



For Mona Offshore Wind Ltd

Magnitude Surveys Ref: MSSH1444

March 2023

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM



3 Captain Street

Bradford

BD1 4HA

01274 926020

info@magnitudesurveys.co.uk

Report By:

Joseph Howarth MSc, James Wilkes BSc, Aidan Palmer MESci

Report Approved By:

Leigh A. Garst BFA MSc

Issue Date:

17 March 2023



Contents

	List of Figures					
	Table of Acronyms					
	•					
		of Units				
		ry of Terms				
		ntroduction				
	2. Q	uality assurance				
	3. OI	<mark>bjectives</mark>				
	4. Ge	eographic <mark>back</mark> ground	8			
	5. Ar	rchaeological background	8			
	6. M	1ethodology	9			
	6.1.	Data collection	9			
	6.2.	Data processing	10			
	6.3.	Data visualisation and interpretation	10			
	7. Re	esults				
	7.1.					
	7.2.					
	7.2.					
		3.1. General statements				
8. Conclusions						
	9. Archiving					
i	10. Copyright					
11. References						
	12. Appendix					
	13. Pr	13. Project Metadata				
	14. Do	ocument History	34			

3 | Page

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

List of Figures

	Figure 1:	Site Location	1:25,000 @ A4
	Figure 2:	Location of Survey Areas (West)	1:25,000 @ A3
	Figure 3:	Location of Survey Areas (East)	1:25,000 @ A3
	Figure 4:	Preliminary Greyscales Areas 1-4 and 275-278	1:3,000 @ A3
	Figure 5	Preliminary Interpretation Areas 1-4 and 275-278	1:3,000 @ A3
	Figure 6	Preliminary Greyscales Areas 5-17	1:3,000 @ A3
	Figure 7	Preliminary Interpretation Areas 5-17	1:3,000 @ A3
	Figure 8	Preliminary Greyscales Areas 17-22 and 24	1:3,000 @ A3
	Figure 9	Preliminary Interpretation Areas 17-22 and 24	1:3,000 @ A3
	Figure 10	Preliminary Greyscales Areas 24-34 and 280-281	1:3,000 @ A3
	Figure 11	Preliminary Interpretation Areas 24-34 and 280-281	1:3,000 @ A3
	Figure 12	Preliminary Greyscales Areas 34, 41-47 and 281	1:3,000 @ A3
	Figure 13	Preliminary Interpretation Areas 34, 41-47 and 281	1:3,000 @ A3
	Figure 14	Preliminary Greyscales Areas 46, 47, 78-82, 88 and 90	1:3,000 @ A3
	Figure 15	Preliminary Interpretation Areas 46, 47, 78-82, 88 and 90	1:3,000 @ A3
ú	Figure 16	Preliminary Greyscales Areas 79-82, 85-98, 115 and 285	1:3,000 @ A3
	Figure 17	Preliminary Interpretation Areas 79-82, 85-98, 115 and 285	1:3,000 @ A3
7	Figure 18	Preliminary Greyscales Areas 96-100 and 285	1:3,000 @ A3
	Figure 19	Preliminary Interpretation Areas 96-100 and 285	1:3,000 @ A3
	Figure 20	Preliminary Greyscales Areas 98-100 104-113, 117 and 292-293	1:3,000 @ A3
	Figure 21	Preliminary Interpretation Areas 98-100 104-113, 117 and 292-293	1:3,000 @ A3
	Figure 22	Preliminary Greyscales Areas 110-121, 125 and 292-293	1:3,000 @ A3
	Figure 23	Preliminary Interpretation Areas 110-121, 125 and 292-293	1:3,000 @ A3
	Figure 24	Preliminary Greyscales Areas 125, 129, 130 and 293	1:3,000 @ A3
	Figure 25	Preliminary Interpretation Areas 125, 129, 130 and 293	1:3,000 @ A3

Figure 26	Preliminary Greyscales Areas 151 and 154	1:3,000 @ A3
Figure 27	Preliminary Interpretation Areas 151 and 154	1:3,000 @ A3
Figure 28	Preliminary Greyscales Areas 144, 147-8, 150, 151, 153, 154, 313-315, 335, 336 and 338-341	1:3,000 @ A3
Figure 29	Preliminary Interpretation Areas 144, 147-8, 150, 151, 153, 154, 313-315, 335, 336 and 338-341	1:3,000 @ A3
Figure 30	Preliminary Greyscales Areas 164, 167, 169, 333 and 338-341	1:3,000 @ A3
Figure 31	Preliminary Interpretation Areas 164, 167, 169, 333 and 338-341	1:3,000 @ A3
Figure 32	Preliminary Greyscales Areas 169, 174, 177-179, 184-188 and 342	1:3,000 @ A3
Figure 33	Preliminary Interpretation Areas 169, 174, 177-179, 184-188 and 342	1:3,000 @ A3
Figure 34	Preliminary Greyscales Areas 203, 206, 207, 210 and 385-386	1:3,000 @ A3
Figure 35	Preliminary Interpretation Areas 203, 206, 207, 210 and 385-386	1:3,000 @ A3
Figure 36	Preliminary Greyscales Areas 234, 243, 244 and 385-386	1:3,000 @ A3
Figure 37	Preliminary Interpretation Areas 234, 243, 244 and 385-386	1:3,000 @ A3
Figure 38	Preliminary Greyscales Areas 233-241 and 243-244	1:3,000 @ A3
Figure 39	Preliminary Interpretation Areas 233-241 and 243-244	1:3,000 @ A3
Figure 40	Preliminary Greyscales Areas 241 and 408	1:3,000 @ A3
Figure 41	Preliminary Interpretation Areas 241 and 408	1:3,000 @ A3
Figure 42	Preliminary Greyscales Areas 408-410	1:3,000 @ A3
Figure 43	Preliminary Interpretation Areas 408-410	1:3,000 @ A3
Figure 44	Preliminary Greyscales Area 272	1:3,000 @ A3
Figure 45	Preliminary Interpretation Area 272	1:3,000 @ A3

5 | Page **6 |** Page

Mona Onshore Cable Corridor, North Wales MSSH1444 - Preliminary Geophysical Survey Report INTERIM

