits, an arc of small post-holes and a charcoal spread. Some of the pits contained Grooved Ware, lithics, charcoal and cremated bone, while others had varying amounts of flint debitage. The plough-soil yielded an archer's bracer and a range of struck and worked flint and chert including a tanged arrowhead. Radiocarbon dates for the activity range between 4305 ± 45 BP and 2275 ± 30 BP.

ME033-033---- NAUL Mound

Oval mound (dims. 15m N-S, 12m E-W, H 2m) described as barrow. Since destroyed.

ME033-034---- NAUL Mound

Described as barrow. No visible trace.

DU004-010002- NAUL Cross

The cross in the interior of the church in the Naul is monumental in nature and probably commemorative in function. It most likely dates from the 19th century.

DU004-004---- WESTOWN Enclosure

Located on a ridge under a crop of corn SE of the Delvin river. An aerial photograph taken in 1972 (FSI4.536/7) shows cropmarks of an enclosure (diam. c. 40m) and possible field systems radiating from the N quadrant. Not visible at ground level.

DU004-005---- WESTOWN Barrow - unclassified

This barrow is situated on a hilltop under pasture beside the Naul to Fourknocks road and near the Ford of Fyne. A circular dome-shaped mound (diam. 15m; H 2.5m) which rests on a circular earthen platform (diam. 30m; H 2m). Slopes down steeply to north and south to circular tree-lined enclosure. marked on the OS 25" as a 'moat'. Directly to the north on the other side of the Delvin is the Fourknocks ridge. When the grass is down large stones are visible.

DU004-042---- WESTOWN House - 20th century

Shown on Rocque's map of 1760. Attached to the N side of a public house in Naul village. This is a two-storey stone-building with a gabled and slated roof. The latter was reconstructed, and gables raised to give a Dutch Billy effect in the 1940s. The chimney projects mid-way along the N side of building. Formerly served as an inn. This building probably dates from the post-1700 period.

DU004-043001- WESTOWN Castle - tower house

Westown House is an 18th-century mansion which incorporates portion of an earlier tower house and the ground floor of a possible hall. The later may be the building referred to in the Civil survey (1654-6) as a stone house, which was partly slated (Simington 1945, 33). In 1993 the mansion and rear courtyard

containing finely built out buildings were still in relatively good condition. The rear of the mansion and the outbuildings have since been demolished.

DU004-043002- WESTOWN Building

Westown House is an 18th-century mansion which incorporates the ground floor of a possible hall. The latter may be the building referred to in the Civil survey (1654-6) as a stone house, which was partly slated (Simington 1945, 33). In 1993 the mansion and rear courtyard containing finely built outbuildings were still in relatively good condition. The rear of the mansion and the outbuildings have since been demolished. Accessed by long grass tree-lined avenue leading westwards from Naul village. House facing north, three bay over basement. The main ground floor chamber has a broad, round arch opening in the south-east corner where an entrance down into a passageway is located, the roof of which contains brickwork and is secured with wooden joists. Rumoured to be some sort of tunnel but possibly leads to cellar/icehouse-externally to the north-west of the gable is an outer shute which possibly links the two. Area to rear of house has also been cleared-some architectural fragments stockpiled.

DU004-045001- WESTOWN Water mill - unclassified

The Civil survey (1654-6) mentions a cornmill at Westown (Simington 1945, 32). This was replaced by a flour mill erected by Arthur Mervyn between 1718 and 1722. The Old Mill ceased operations sometime between 1869 and 1906 and was roofless by 1934, when Oliver St. John Gogarty pondered the 'ruined roofless mill' in a poem he entitled The Mill at Naul. An archaeological assessment was undertaken (Licence No. 04E1261) prior to renovation. No archaeological finds or features were identified.

DU004-045002- NAUL Castle - tower house

Located on the E edge of a ravine on the S bank of the River Delvin. The remains comprise the N end of an oblong three storey tower house. The southern end of the building, containing the staircase, collapsed in the 1960s. Built of coursed limestone masonry. There are remains of a double barrel-vault over ground floor. The second and third floors were originally of timber. There is a featureless doorway in W wall and a single-light ope with a splayed embrasure in the E wall on ground floor. Putlog holes are visible in the S and E walls. Traces of possible bawn wall project from the NE corner. Described as an 'old castle' owned by Christopher Cruise in the Civil survey (1654-6) (Simington 1945, 30).

The remains are completely covered in ivy which has resulted in structural damage. Geophysical survey (Licence No. 10R0077) was undertaken in the field where the castle is situated to inform the Naul Local Area Plan. A curvilinear response perhaps representing an enclosing ditch around the tower house was identified. This response corresponds to a possible ditch and bank identified as a low earthwork. It encompasses an area of high responses west of the tower house.

DU004-045003- NAUL Ritual site - holy well

A spring well at the bottom of a ravine SE of the River Delvin. Approached from an overgrown pathway. No longer venerated. The well is a chalybeate spring. Circa 2000, the owner capped the spring in a concrete structure.

DU004-045004- NAUL Church

Located in an elevated position in graveyard N of road in Naul Village. This is a plain rectangular building (int. dims. L 9.70m, Wth.5.10m) orientated ENE-WSW. The N wall is missing. Allegedly built as a chapel in 1710 according to wall plaque but the building retains earlier features indicating the re-use of a medieval building. The Civil survey (1654-6) described the medieval parish church in the Naul as ruinous with only 'the walles of ye parish church', standing (Simington 1945, 30). The interior is lit by a double-light ogee-headed window with transom in E wall and a plain double-light window in S wall. Chapel entered through pointed-arched W doorway with cable-moulding and pocked dressing. Proportions of the extant remains are off. Locally held that the northern wall was never built.

DU004-045005- NAUL Graveyard

On the S bank of the river Delvin in the village of Naul. It is a walled graveyard that is square in plan (Dims 34m). There are the upstanding remains of a church in the interior (DU004-045-001). It has been extended in the NE. The interior is raised above the surrounding ground level and falls away to the N. The oldest grave slabs are in the W and S which are 18th-19th century date. Graveyard surveyed in 1992.

DU004-045006- NAUL Date Stone

No information in file.

DU004-045007- WESTOWN dwelling

No information in file.

DU004-045008- WESTOWN Bridge

The Down Survey (1655-6) map shows 'Naul Bridge' on the main route to the N from Swords through Rathbeale via Roganstown, the Naul and Dardistown to Drogheda. At present the river Delvin is crossed by a double-arched bridge which occupies the site of the earlier bridge. This has round segmental arches and dressing on the stonework.

DU004-045009- NAUL Enclosure

Geophysical survey (Licence no. 10R0077) was undertaken in the vicinity of tower house (DU004-045002). A possible curving enclosure ditch was identified which corresponds to a possible ditch and bank identified as low earthworks. The ditch may represent an enclosing feature associated with the adjacent tower-house. A cluster of within the enclosing ditch may also indicate archaeological activity although no clear archaeological patterns are visible.

Appendix 12-2

Sites in the Sites and Monuments Record

ME034-010---- NAUL Castle - unclassified

Remains of 'Whitecastle or Snowtown castle' incorporated into Naul Park House. Original castle thought to have been built by Richard Caddell in the 13th century. The Caddell family were evicted by Cromwell's General De Fyne in 1649. Naul Park House was built adjoining the E of the castle c. 1800. The entire house was demolished in the 1980s. Ground floor footings remain.

ME034-011---- NAUL Enclosure

Remains of enclosure identified on Longfield map (1825). In field known locally as the 'ringfield'.

ME034-012---- NAUL Megalithic tomb – unclassified

Earthwork shown on Duncan's map (1821). Local tradition of mound with passage. Destroyed by a p.c. 1980's.

ME034-023---- HERBERTSTOWN Ring-ditch

A circular ring-ditch visible as a crop mark on an aerial photograph (SMR file; pers. comm. T. Condit).

ME034-026---- TULLOG Ring-ditch

Situated on rise on a shelf towards the bottom of an E and SE-facing slope. A circular ring-ditch is visible as a crop mark on an aerial photograph. An enclosure (ME034-027----) is visible in the same field c. 200m to the north-east (SMR file; pers. comm. Dr Steve Davis). It is also visible (diam. c. 8m) defined by a single fosse feature on Google earth (24/06/2018).

ME034-031---- Ringfort - rath Naul

Located at the outer edge of a shelf on a SE-facing slope, at a break in the slope down to a SW-NE section of the Delvin River. The cropmark of a subcircular enclosure (int. diam. c. 30m NW-SE; c. 25m NE-SW) defined by a fosse SE-W-NW is visible only on Apple Maps which utilises a survey undertaken by Bluesky International during June 2018. An outer fosse can also be seen E-S-NW, but the defining features are obscured elsewhere by the tracks of vehicles. It was first reported by Ian Lennon.

DU004-061---- NAUL Enclosure

A circular enclosure visible as a crop mark on an aerial photograph (SMR file; pers. comm. T. Condit). On high ground of a long east-west ridge, that slopes down northwards towards the road and river valley. Formerly used as a dump. No visible remains.

Appendix 12-3

2008 Phase 1 Geophysical Survey

**Geophysical Survey Report
Ferd de Fine, Naul County
Meath**

Licence Ref. 08R0101

**On Behalf of
Goode Concrete Ltd**

April 2008

List Of Figures

Fig. 1	Survey Location: Gradiometer Scanning & Detailed Survey Areas 1 - 3	1:3000
Fig. 2	Greyscale: Detailed Areas 1 - 3	1:2000
Fig. 3	Interpretation: Detailed Areas 1 – 3	1:2000

Digital Archive

A complete digital archive for this geophysical survey is provided on the attached CD. The archive includes all the report text, PDF documentation, AutoCAD drawings, and raw XY trace / greyscale displays relating to this work. Further data relating to this project may be made available upon request.

Executive Summary

Introduction

Geophysical survey was conducted adjacent to an existing quarry site in Naul townland, Ford De Fine, County Meath. This work was commissioned by ACS Ltd on behalf of Goode Concrete Ltd, and forms part of an archaeological assessment being undertaken in connection with a proposed quarry extension.

Survey Objectives

The aims of the geophysical survey were to define the location, form and extent of buried remains, where present within the area of archaeological potential for mound site ME033:034, which lies at the south-eastern edge of the study area; and to assess the archaeological potential of a proposed quarry extension to the north-east.

Site Location

The study area lies at NGR 312228 260975, c.1 kilometre to the south-west of Naul, in the townland of Naul, Co. Meath. The northern and eastern site limits are defined by agricultural land, whilst the southern and western boundaries to survey are formed by the Delvin River and a minor road to Greenanstown.

Two areas at the site were designated for geophysical survey, including the area of archaeological potential for mound site ME033:034, situated at the south-western edge of the quarry; and the area of proposed quarry extension extending to the east. Survey at or in the immediate vicinity of mound site ME033:034 was prevented due to previous quarry workings.

Survey was confined the proposed quarry extension. A total 4.4 hectares of gradiometer scanning and 2.3 hectares of sample detailed gradiometry were undertaken within this section of the study area.