Table of Acronyms

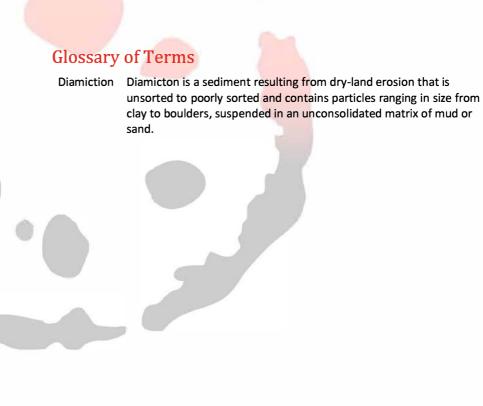
MS Magnitude Surveys

Table of Units

Hectares hz Hertz

Parts per million

clay to boulders, suspended in an unconsolidated matrix of mud or



1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Mona Offshore Wind Ltd to undertake a geophysical survey over a c. 823 ha area of land between the coast of Abergele and Llanelwy, North Wales. (SH 96632 73924). This preliminary report covers the initial findings of the first c.334.5 ha of land parcels surveyed.
- 1.2. The geophysical survey comprised hand pulled or quad towed cart mounted and hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David et al., 2008).
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David *et al.*, 2008), the Chartered Institute for Archaeologists (CIfA, 2020) and the European Archaeological Council (Schmidt *et al.*, 2015).
- 1.4. It was conducted in line with a WSI produced by MS (Turner and Taylor, 2022).
- 1.5. The survey commenced on 31st October 2022 and is on-going.

2. Quality assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance and policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CIfA, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

3.1. The objective of this geophysical survey was to assess the subsurface archaeological potential of the survey area.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

7 | Page

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

4. Geographic background

- 4.1. The survey area was located in the vicinity of Rhyl, Conwy (Figure 1, page 33). Gradiometer survey was undertaken across multiple fields under arable cultivation and pasture. The survey area extends from the coast of Abergele in the west to Llanelwy in the east (Figures 2 and 3). The survey is currently ongoing.
- 4.2. The underlying geology comprises Clwyd Limestone in the northwest (Survey Areas 1-17, 275-279) and the Southeast (Survey Areas 168-189, 203-223, 231-233, 237, 344-381). In the northwest Survey Areas 18-23, 25-26, and 29 comprises mudstone, siltstone, and sandstone of the Ffernant Formation. In the southwest the underlying geology comprises mudstone, siltstone, and sandstone of the Elwy Formation (Survey Areas 27, 31-47, 76-131, 280, 284-291, 294-312, 316-334). The far east of the survey area has underlying geology comprising of mudstone, siltstone, and sandstone of the Warwickshire Group. The superficial deposits consist of diamicton till of the Quaternary period across almost all the survey area. Small areas spread across the survey area, mostly in the west, there are no superficial deposits recorded (British Geological Survey, 2023).
- 4.3. The soils consist of slightly acid loamy and clayey soils to the northwest of the survey area. In the southwest are freely draining slightly acidic loamy and base rich soils. Towards the centre and east of the survey area the soils consist of slowly permeable, seasonally wet slightly acid but base rich loamy and clayey soils (Soilscapes, 2023).

5. Archaeological background

- 5.1. The following is a summary of a desk-based assessment produced and provided by RPS Group (Clarke, 2022).
- 5.2. Evidence of prehistoric activity has been recorded in the wider surroundings of the survey area. Bont Newydd cave has Neanderthal material dated to c.230,000BP, and the earliest hominin in Wales. Shell middens near Prestatyn and an antler mattock found on the foreshore, have been dated to the Mesolithic period. A Neolithic burial chamber at Tyddyn Bleiddyn is located approximately 1.4Kms south of the cable corridor (HER 102133). Neolithic flint scatters and worked flints have also been noted. Bronze Age evidence is limited to a possible barrow at Cae Garnedd (HER 101478) and a standing stone (HER 102568).
- 5.3. Two Iron Age hillforts are located within the vicinity at Castel Cawr (HER 100495) a univallate fort located c.150m south of the cable corridor and Pen-y-Corddyn-Mawr (HER100491) a bivallate fort approximately 400m west of the cable corridor. Cropmarks identified as possible enclosures and field systems have also been recorded c.500m from the cable corridor.
- 5.4. Archaeological evidence from the Romano British period is linked to military conquest and a major road leading west from Deva to Deva Vitrix (Chester) and passes along the line of the Glascoed road. The postulated route of the road has the potential to cross the cable route at four separate locations. Post medieval copper and lead mines near Abergele may have been exploited as early as the Romano British period.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

- 5.5. Activity from the medieval period is centred on St. Asaph, which may have been the location of a 6th century monastery and was included in the Domesday Survey. Outside of St. Asaph the area would have been formed of small hamlets and isolated farms. The mines at Abergele were likely in use during this period and a limestone quarry has also been recorded nearby.
- 5.6. Settlement patterns during the post medieval period continued to evolve and are amply recorded in HER, including small chapels, an icehouse, sheepfolds, field systems, mine shafts and wells. Of these several lie within the proposed cable route (HER 193825, 193904, 67123,192983, 120527, 119799, 120525, 120561, 120562, 66224, 66229, 18150, 169910, 169912, 67877, 67122).
- 5.7. Gwrych Castle is a Grade I listed property dated to the 19th century. Located c.120m from the survey area. The cable route is proposed to pass through Gwrych Historic Park and Garden, which is Grade II listed.
- 5.8. 20th century training trenches and a command post used during World War I are Scheduled Monuments (HER 23082) and lie c.600m to the north of the proposed cable corridor. The remainder of the 20th century is characterised by the expansion of settlements and the development of holiday centres.

6. Methodology

6.1.Data collection

6.1.1. Magnetometer surveys are generally the efficient and suitable geophysical technique for the detection of archaeology in Wales. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

- **6.1.3.** The magnetic data were collected using MS' bespoke hand-pulled or quad-towed cart system and hand-carried GNSS-positioned system.
 - 6.1.3.1. MS' cart and hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

9 | Page

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

- 6.1.3.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing, and visualisation to be monitored in real-time as fieldwork was ongoing.
- 6.1.3.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2. Data processing

6.2.1. Magnetic data was processed in bespoke in house software produced by MS. Processing steps conform to the EAC and Historic England guidelines for 'minimally enhanced data' (see section 3.8 in Schmidt et al., 2015: 33 and section IV.2 in David et al., 2008: 11).

<u>Sensor Calibration</u> – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen *et al.* (2003).

<u>Zero Median Traverse</u> – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

<u>Projection to a Regular Grid</u> – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data is rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance weighting algorithm.

<u>Interpolation to Square Pixels</u> – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3. Data visualisation and interpretation

- 6.3.1. This report presents the gradient of the sensors' total field data as greyscale images. The gradient of the sensors minimises external interferences and reduces the blown out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation.
- 6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2023) was also consulted, to compare the results with recent land use.
- 6.3.3. Geodetic position of results All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

7. Results

7.1.Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible, an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports, as well as reports from further work, in order to constantly improve our knowledge and service.