Soils, Geology & Topography

The survey area lies on a steep south facing slope, and within a predominantly arable landscape. Soils of the locality include both wet and dry mineral and organic varieties, mainly

grey brown podzolics and gleys. The underlying geology is till of Irish Sea origin with limestone and shale (Associations 38 & 40: National Soil Survey Of Ireland, 1980).

Archaeological Background

The area of archaeological potential for mound site ME033:034 lies at the south-western perimeter of the quarry. Details relating to RMP site ME033:034 and further monuments within a 2 kilometre radius are provided in Table1 below:

Table 1. Known Archaeological Monuments Within c.2 km Radius

RMP No.	MAP	NGR	Townland	Classification
ME033:028 - 032	033- /12/2-3	31141 26224	Fourknocks	Passage tombs; cemetery; mound; barrows; & excavated feature - pits
ME033:033	033-12/3	31204 26181	Naul	Mound
ME033:034	033-/16/3	31199 26076	Naul	Mound

Summary Of Results

Gradiometer scanning and targeted recorded survey within the proposed quarry extension show the locations of four enclosures to the north-east and within the southern section of investigation (Areas 1 & 2). The responses are generally magnetically strong, well-defined and demonstrate an extensive pattern of settlement, which extends across a significant portion of the study area. High levels of natural variation across parts of the site has made interpretation of many of the geophysical anomalies difficult, most notably to the south in Area 3. It is expected that the underlying archaeology in the southern portion of survey may have been affected by agricultural processes and possible soil creep.

*** This summary should be read in conjunction with the results from detailed survey.**

1 Areas of Investigation (Figure 1)

- 1.1 A total 4.4ha of gradiometer scanning was carried out in part of one field, throughout the entire area highlighted for the proposed quarry extension. On the basis of the results from the initial scan 2.3 hectares of detailed gradiometer survey was undertaken in three areas (Areas 1 – 3).
- 1.2 The survey grids were set out and tied-in to the ordnance survey using differential GPS, tapes, ranging rods and an optical square. Tie-in points remain in situ to facilitate grid relocation where necessary.
- 1.3 Fieldwork was undertaken between the 15th and 16th March 2008 under licence from the Department Of Environment, Heritage & Local Government (Licence No. 08R0101).
- 1.4 Figure 1 presents the location of mound site ME033:034, the area of the proposed quarry extension, the results from scanning, and the locations of detailed gradiometer survey in Areas 1 - 3 (scale 1:3000).

2 Data Display, Interpretation & Digital Archive

- 2.1 The results from detailed survey in Areas 1 – 3 are presented as greyscale images in Figure 2 at a scale of 1:2000. Interpretation of the data is provided at the same scale in Figure 3, and derives from in depth analysis of raw greyscale, interpolated greyscale, and XY trace displays.
- 2.2 The archive attached to this report contains both the .TIF XY trace and .BMP greyscale displays for the recorded data, the AutoCAD .DWG files for Figures 1 – 3, and the individual .DWG interpretations made from analysis of the results.

3 Ground Conditions & General Considerations

- 3.1 Ground conditions were generally suitable throughout, the investigation area being under short and accessible crop at the time of fieldwork. No significant obstructions were present to impede the progress of survey within the proposed quarry extension area.
- 3.2 Isolated ferrous responses occur throughout the detailed survey data from Areas 1 - 3, and these anomalies are usually caused by the presence of modern debris within the topsoil. These are not referred to in the text unless considered relevant.

- 3.3 Instrument specifications and survey methodology are discussed in the *Summary Technical Information* document attached to this report.

4 Gradiometer Scanning (Figure 1)

4.1 General

- 4.1.1 A total 4.4ha of land extending throughout the proposed quarry extension was subjected to a preliminary gradiometer scan. The objective of the scan was to identify the locations of any significant responses of potential archaeological origin, if present within the investigation area, and to inform on the locations for detailed survey.
- 4.1.2 The scan was undertaken employing two gradiometers operating in tandem, in order to observe any significant fluctuations in instrument response whilst traversing each section of the proposed extension along 10m traverses. Where significant responses occurred, these were examined in closer detail, their locations referenced to the national grid by DGPS, and the anomalies later targeted for further examination by detailed recorded survey.

4.2 Results

- 4.2.1 A varied level of background response limited to $\pm 1.5\text{nT}$ was noted throughout the north-western corner of the proposed extension, with more substantial fluctuations occurring to the north-east, through the approximate centre of survey, and to the south. These substantial fluctuations were largely thought to represent variations in soil morphology and bedrock, and to some extent complicated the scanning procedure.
- 4.2.2 Areas of significant response were noted to the north-east, west and south within the proposed extension. Those to the north-east and south varied from 5 – 12 nT in magnitude, and were generally concentrated in form. Clear linear formations and groups of response were observed in these areas, along with extensive natural interference from the underlying soils and bedrock. Several scanned anomalies noted to the west were found to be isolated.
- 4.2.3 Sample detailed gradiometry was undertaken in three areas, Areas 1 – 3, to confirm the observations made during the scan.

5 Detailed Survey, Areas 1 – 3 (*Figures 2 & 3*)

5.1 Area 1

- 5.1.1 The remains of a ringfort comprising two enclosure ditches covering an area 35m x 35m in total has been recorded at the north-eastern limit of the proposed quarry extension. Traces of internal pit type responses, possible linear remains and further anomalies of interest are present at the interior of the inner enclosure, and additional responses have been identified beyond its immediate perimeter. The latter include several possible pit locations and linear features of potential interest.
- 5.1.2 High levels of background interference from the underlying soils and bedrock occurs throughout Area 1, and this confirms the observations relating to natural interference noted during the scan.
- 5.1.3 Several weak trends are also present in Area 1. Those at the enclosure interior are expected to be of archaeological potential, whilst the two parallel trends aligned north-west to south-east and at the western limits of the ringfort are thought to represent remains of a more recent farm trackway.
- 5.1.4 A concentration of ferrous disturbance at the north-western corner of survey derives from interference from a neighbouring boundary.

5.2 Area 2

- 5.2.1 The results from detailed survey in Area 2 show a lesser degree of natural variation from the underlying soils and geology. The locations of several small-scale responses of potential interest are also shown, notably a discrete anomaly at the north-eastern survey edge. This anomaly is thought to be of potential archaeological interest.
- 5.2.2 Further weak trends and linear responses are present in Area 2, and the potential significance of some of these should not be dismissed. However, a natural or agricultural source is expected for the majority.

5.3 Area 3

- 5.3.1 Extensive background variation from the underlying soils and geology occurs throughout Area 3, as previously indicated by scanning. Despite this interference three separate enclosures have been recorded from west to east, and respectively these measure 52m x 30m (west); 25m x 20m (north-west), and 35m x 45m (east). The magnitude of these responses

suggests significant burning activity has taken place, and this may support a multiperiod interpretation to the array of settlement responses present in the results.

- 5.3.2 The distorted appearance of the responses from Area 3 does suggest that significant erosion to underlying remains and soil creep is likely to have occurred. Clear archaeological features and natural positive / negative banding converge to form broad, irregular shaped and magnetically strong zones of magnetic disturbance. Unfortunately a more precise interpretation for these anomalies cannot be determined, and further clarification of their archaeological significance can only be determined by testing.
- 5.3.3 Elsewhere in the data numerous weak ill-defined positive anomalies, linear trends, and isolated responses have been recorded. That some of these may be of archaeological potential should not be dismissed. However, in view of the large-scale natural variation across this section of Area 3 a natural and / or modern origin is suggested for the majority.

6 Conclusion

- 6.1 Gradiometer scanning and detailed survey successfully recorded the locations of four enclosures within the proposed quarry extension. These are present in the north-eastern, central and southern sections of survey. In general the pattern of enclosure remains recorded and their associated responses suggest a period of prolonged archaeological settlement in this location.
- 6.2 Extensive natural variation occurs throughout much of the proposed quarry extension, and this has significantly compromised interpretation of the final results from survey. The levels of interference from the soils and bedrock are such that no precise interpretation can be provided for many of the irregular anomalies present in the southern half of the Area 3.
- 6.3 The general low level of response in the north-western section of the proposed extension suggests a limited archaeological potential for this section of survey. However, the potential significance of the isolated responses and weak trends present in Area 2 should not be dismissed.

Report Author: John Nicholls MSc.
Personnel: John Nicholls MSc. & Dan Shiel BSc.
Date of Survey: 15th & 16th April 2008
Date of Report: 30th April 2008

References:

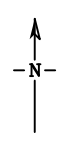
National Soil Survey Of Ireland (1980). *General Soil Map 2nd Edition (1:575,000. An Foras Taluntais).*

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- Gradiometer Scanning
- Detailed Gradiometry
- Poor Ground Not Surveyed
- GPS Tie - In
- Scanned Anomaly