7.2.Discussion

- 7.2.1. A fluxgate gradiometer survey has been carried out over c. 334.5ha of the 823ha survey area. The geophysical results are presented in consideration with satellite imagery (Figures 4-45). The following are preliminary results and are subject to change as the survey progresses.
- 7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area. The geophysical survey is characterised by possible archaeological features, agricultural activity and natural variations in the geology and soils. Magnetic disturbance can be seen emanating from fences along the edges of the field boundaries and along the route of buried services.
- 7.2.3. Numerous linear, curvilinear, and annular anomalies have detected across the survey area and have been interpreted to be of possible archaeological origin due to their weak, yet defined edges and concentration or location within areas of strong geological enhancement. These anomalies are indicative of cut features with magnetically enhanced fill.
- 7.2.4. Agricultural activity has been identified in the form of former field boundaries, drainage schemes, modern ploughing trends, modern agricultural activity visible on satellite imagery and spreads indicative of changes in land use.
- 7.2.5. Multiple diffuse anomalies have been identified which have been given the wider 'Industrial modern' classification, due to their morphology being indicative of extracted material, and proximity to possible archaeological anomalies.
- 7.2.6. Several anomalies have been detected which have been characterised as 'Undetermined'. There is no clear link to suggest an agricultural or archaeological origin through available mapping or proximity to known archaeological remains (See Section 5). Layout, concentration and consistent magnetic signal could indicate an

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

11 | Page

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

anthropological origin, however confident classification cannot be ascribed from the magnetic data alone.

7.3.Interpretation

7.3.1. General statements

- 7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.
- 7.3.1.2. Data artefact Data artefacts usually occur in conjunction with anomalies with strong magnetic signals due to the way in which the sensors respond to very strong point sources. They are usually visible as minor 'streaking' following the line of data collection. While these artefacts can be reduced in post processing through data filtering, this would risk removing 'real' anomalies. These artefacts are therefore indicated as necessary in order to preserve the data as 'minimally processed'.
- 7.3.1.3. Ferrous (Spike) Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.4. Ferrous debris (Spread) A ferrous debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.
- 7.3.1.5. **Magnetic disturbance** The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as 'Magnetic Disturbance'. These magnetic 'haloes' will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.
- 7.3.1.6. Undetermined Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally distinct from those caused by ferrous sources.

8. Conclusions

8.1. A fluxgate gradiometer survey has successfully been undertaken across c. 334.5ha of the 823ha survey area which is currently ongoing. These are only initial findings subject to change as the survey progresses and further context is applied. The geophysical survey has detected a range of different types of anomalies of archaeological, agricultural, possible extraction, natural and undetermined origins. Modern activity in the form of magnetic disturbance is generally limited to the boundaries, pylons and along the route of buried services.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

- 8.2. Anomalies indicative of possible archaeological activity have been detected across the surveyed areas which are visible in the data as cut features. Continued agricultural use of the landscape is visible as former field boundaries, drainage and modern ploughing regimes, as well as anomalies indicative of changes in land use.
- 8.3. Anomalies of an undetermined origin have been detected. Whilst these most likely have modern or agricultural origins, an archaeological origin cannot be ruled out in this stage of the investigation.

9. Archiving

- 9.1. MS maintains an in house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and ungeoreferenced images, XY traces and a copy of the final report.
- 9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to any dictated time embargoes.

10. Copyright

10.1. Copyright and intellectual property pertaining to all reports, figures and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

11. References

British Geological Survey, 2023. Geology of Britain. Rhyl, Conwy. [http://mapapps.bgs.ac.uk/geologyofbritain/home.html/]. Accessed 13/12/2023.

Chartered Institute for Archaeologists, 2020. Standards and guidance for archaeological geophysical survey. CIfA.

David, A., Linford, N., Linford, P. and Martin, L., 2008. Geophysical survey in archaeological field evaluation: research and professional services guidelines (2nd edition). Historic England.

Google Earth, 2023. Google Earth Pro V 7.1.7.2606.

Olsen, N., Toffner-Clausen, L., Sabaka, T.J., Brauer, P., Merayo, J.M.G., Jorgensen, J.L., Leger, J.M., Nielsen, O.V., Primdahl, F., and Risbo, T., 2003. Calibration of the Orsted vector magnetometer. Earth Planets Space 55: 11-18.

Schmidt, A. and Ernenwein, E., 2013. Guide to good practice: geophysical data in archaeology (2nd edition). Oxbow Books: Oxford.

Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris, A. and Fassbinder, J., 2015. Guidelines for the use of geophysics in archaeology: questions to ask and points to consider. EAC Guidelines 2. European Archaeological Council: Belgium.

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM

13 | Page

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

Soilscapes, 2023. Rhyl, Conwy. Cranfield University, National Soil Resources Institute. [http://landis.org.uk]. Accessed 13/12/2023.

12. Appendix

12.1. Table of Survey Considerations:

	Survey Area	Ground Conditions	Further Notes
	1	The survey area consisted of pasture with livestock. The survey area sloped steeply from north to northwest.	The survey area was bordered on the west by no physical boundary, and by barbed wire fencing on the north, east and south. The south
			also featured a hedge boundary. A metal water butt was present in the northeast corner, as well as a metal gate.
	2	The survey area consisted of pasture. The survey area was mostly flat with a gentle north to south decline.	The survey area was bordered on the west and south by barbed wire fencing. No physical boundary was present in the east. The north side was bordered by a hedge. Boggy and overgrown ground was present in the northeast and southeast corners and were unable to be surveyed.
	3	The survey area consisted of pasture with a gentle slope declining northward.	The survey area was bordered on the west by no physical boundary, on the east and south by barbed wire fencing, and on the north by hedges and trees. A metal gate was present in the southeast.
7	4	The survey area consisted of pasture with a slope declining to the north, northeast and east.	The survey area was bordered on all sides by barbed wire fencing. A small section in the southwest was too steep to survey.
	5	The survey area consisted of pasture with livestock. The area declined steeply to the north.	The survey area was bordered on all sides by hedge with wire fencing, and on the northwest by trees. A metal gate was present in the south corner.
	6	The survey area consisted of pasture. The area declined steeply north to northwest.	The survey area was bordered on all sides by hedge, with sections of wooden fencing in the south. Metal gates were present along the western side.
	7	The survey area consisted of pasture. The area declined moderately to the northwest.	The survey area was bordered on all sides by hedges with wire fencing.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

8	The survey area consisted of pasture. The area gently declined to the northeast.	The survey area was bordered on the north, south and west by barbed wire fencing. There was no physical boundary on the east.
10	The survey area consisted of pasture with livestock. The area declined steeply to the northwest.	The survey area was bordered on all sides by hedge with wire fencing.
13	The survey area consisted of pasture. The area declined to the south and southwest, and was heavily	The survey area was bordered by fencing on the northeast and south sides. The northwest, and southwest was bordered by
	undulated, resulting in a section of the north being unable to be surveyed.	southwest was bordered by hedges and trees.
16	The survey area consisted of pasture. The area declines steeply to the south, with a section of undulating ground in the north.	The survey area was bordered by fencing on the north, centre west and south. With trees and hedges bordering the remainder.
17	The survey area consisted of arable land containing winter crop. The area declined moderately to the southeast and undulated slightly.	The survey area was bordered by hedge with wire fencing. A metal gate was present in the southeast. Two telephone posts were present in the west side of the field, with overhead cables.
18	The survey area consisted of arable land containing winter crop. The area declined moderately to the south and was steeper to the south.	The survey area was bordered by hedge with wire fencing. The area feature two metal gates in the north and northeast, as well as telephone posts and overhead cables on the western side and north edge of the field.
19	The survey area consisted of arable land containing winter crop. The area declined steeply to the southeast.	The survey area was bordered by hedges with wire fencing.
20	The survey area consisted of pasture. The area declined steeply to the southeast.	The survey area was bordered on all sides with wire fencing. A stream surrounded by trees bordered the southeast side.
22	The survey area consisted of pasture. The area declined steeply to the southwest, with the southeast corner very steep and difficult to survey.	The survey area was bordered on all sides by hedges with wire fencing.
23	The survey area consisted of arable land containing winter crop. The area declined to the west, fanning north and south on the west side.	The survey area was bordered on all sides but east with metal fencing. The east featured no physical boundary. A small section of the northeast was unsurveyable due to being too steep.

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM

15 | Page

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

24	The survey area consisted of pasture. The area declined moderately to the southeast.	The survey area was bordered on the east and north by hedges with wire fencing. The south was bordered by a stream surrounded by trees, and the west featured no physical boundary.
25	The survey area consisted of pasture with thistle beds. The area declined steeply southwards, with a very steep ridge on the northeast side.	The survey area was bordered on the east and west by a hedge boundary, and the north and south by treeline. The south also featured a stream just beyond the survey area.
26	The survey area consisted of pasture with thistle beds. The area declined steeply southwards.	The survey area was bordered by a treeline in the southwest corner, and by hedge on the northwest, north and east. The south was bounded by a stream.
27	The survey area consisted of pasture. The area declined gently to the west.	The survey area was bordered by treeline on the north, and hedge boundary on the west, south and east. A metal gate was present in the south-west corner.
28	The survey area consisted of pasture that sloped steeply downwards from east to west.	The survey area was bordered on all sides by hedges and fencing. A power line ran through the west of the survey area in a northwest to southeast orientation.
30	The survey area consisted of flat pasture.	The survey area was bordered on the west, south and east by a hedge, and the north by trees. The central section of the east that surrounds the homestead was bordered by a rope fence supported by wooden posts. A patch of rough, overgrown ground was present along the north edge, and two silage bales were present in the northeast corner.
31	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedges with wire fencing. A powerline ran from the northern corner of the field orientated east to west. Two small patches of overgrown vegetation were present in the southeast.
32	The survey area consisted of pasture. The area declined steeply north to northwest.	The survey area was bordered on all sides by hedges with wire fencing. A powerline ran east-

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM ${\bf 16~|~P~a~g~e}$

		west in the northern half of the area.
35	The survey area consisted of undulating pasture.	The survey area was bordered on all sides by hedges with wire fencing. A small section in the northern edge had no physical boundary.
41	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedges with wire fencing and trees. A single access gate was present in the southeast.
42	The survey area consisted of flat pasture.	The survey area was bordered on the west by a stream, and on the east and south by hedges. The field contained a badger set on the eastern side.
43	The survey area consisted of pasture. The area declined generally to the west, but undulated northwards as well.	The survey area was bordered on the west by wire fencing, and on the eastern sides by hedges.
44	The survey area consisted of flat pasture.	The survey area was bordered on all sides by trees and wire fencing. A single metal gate was present on the northern corner.
46	The survey area consisted of a pasture sloping down outwards in all directions from the centre	The survey area was bordered on all sides by fencing. An area that had previously been burned was present to the east with a feeding pen in the centre a slurry pit to the south.
47	The survey area consisted of a mainly pasture sloping downwards to the north.	The survey area was bordered on all sides by fencing, hedges, and trees. In the southeast of the survey area was a feeding pen. To the southwest there was a slurry pit and a trackway running parallel along the edge of the
		area. Overhead cables ran roughly east to west across the centre of the survey area.
79	The survey area consisted of a pasture that sloped downwards to the southeast.	The survey area was bordered on all sides by wire fencing, hedges, and trees. On the eastern border of the survey area was a pond.
81	The survey area consisted of a pasture that sloped downwards to the north.	The survey area was bordered on all sides by wire fencing and hedges. In the south of the survey area was a body of water surrounded by a mound.

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM

17 | Page

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

	82	The survey area consisted of a pasture that sloped downwards to the south.	The survey area was bordered on all but the north side by hedges and wire fencing. To the north
			were trees and wire fencing. An overhead cable ran east-west in the north of the survey area.
	86/87	The survey area consisted of flat pasture. Both fields were surveyed as one.	The survey area was bordered by fencing and trees to the north, west, and east. To the south by fencing and hedgerow. Running southwest to northeast though
	-		the centre of the area were pylons and overhead cables.
	88	The survey area consisted of flat pasture.	The survey area was bordered on all sides by fencing and trees.
	89	The survey area consisted of flat	The survey area was bordered on
		pasture.	all sides by fencing and trees.
			Running southwest to northeast
			through the north of the area
+	00	The average are related of flat	were pylons and overhead cables.
	90	The survey area consisted of flat pasture.	The survey area was bordered to
	/	pasture.	the west, south, and east by trees, and to the north was hedgerow.
ŀ	91	The survey area consisted of flat	The survey area was bordered to
	31	pasture.	the west, south, and east by trees,
		pusture.	and to the north was hedgerow.
ŀ	92	The survey area consisted of flat	The survey area was bordered to
	_	pasture.	the west and south by trees, to
			the north and east by broken
			hedgerow. An area to the south
	1		was unsurveyable due to rough
			ground.
	93/94	The survey area consisted of pasture	The survey area was bordered to
1		that sloped down to the north. Both	the north and west by broken
1		fields were surveyed as one.	hedgerow. To the east by a
			trackway, and to the south by
			trees. Running east to west
'n,			through the south of the area
-	95	The survey area consisted of pasture	were pylons and overhead cables.
7	95	The survey area consisted of pasture that declined gently to the northeast.	The survey area was bordered on all sides by trees, with a stream
		that declined gently to the northeast.	present on the east side and
			northeast corner. A stream cut
			through the west side of the
			survey area. A small section of the
			northeast corner was overgrown
			and unsurveyable.
	96	The survey area consisted of pasture	The survey area was bordered to
		that sloped downwards to the	the northwest by metal fencing,
		northwest.	to the south by trees and hedges,