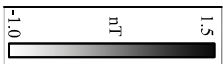


BASED ON MAPPING PROVIDED BY THE CLIENT

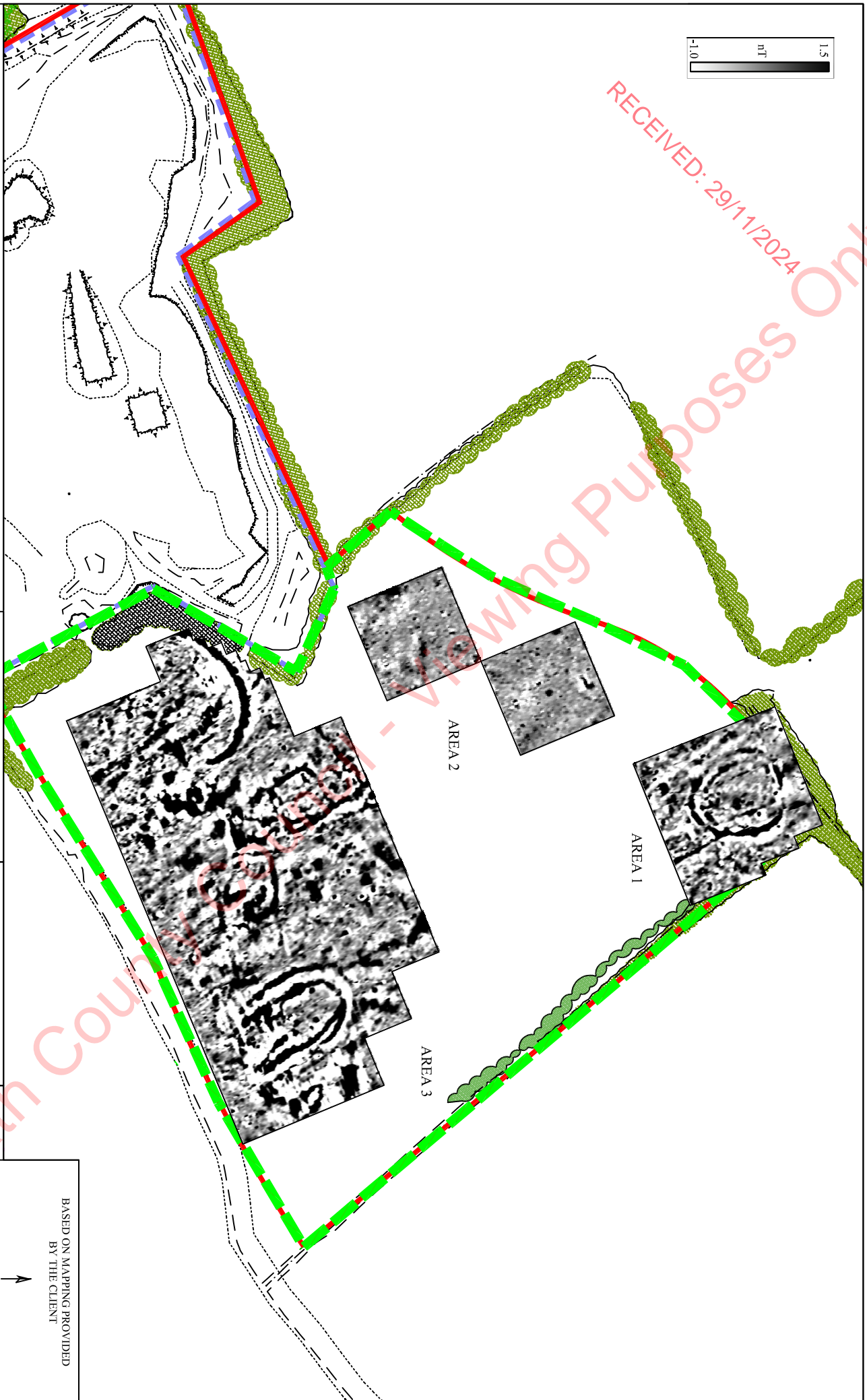


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PROJECT: FORD DE FINE, NAUL, CO. MEATH		TITLE: SURVEY LOCATION DIAGRAM: AAP FOR ME033:036 & PROPOSED EXTENSION		
CLIENT: A.C.S. LTD. ON BEHALF OF GOODE CONCRETE LTD.		FIGURE: FIG. 1	DATE: 30/04/08	SCALE: 1/3000
LICENCE: 08R0101	 Geophysical Prospection For Archaeological Assessment		Apartment 25 Block 11 Gallery Quay Dublin 2 Mobile: +353 (0)87 858 0112 Landline: +353 (0)1 441 8818 Web site: www.targetgeophysics.ie Email: survey@targetgeophysics.ie	
JOB NUMBER: 08/013				



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TARGET Archaeological Geophysics

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PROJECT:
FORD DE FINE, NAUL, CO. MEATH