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

18 | Page

		and to the northeast there was no physical boundary.
97	The survey area consisted of pasture	The survey area was bordered to
	that sloped down to the north.	the north, west, and south by
	that sloped down to the north.	hedgerow and trees. To the east
		_
		was a trackway. Running east to
		west through the north of the
		area were pylons and overhead
		cables.
99	The survey area consisted of pasture	The survey area was bordered on
	that sloped to the northwest in the	the east side by a metal fence,
	southeast corner and flattened out	and by hedge for the remainder.
-	for the remainder.	Pylons with overhead cables were
		present in the field, with cables
		running northeast-southwest.
100	The survey area consisted of flat	The survey area was bordered on
	pasture.	all sides by hedge, with an
		overhead cable running
		northeast-southwest through the
		southern corner.
104	The survey area consisted of pasture	The survey area was bordered on
	that declined moderately to the	all sides by fence and trees. A
	northwest. The ground was relatively	stream also bordered the
	marshy.	northeast and southwest side. An
		overhead cable ran northwest-
		southeast in the southern half of
		the area.
107	The survey area consisted of arable	The survey area was bordered on
	pasture that sloped downwards to	all sides by hedges and trees, in a
	the northeast.	small section of the northwest the
Y		area was bordered by a metal
		fence. Running roughly southwest
		to northeast across the east of the
		area were telegraph poles and
7		overhead cables.
110	The survey area consisted of pasture	The survey area was bordered to
	that sloped downwards to the north.	the west and south by hedgerow
		and wire fencing. To the north
		and east by trees. To the
		northeast of the area there were
		telegraph poles and overhead
		cables.
112	The survey area consisted of pasture	The survey area was bordered to
	that sloped downwards to the	the east and west by trees, to the
	northeast.	north and south were hedgerow
		and wire fencing. Telegraph poles
		and overhead cables ran
		southwest to northeast through
		the centre of the survey area.
	ļ.	the centre of the survey area.

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM

19 | Page

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

113	The survey area consisted of pasture that sloped downwards to the north. The survey area consisted of pasture that sloped downwards to the south.	The survey area was bordered to the west and south by hedgerow and wire fencing. To the north and east was a broken tree line. Running east to west through the south of the area were telegraph poles and overhead cables. The survey area was bordered to the south by a stream, to the west
9		by hedgerow and wire fencing. To the north and east by broken tree lines and hedgerow and wire fencing. Running southwest to northeast through the west of the area were telegraph poles and overhead cables.
115	The survey area consisted of pasture that sloped down to the east and south.	The survey area was bordered on all but the southwest side by hedges, to the east there was also metal fencing, to the southwest there was no physical boundary.
117	The survey area consisted of pasture that sloped down to the southwest.	The survey area was bordered to the south and west by trees, to the north and east by hedgerow and wire fencing.
118	The survey area consisted of pasture that sloped slightly to the east.	The survey area was bordered on all sides by hedgerow and wire fencing. To the northeast and southwest there were also trees.
119	The survey area consisted of pasture that sloped down to the north	The survey area was bordered on all sides by hedgerow and wire fencing. To the northeast there were also trees. Running through the southeast of the area were telegraph poles and overhead cables.
123	The survey area consisted of flat pasture. The ground was relatively muddy.	The survey area was bordered on all sides by metal fencing. A metal cover was present in the northeast corner. The southern side featured a patch of unsurveyable boggy ground.
124	The survey area consisted of pasture that declined to the north.	The survey area was bordered on all sides but the southeast with metal fencing. The southeast was bordered by a wooden fence and stone wall. A metal trailer was present in the northeast corner.
127	The survey area consisted of pasture containing livestock, that declined to	The survey area was bordered on all sides by metal fencing. A metal

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM
20 | Page

	the northeast and fanned off to the north and south.	gate was present in the northwest side. Telegraph poles were present in the eastern half.
128	The survey area consisted of pasture that declined in a fan to the northeast and southeast.	The survey area was bordered on all sides by metal fencing, with a ditch also bordering the western side. A telegraph pole was in the centre of the field with an overhead wire running east-west. A metal gate was present on the eastern side, and a small section of the northeast corner was unsurveyable due to rough ground.
129	The survey area consisted of pasture that inclined upwards to the east, and declined east halfway along the area, creating a ridge that ran north-south.	The survey area was bordered on all sides by hedge and trees. Metal fencing also bordered the west, south, and east. A metal gate was present in the southeast corner, and east side.
130	The survey area consisted of pasture that inclined upwards to the northeast, and declined to the northeast, creating a ridge halfway along that ran northwest to southeast.	The survey area was bordered on all sides by hedge, trees, and metal fencing. Four metal gates were present on the north, west, south and east. A pylon was present in the southwest, with an overhead cable running north.
144	The survey area consisted of pasture that declined to the northeast. The ground was wet and muddy.	The survey area was bordered on all sides by hedge. Large trees overhung on the west side and southeast corner. A metal trough was beneath the southeast tree, and a metal gate was present in the northeast corner. A small section of the west side was unsurveyable due to being extremely muddy.
147	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedge with wire fencing. Large trees overhung in the northern side. A metal gate was present in the north side also.
148	The survey area consisted of pasture that declined to the north.	The survey area was bordered on all but the south side by hedges, to the south was metal fencing.

Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

21 | Page

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

150	The survey area consisted of pasture that declined to the northwest. The ground was muddy and waterlogged.	The survey area was bordered on all sides by hedge, with large trees being present in the southwest corner, east side and northwest corner. A metal trough and gate were present in the northeast corner.
153	The survey area consisted of pasture that declined to the south.	The survey area was bordered to the north, south, and southeast by metal fencing, to the west and northeast were hedges.
154	The survey area consisted of pasture that declined to the north.	The survey area was bordered to the west and north by hedges, and to the east and south there was no physical boundary.
156	The survey area consisted of arable land that declined southwards in the west and east, with a slope in the centre of the field declining east.	The survey area was bordered on the west, north and east by metal fencing. The northeast corner was also bordered by a stream. The southern side was bordered by a ditch. A small area in the centre of the survey was too steep to survey, and a large tree lie immediately south of it. Another tree was present southeast. A small mound was unsurveyable in the southeast corner, as well as in the northeast corner.
157	The survey area consisted of pasture that declined to the north.	The survey area was bordered on all sides by barbed wire fencing, with metal gates present in the north, northeast, and southwest. A power line ran overhead from east-west in the southern half of the field.
158	The survey area consisted of pasture, which was flat on the eastern side, and inclined upwards and then downwards on the eastern side, creating a ridge running NNE-SSW.	The survey area was bordered on all sides but the south by metal fencing. And on all sides by hedge and trees. Metal gates were present in the southwest, north and east. Telegraph poles were present in the middle of the field, with overhead cables running northeast-southwest.
159	The survey area consisted of arable pasture that declined to the south.	The survey area was bordered on all sides but the south by hedges and trees, as well as metal fencing on the east and west. Metal gates

Mona Onshore Cable Corridor, North Wales
MSSH1444 – Preliminary Geophysical Survey Report INTERIM
22 | Page

		were present in the east and southwest.
160	The survey area consisted of arable	The survey area was bordered on
200	pasture that declined to the south.	the north by no physical
	pastare that declined to the south.	boundary, and on the south and
		east by trees, hedges, and metal
		fencing. A metal gate was present
		in the southeast corner. Pylons
		were present in the area, with
		overhead cables running NNE-
454	T	SSW.
161	The survey area consisted of pasture	The survey area was bordered on
	that is flat in the north and featured	all sides by hedge and trees, and
	a ridge in the southeast running east-	by metal fencing on all sides but
	west.	the south. Metal gates were
		present in the northeast and
		northwest.
162	The survey area consisted of arable	The survey area was bordered on
	land with winter crop.	all sides by hedge with wire
		fencing. Three metal gates were
		present on the western side, and
		one in the southeast. A live
		electrified fence ran NNE-SSW on
162	The second secon	the eastern side.
163	The survey area consisted of pasture	The survey area was bordered on
	that declined to the southwest.	all sides by metal fencing, and on
		all sides but the east by hedge and
		trees. A pylon was present in the
		northern side of the area, with an
V.		overhead cable running east-
164	The survey area consisted of pasture	West.
104	The survey area consisted of pasture that declined to the southwest.	The survey area was bordered on
	that declined to the southwest.	all sides but the east with metal
)		fencing, and on all sides but the
		west with hedges and trees. Two
		metal gates were present in the
167	The survey area consisted of posture	northeast and northwest.
167	The survey area consisted of pasture	The survey area was bordered on all sides by fencing and hedgerow.
	and sloped steeply downwards to the south.	all sides by fericing and fledgerow.
169	The survey area consisted of pasture	The survey area was bordered on
103	and sloped downwards to the south.	all sides by fencing and hedgerow.
172	The survey area consisted of pasture	The survey area was bordered on
	that declined to the south.	all sides by hedgerow.
174	The survey area consisted of pasture	The survey area was bordered on
	that sloped downwards to the south.	all sides by hedgerow and wire
		fencing. Running east to west
		through the north of the survey
		area were pylons and overhead
		cables.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $23 \mid P \text{ a g e}$

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

177	The survey area consisted of pasture that sloped downwards to the northeast. The survey area consisted of pasture	The survey area was bordered on all sides by hedgerow and wire fencing, to the north, west, and east were also intermittent trees. Running east to west through the south of the area were pylons and overhead cables. The survey area was bordered on
	that sloped downwards both to the southwest and northeast from the centre of the area.	all sides by hedgerow and wire fencing with intermittent trees. Pylons and overhead cables ran east to west through the north and south of the survey area.
184	The survey area consisted of pasture and sloped steeply downwards to the north.	The survey area was bordered on all but the west side by hedges and trees, to the west there was no physical boundary. Running east-west through the centre survey area were overhead cables, with a large pylon present in the central west part of the
		survey area. Along the eastern side of the survey area there are multiple metal gates.
185	The survey area consisted of pasture and declined steeply to the north.	The survey area was bordered on all but the east side by hedges and trees, to the east there was no physical boundary. Running eastwest through the centre of the survey area were overhead cables. Along the northwest and north edges of the survey area were metal gates.
186	The survey area consisted of pasture and declined to the north.	The survey area was bordered on all but the southeast side by trees and hedges, to the southeast was fencing. To the west and northeast were metal gates.
187	The survey area consisted of pasture and declined to the north.	The survey area was bordered on all sides by hedges and trees. Running east to west through the centre of the survey area were overhead cables. To the northwest and southeast were metal gates. A small section to the northeast was unable to be surveyed due to farming machinery.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $24 \mid \text{P a g e}$

188	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedges. Running east to west through the centre of the survey area were overhead cables with a telegraph pole in the centre. To the southwest there was a metal gate.
206	The survey area consisted of pasture that declined northwards.	The survey area was bordered on all sides but the north by hedge and metal fencing, and on the north by no physical boundary. Overhead cables ran east-west over the survey area.
207	The survey area consisted of pasture that declined inwards towards the centre, creating a dip.	The survey area was bordered on all sides but the south by hedge and metal fencing, and on the south by no physical boundary. Metal feeding troughs were present in the northeast corner.
208	The survey area consisted of pasture that declined north-eastwards.	The survey area was bordered on all sides but the north by metal fencing, hedges and trees. The northern side featured residential fencing. A pylon was present in the centre of the field, with an overhead cable running eastwest.
211	The survey area consisted of pasture that declined north-eastwards.	The survey area was bordered on the southeast and southwest by no physical boundary, save for a section of metal fence, hedge and tree in the southwest corner. The remainder of the field was bordered by metal fence, hedge and tree.
214/215	The survey area consisted of pasture that declined north-eastwards.	The survey area was bordered on all sides save for the west corner by metal fencing. The western corner featured no physical boundary, and the southern corner featured a ditch. A telegraph pole was present in the eastern side of the field, and a small section of metal debris lie in the northeast corner. The southern corner featured an unsurveyable pond.
220	The survey area consisted of pasture that sloped downwards from the	The survey area was bordered on all sides by hedgerow and metal fencing. There were four metal