CLIENT:
A.C.S. LTD, ON BEHALF OF
GOODE CONCRETE LTD

TITLE:
PROPOSED EXTENSION:
GREYSKALE AREAS 1 - 3

FIGURE:
FIG. 2

DATE:
30/04/08

SCALE:
1/2000

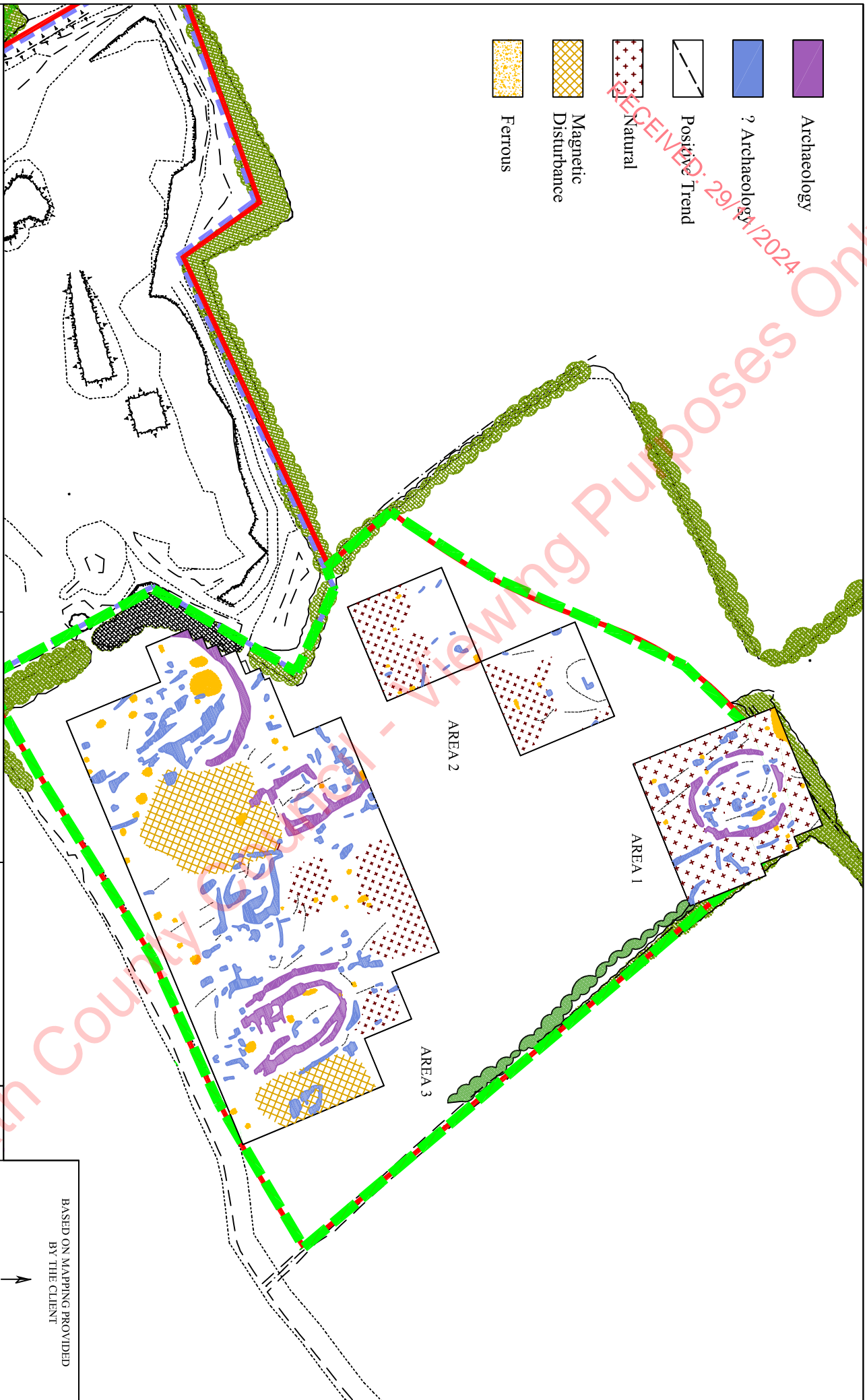
JOB NUMBER:
08013

LICENCE:
08R0101

BASED ON MAPPING PROVIDED
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PROJECT:
FORD DE FINE, NAUL, CO. MEATH

CLIENT:
A.C.S. LTD. ON BEHALF OF
GOODE CONCRETE LTD

TITLE:
PROPOSED EXTENSION:
INTERPRETATION AREAS 1 - 3

FIGURE:
FIG. 3

DATE:
30/04/08

SCALE:
1/2000

JOB NUMBER:
08013

LICENCE:
08R0101

BASED ON MAPPING PROVIDED
BY THE CLIENT

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METRES

Appendix 12-4

2008 Phase 2 Geophysical Survey

TARGET

Archaeological Geophysics

Geophysical Prospection For Archaeological Assessment

Consultancy

Project Design

Scanning & Reconnaissance

Recorded Survey

Gradiometry

Resistivity

Ground Penetrating Radar

Electromagnetics

Motorway Route Selection

Pipeline Corridors

Area Surveys

Research

Geophysical Survey Report:

Phase 2
Ford De Fine, Naul
County Meath

Licence Ref. 08R0101

TAG Project No. 08/013

Client:

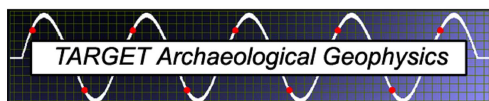


Archaeological
Consultancy Services Ltd.

&

On Behalf Of:

Goode Concrete Ltd.



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Email: survey@targetgeophysics.ie

List Of Figures

Fig. 1	Gradiometer Survey Location: Phase 1 Areas 1 – 3, & Phase 2 Area 4	1:3000
Fig. 2	Phase 2 Area 4 Greyscale	1:2000
Fig. 3	Phase 2 Area 4 Interpretation	1:2000

Digital Archive

A complete digital archive for this geophysical survey is provided on the attached CD. The archive includes all the report text, PDF documentation, AutoCAD drawings, and raw XY trace / greyscale displays relating to this work. Further data relating to this project may be made available upon request.

Executive Summary

Introduction

This report focuses on a 2nd phase of geophysical survey conducted in connection with a proposed quarry extension in Naul townland, Ford De Fine, County Meath. This survey forms part of an archaeological assessment being undertaken by ACS Ltd. and relates to a study area combining parts of two fields immediately to the north-east of an existing quarry owned by Goode Concrete Ltd.

Survey Objectives

The aims of this 2nd phase of geophysical survey were to define the location, form and extent of buried remains, where present, within the north-eastern section of the proposed quarry extension. This 2nd phase of survey follows the discovery of settlement remains immediately to the east and north-east of the existing quarry during phase 1 in April 2008.

Site Location

This 2nd phase of geophysical survey is centered at NGR 312424 261165 and extends through part of one field situated c.250m to the north-east of the existing quarry, and c.0.85 kilometres to the north-west of Naul, Co. Meath. The course of the Delvin River lies c.120m beyond the southern edge of investigation. The limits to this investigation are defined by agricultural land to the north, south, east and west.

A total 1.4 hectares detailed gradiometry was undertaken during this 2nd phase of survey.

Soils, Geology & Topography

The survey area lies on a steep south facing slope, and within a predominantly arable landscape. Soils of the locality include both wet and dry mineral and organic varieties, mainly grey brown podzolics and gleys. The underlying geology is till of Irish Sea origin with limestone and shale (Associations 38 & 40: National Soil Survey Of Ireland, 1980).

Archaeological Background

The area of archaeological potential for mound site ME033:034 lies at the south-western perimeter of the quarry, and details relating to this monument, and further recorded archaeological sites within a 2 kilometre radius are provided in Table 1 below:

Table 1. Known Archaeological Monuments Within c.2 km Radius

RMP No.	MAP	NGR	Townland	Classification
ME033:028 - 032	033- /12/2-3	31141 26224	Fourknocks	Passage tombs; cemetery; mound; barrows; & excavated feature - pits
ME033:033	033-12/3	31204 26181	Naul	Mound
ME033:034	033-/16/3	31199 26076	Naul	Mound

During April 2008 the 1st phase of geophysical survey immediately to the east of the existing quarry defined the locations of four enclosures within Areas 1 & 3. The results from this initial investigation indicated an extensive range of settlement activity extending through much of the initial study area.

Summary Of Results

Detailed gradiometer survey in Area 4, in the north-eastern section of the study area has recorded high levels of natural variation similar to that detected during the 1st phase of survey. No definitive archaeological patterns have been recorded during this 2nd phase of investigation. However, several isolated positive anomalies, linear responses and weak trends have been highlighted from this phase. These are largely thought to relate to modern ferrous debris, and natural processes in the underlying soils / geology. However, an archaeological source for some of these responses should not be ruled out. It is suggested that further examination could be undertaken to confirm the origin of the small-scale and linear anomalies recorded to the east and west.

*** This summary should be read in conjunction with the results from detailed survey.**

1 Areas of Investigation (Figure 1)

- 1.1 A total 1.4ha of detailed gradiometer survey was undertaken within the area highlighted for investigation (Area 4).
- 1.2 The survey grids were set out and tied-in to the ordnance survey using differential GPS, tapes, ranging rods and an optical square. Tie-in points remain in situ to facilitate grid relocation where necessary.
- 1.3 Fieldwork was undertaken on the 19th May 2008 under licence from the Department Of Environment, Heritage & Local Government (Licence No. 08R0101).
- 1.4 Figure 1 presents the results from the 1st phase of gradiometer survey in Areas 1 – 3, and the location of the phase 2 survey in Area 4 (scale 1:3000).

2 Data Display, Interpretation & Digital Archive

- 2.1 The results from the phase 2 detailed survey in Area 4 are presented as a greyscale image in Figure 2 at a scale of 1:2000. Interpretation of the data is provided at the same scale in Figure 3, and derives from in depth analysis of raw greyscale, interpolated greyscale, and XY trace displays.
- 2.2 The archive attached to this report contains both the .TIF XY trace and .BMP greyscale displays for the recorded data, the AutoCAD .DWG files for Figures 1 – 3, and the individual .DWG interpretations made from analysis of the results.

3 Ground Conditions & General Considerations

- 3.1 Ground conditions were generally suitable throughout, the investigation area being under knee high crop at the time of fieldwork. No significant obstructions were present to impede the progress of survey.
- 3.2 Isolated ferrous responses occur throughout the phase 2 survey data from Area 4. These anomalies are usually caused by the presence of modern debris within the topsoil, and are not referred to in the text unless considered relevant.
- 3.3 Instrument specifications and survey methodology are discussed in the *Summary Technical Information* document attached to this report.

4 Detailed Survey, Area 4 (Figures 2 & 3)

- 4.1 The results from survey in Area 4 show high levels of natural variation from the underlying soils and bedrock. This is represented bands of positive / negative response extending through the western portion of survey. The range of this interference is such that were low-level responses of potential interest present they might be difficult to identify. Similar levels of natural variation were recorded to the west in Areas 1 & 2, during the 1st phase of geophysical investigation.
- 4.2 No definitive archaeological patterns are present in the results from phase 2 detailed survey in Area 4. However, several small-scale positive anomalies and linear responses have been recorded to the west, and to the east of the centre of survey. Some of these may be significant, although a natural or modern ferrous source is suggested for the majority. Further examination could be undertaken over a sample of these responses to confirm their true origin.
- 4.3 Numerous weak trends are also present throughout the results. These are largely thought to represent further zones of interference from natural sources.

5 Conclusion

- 5.1 The results from survey in Area 4 show no clear indications of archaeological remains in the north-eastern extremity of the proposed quarry extension. Generally the data indicate high levels of natural variation throughout the western portion of survey.
- 5.2 Zones of possible interest are indicated in the western and eastern portions of survey, and it has been suggested that some of the responses present in these locations could undergo further examination to confirm their true origin.

Report Author: John Nicholls MSc.
Personnel: John Nicholls MSc. & Dan Shiel BSc.
Date of Survey: 19th May 2008
Date of Report: 1st June 2008

References:

National Soil Survey Of Ireland (1980). *General Soil Map 2nd Edition (1:575,000. An Foras Taluntais).*

Summary Technical Information

Fluxgate Gradiometer Survey

Surveys are undertaken using a Bartington *Grad* 601-single axis dual sensor gradiometer. The instrument has a vertical 1m sensor separation permitting finite resolution of buried archaeological features. Surveys are undertaken in scan or detailed (zig-zag traverse) modes for reconnaissance or high-density mapping. The fluxgate sensors are highly stable, minimizing requirements for excess data processing, and their dual or single configuration enables reliable flexibility during fieldwork. The instrument can be employed in both commercial and research based investigations allowing for completion of projects within short timescales. Regular grid sample densities from standard 1600 readings to 12800 readings per 20m² grid are permitted.

A constant high quality of data is assured by experienced field staff operating in accordance to English Heritage Research & Professional Guidelines *Geophysical Survey In Archaeological Evaluation* (David, A, 1995).



Electrical Resistance

The technique is used to record variations in electrical resistance by passing an electrical current through the ground. The standard instrument for archaeological investigations is a twin-probe array of mobile and remote electrodes maintained at a distance of about 20m. The mobile electrodes (one current and one potential, usually 1m apart) are mounted on a survey frame and connected to a Geoscan RM15 resistance meter, which records the specific resistance of the soil (measured in ohms). The resistance meter is connected to the pair of remote probes (one current and one potential), which remain in a fixed location. Data are collected as the survey frame and mobile probes reach each designated sample interval. Surveys are usually undertaken at 1 m sample intervals along 1 m traverses (i.e., 400 readings per 20m x 20m grid). The adaptability of the instrument enables increased sampling intervals, as well as a range of probe configuration to operate at varying depths.