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $$25\ |\ P\ a\ g\ e\]$

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

	east and west towards the centre of the area.	gates spread out across the south, east, and northern borderers of the area.
222	The survey area consisted of pasture that sloped downwards to the northwest.	The survey area was bordered on all sides by hedgerow and metal fencing, to the northwest there was also a ditch. Running southwest to northeast through the centre of the survey area were telegraph poles and overhead cables. There were also numerous gates scattered on all sides.
224	The survey area consisted of pasture that sloped downwards to from the southwest to the centre of the area. To the northeast the area was flat.	The survey area was bordered on all sides by metal fencing, a ditch was also present in the southeast. There were metal gates present in the northwest, southwest and southeast.
225	The survey area consisted of flat pasture.	The survey area was bordered on all sides but the southwest by hedgerow and metal fencing. The southwestern side was just bordered by hedgerow. There were metal gates present in the southwest, northwest, and northeast.
226	The survey area consisted of flat pasture.	The survey area was bordered on all but the eastern side by metal fencing, the eastern side was bordered by a tree line. Running north to south through the centre of the area was hedgerow. Some sections in the west of the area were unsurveyable due to metal scrap.
229	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedgerow and metal fencing, a small section in the northeast there was no physical boundary. Large pylons and overhead cables ran northeast to southwest through the centre of the survey area. There were numerous metal gates spread around the borders.
230	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedgerow and metal fencing. Overhead cables ran northeast to southwest through

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM ${\bf 26~|~P~a~g~e}$

	44	The survey area consisted of flat pasture.	The survey area was bordered on the west and southeast with hedge with wire fencing. The area was interspersed with large trees running near the southern
	143	The survey area consisted of flat pasture.	The survey area was bordered to the north and south by hedgerow and fencing, to the west by a trackway and the east featured no physical boundary. The west of the survey area featured scattered farm equipment.
2	241	The survey area consisted of flat pasture with undulating ground.	the west, north and east by hedgerow and fencing, and to the south by a road and wire fencing. The survey area was bordered on all sides but the north by hedge with wire fencing. The northeast featured no physical boundary but was separated by a trackway.
	236	The survey area consisted of flat arable pasture. The survey area consisted of flat	The survey area was bordered on the west and south by hedge with wire fencing. The southwest featured no physical boundary. A metal gate was present in the west. The northeast was bordered by a trackway. The survey area was bordered to
	235	The survey area consisted of flat pasture.	The survey area was bordered to the north, east, and south by hedgerow, trees and wooden fencing. To the west was hedgerow with wire fencing. Running northwest to southeast through the survey area were pylons and overhead cables.
	233	The survey area consisted of pasture that sloped downwards to the northeast.	multiple gates on the southern and northern area borders. The survey area was bordered on all sides by hedgerow, trees, and fencing. In a small section to the northeast there was no physical boundary. Telegraph poles and overhead cables ran southwest to northeast through the centre of the survey area.
			the east of the area. There were

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $$27\ |\ P\ a\ g\ e\]$

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

		border. The northern side was bordered by wooden fencing and trees.
245	The survey area consisted of pasture that sloped gently downwards to the southeast.	The survey area was bordered on the northwest and northeast by hedgerow/trees and a ditch, to the east by a metal fence. To the southeast by a ditch and intermittent trees, and to the southwest there was no physical boundary. In the southwest of the area was a pylon with overhead cables running northwest to southeast through the south of the area.
246	The survey area consisted of flat pasture.	The survey area was bordered on all but the eastern side by metal fencing. To the east was a ditch. A metal gate was present in the northeast of the area.
247	The survey area consisted of flat pasture.	The survey area was bordered to the west by a ditch and hedgerow/intermitted trees, to the north by metal fencing, to the east by hedgerow. To the south there was a pathway. Overhead cables ran northwest to southeast through the north of the survey area.
249	The survey area consisted of flat arable land with winter crop.	The survey area was bordered on all sides by metal fencing. A pond lined with trees was present in the western side. A trough was present in the centre of the field. A metal gate was present in the northeast corner.
251	The survey area consisted of flat arable land with winter crop.	The survey area was bordered on all sides by metal fencing, and metal gates were present in the east and west. A metal trough was present in the southwest corner.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $28 \mid \text{P a g e}$

		-
253/254/256/258	The survey area consisted of mostly flat pasture with a small northwest facing declination in the north.	The survey area was bordered on all sides by metal fencing, with a metal gate along the northeast edge. A pylon was present in the western half of the field, with overhead cables running NNW-ESE along the breadth of the field. Three large trees stood within the field, and a small section of the southwest was unsurveyable due to overgrown vegetation.
256/257	The survey area consisted of flat arable land.	The survey area was bordered on all sides by metal fencing, and three metal fences were present in the northern and southwestern corners of the field. Three areas of the field were unsurveyable, a
		pond in the northern half, as well as a trough and two large holes in the southern half.
272	The survey area consisted of flat pasture.	The survey area was bordered on the south and east by hedge with wire fencing, and on the west by just wire fencing and a road. Scattered farm equipment was present in the northeast corner.
275	The survey area consisted of pasture and sloped gently downwards to the north.	The survey area was bordered to the south and west by hedges and wire fences, to the south by a brick wall, and to the east by metal fencing. A small section to the southeast was unable to be surveyed due to farming machinery.
276	The survey area consisted of flat pasture.	The survey area was bordered on all but the west by hedges, to the west was metal fencing. A small section to the southwest was unable to be surveyed due to farming machinery.
277	The survey area consisted of flat pasture.	The survey area was bordered on all sides by hedges. In the southwest, central south, and east of the survey areas were access metal gates. In the central western part of the survey area was a pond.
278	The survey area consisted of pasture and sloped downwards to the north.	The survey area was bordered to the north and west by a stone wall, to the east by fencing, and to

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $$29 \mid P$ a g e$

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

		the south by trees and a wall. A
		small section was unable to be
		surveyed to the south due to a
		large mound.
280	The survey area consisted of pasture	The survey area was bordered on
	that declined steeply to the west.	all sides by hedge with wire
	and decimed electric tree in each	fencing. Overhead cables ran
		from the northwest corner to the
		south side.
281	The survey area consisted of pasture	The survey area was bordered
201	that declined mainly to the west, but	mostly by large trees but featured
	also northwards in the southern half.	
		sections of hedge in the eastern
	The ground conditions were wet and	side. The entirety was bordered
	muddy.	by wooden fencing with wire.
		Telegraph posts ran northwest-
		southeast along the eastern side.
		Multiple pieces of metal farm
		equipment were present in the
		south, including feeding troughs,
		a horse box and a fence.
285	The survey area consisted of pasture	The survey area was bordered on
	which declined steeply to the	all sides by large trees. Overhead
	northwest.	power cables ran northeast-
		southwest along the northern
		side. A small area of thick marsh
		was unsurveyable along the
		southern edge.
292	The survey area consisted of pasture	The survey area was bordered on
	which declined to the northwest. The	the north and west by trees, and
	ground conditions were bumpy.	the southern and eastern sides
	8	featured mostly hedge with
		wooden fence and metal wiring. A
		portion of the north-western
		corner was unsurveyable due to
1		overgrown vegetation.
202	The survey area consisted of pasture	
293	The survey area consisted of pasture	The survey area was bordered on
	which declined to the northwest.	the west by hedge with wooden
		fencing with wire. The east was
		bordered by wooden fencing. The
		south was bordered by trees.
		Three metal gates were present in
		the southwestern corner. The
		northern half of the area was
		unsurveyable due to it being a
		roped off horse paddock.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $$30 \mid P$\ a g\ e$