Magnetic Susceptibility

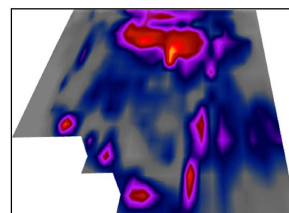
Field and laboratory magnetic susceptibility measurements are taken by applying a low magnetic field and measuring the resultant magnetisation of the soil sample. The magnetic susceptibility of the soil is measured as a proportional constant of the resultant magnetisation of the soil and the applied field. The most common methods used to measure magnetic susceptibility are as follows:

Volume-specific magnetic susceptibility

The volume, or field, specific susceptibility method employs a hand-held Bartington MS2D field coil connected to an MS2 susceptibility bridge and measures the volume-specific susceptibility of the soil in SI units. The field-sampling interval is commonly 10 m.

Mass-specific magnetic susceptibility

Mass, or laboratory, specific susceptibility measurements are taken using a Bartington MS2 susceptibility bridge connected to an MS2B laboratory sensor into which previously dried and sieved samples are inserted. Units of measurement are given in m³kg⁻¹, at 5m sample intervals.

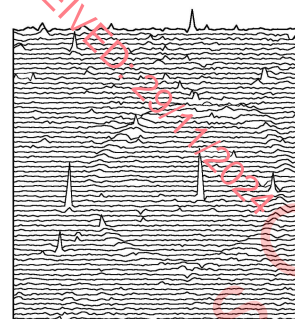


**The relevant technical information for ground penetrating radar, phosphate analysis and further geophysical survey techniques are included as appropriate.*

Data Display Formats

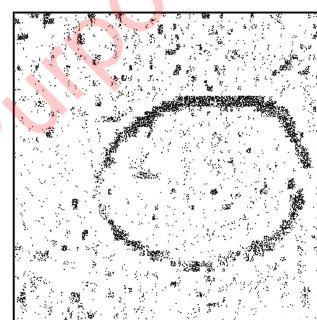
XY Trace

The data are presented as a series of linear traces, enabling a semi-profile display of the respective anomalies along the X and Y-axes. This display option is essential for distinguishing between modern ferrous materials (buried metal debris) and potential archaeological responses. The XY trace plot provides a linear display of the magnitude of the response within a given data set.



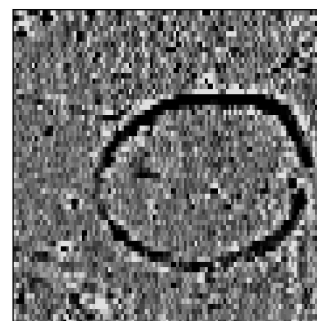
Dot Density Plot

Each datum is assigned a cell in which the intensity or number of dots displayed is proportional to the magnitude of the individual response. The visibility or presentation of responses within a given survey area is governed by numeric parameters specific to both soil morphological and archaeological conditions observed on site. Typically, the range of weak to strong responses is manifested by a low to high level of dot density. The format is useful for displaying gradiometer and resistance data particularly for identifying low-level responses.



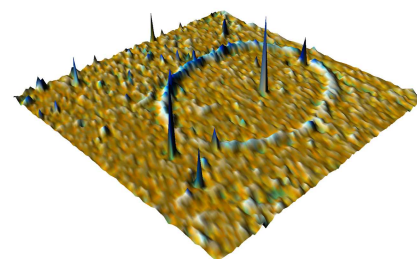
Greyscale

As with dot density plots, the greyscale format assigns a cell to each datum according to its location on the grid. The display of each data point is conducted at very fine increments, allowing the full range of values to be displayed within the given data set. This display method also enables the identification of discrete responses that may be at the limits of instrument detection.



3D Surface Plot

3D Surface plots employ selected colour scale, offset display, and relief plotting to replicate 3D view of datum across a given survey area. Perspective and orthographic projection, variable field view angle, rotation and tilt, are used to demonstrate the magnitude and breadth of responses.



**XY Trace and dot density plots are presented in archive form for display of the raw survey data. Summary greyscale images of the interpolated data are included for presentation purposes and to assist interpretation. 3D Surface Plots are included where deemed beneficial to the viewing and interpretation of the results from survey.*

Glossary of Interpretation Terms

Archaeology

This category refers to responses usually supported by comparative archaeological evidence (i.e., photographic transcriptions, excavation, etc). The term is generally associated with significant concentrations of former settlement, such as ditched enclosures, storage pits and associated features.

?Archaeology

This term corresponds to anomalies that display typical archaeological patterns where no record of comparative archaeological evidence is available. In some cases, it may prove difficult to distinguish between these and evidence of more recent activity also visible in the data.

?Industrial

Such anomalies generally possess a strong magnetic response and may equate with archaeological features such as kilns, furnaces, concentrations of fired debris and associated industrial debris.

Area of Increased Magnetic Response

These responses often lack any distinctive archaeological form, and it is therefore difficult to assign any specific interpretation. The resulting responses are site specific, possibly associated with concentrations of archaeological debris or more recent disturbance to underlying archaeological features.

Trend

This category refers to low-level magnetic responses barely visible above the magnetic background of the soil. Interpretation is tentative, as these anomalies are often at the limits of instrument detection.

Ploughing/Ridge & Furrow

Visible as a series of linear responses, these anomalies equate with recent cultivation trends.

?Natural

Resulting from localised natural variations in the magnetic background of the subsoil, these responses are often recorded in areas of low-lying land prone to flooding.

Ferrous

These anomalies exhibit a typically strong magnetic response, often referred to as 'iron spikes,' and are the result of modern metal debris located within the topsoil.

Area of Strong Magnetic Disturbance

This term refers to large-scale magnetic interference from existing services or structures. The extent of this interference may in some cases obscure anomalies of potential archaeological interest.