313	The survey area consisted of flat pasture.	The survey area was bordered on all but the northwest side by hedges and trees, to the northwest was a residential fence. Running east to west through the centre of the survey area were overhead cables with a telegraph pole present in the centre. To the northeast was a metal gate.
314	The survey area consisted of pasture that sloped downwards to the south.	The survey area was bordered on all sides by hedges and trees. Running east to west through the north of the survey area were overhead cables and telegraph poles. To the northeast and southwest there were metal gates.
315	The survey area consisted of pasture that sloped gently downwards to the south.	The survey area was bordered on all sides by hedges, to the south and west there was also metal fencing. In the northeast and northwest small sections had no physical boundary. To the southeast there was a metal gate and a metal water trough.
333	The survey area consisted of pasture that very steeply sloped downwards to the north.	The survey area was bordered on all sides by hedges. The area was separated into three even sections by electric fences that ran roughly north-south. A section to the west was unable to be surveyed due to overgrown vegetation and trees. To the east and north, there were multiple metal gates.
334	The survey area consisted of pasture which declined steeply to the south.	The survey area was bordered on the south and east by electric fencing. The north and west were bordered by no physical boundary. Two telegraph poles were present on the south edge. A single pylon was present in the northeast.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM $$31\ |\ P\ a\ g\ e\]$

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM

335	The survey area consisted of pasture which declined gently to the southeast. The ground conditions were heavily muddy and waterlogged.	The survey area was bordered on the north and west by hedge, with a portion of the west being residential fencing. The south was bordered by a rope fence and on the east by trees. Telegraph posts ran west to east with overhead cables.
336	The survey area consisted of pasture which declined gently to the southeast. The ground conditions were heavily muddy and waterlogged.	The survey area was bordered on the north by hedge, on the west, east and south by hedge and trees. A trackway ran in between the northern and southern halves, with electrified fence running along either side of the track. A line of hedge and trees
		ran southwest along the east southern side. Telegraph posts ran west to east with overhead cables, and southeast in the southern half. Sections of the north-western edge were
339	The survey area consisted of pasture which declined to the SSE. The ground conditions were wet and muddy.	unsurveyable due to tree debris. The survey area was bordered on the north, south, and southeastern corner by hedge, and on the west and northeast corner by trees. A single large tree was present in the centre southern half. Farming equipment rendered a small portion of the northeast corner unsurveyable. A telephone post was present in the southern half, with overhead
383	The survey area consisted of pasture that sloped down from the southeast to the northwest and north.	cables running east and southwest. The survey area was bordered on the south and west by metal fencing. To the north and northeast were intermittent trees. To the east was a stone wall. In the centre of the survey area was a stone water trough.
389	The survey area consisted of mostly flat pasture with a section to the west sloping moderately downwards to the northeast.	The survey area was bordered to the west, north and east by hedgerow and to the south and east by metal fencing. Telegraph poles and overhead cables ran northwest to southeast through the centre of the survey area.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM ${\bf 32~|~P~a~g~e}$

		There was a small section in the
		northeast that was unsurveyable due to a ditch.
397	The survey area consisted of pasture that gently sloped downwards from west to east.	The survey area was bordered to the west, north, and east by metal fencing. To the north there was also hedgerow. The south was bordered by intermittent trees.
396/400	The survey area consisted of gently undulating pasture.	The survey area was bordered to the north by a ditch and hedgerow and to the west, south, and east by metal fencing and hedgerow. There were two trees in the centre of the survey area.
402	The survey area consisted of flat pasture.	The survey area was bordered to the south and east by hedgerow and to the north and west by metal fencing. There were wooden gates present in the southwest and southeast of the area.
408	The survey area consisted of mostly flat pasture with a slope down to the west in the northwest of the area.	The survey area was bordered on all sides by fencing and hedgerow. Overhead cables ran roughly east to west through the south of the survey area. A section to the northeast was unsurveyable due to trees.
409	The survey area consisted of flat pasture.	The survey area was bordered on all sides save for two sections of the east by hedge with wire fencing, and on the eastern sections by trees and fencing. Tree debris rendered the northwest corner unsurveyable.
432	The survey area consisted of pasture which declined to the northeast.	The survey area was bordered on all sides by hedge with wooden fencing and metal wiring, with sections of large trees interspersed throughout. A single pylon was present in the southwest.
820	The survey area consisted of undulating pasture.	The survey area was bordered on all sides by hedge with wire fencing. A pond was present in the northwest corner.

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM 33 | Page Mona Onshore Cable Corridor, North Wales

MSSH1444 – Preliminary Geophysical Survey Report INTERIM

13. Project Metadata

MS Job Code	MSSH1444	
Project Name	Mona Onshore Cable Route, North Wales	
Client	RPS Consulting Ltd	
Grid Reference	SH 96632 73924	
Survey Techniques	Magnetometry	
Survey Size (ha)	334.5ha of the 823ha (Magnetometry)	
Survey Dates	2022-10-31 to 2022-01-24	
Project Lead	Leigh A. Garst BFA MSc	
Project Officer	Joseph Howarth MSc Matthew Stead BA (Hons) Alexander Stoddart BA	
HER Event No	TBC	
OASIS No	N/A	
S42 Licence No	N/A	
Report Version	Preliminary 0.3	

14. Document History

Version	Comments	Author	Checked By	Date
Preliminary	Initial draft for Project Lead	AH	LAG	19
Report	to Review			December
				2022
Updated	Additional Surveyed Areas	AS		24 January
Preliminary	and Figures	-		2023
Report				
Client	Client Comments	AS		07 March
Corrections	Addressed			2023
Client	Client Comments	JH	AS	17 March
Corrections	Addressed	A.		2023

Mona Onshore Cable Corridor, North Wales MSSH1444 – Preliminary Geophysical Survey Report INTERIM ${\bf 34~|~P~a~g~e}$

