

BARROW OFFSHORE WIND FARM

ARCHAEOLOGICAL PROTOCOL

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BARROW OFFSHORE WIND FARM ARCHAEOLOGICAL PROTOCOL

1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Wessex Archaeology was commissioned by RSK ENSR on behalf of Barrow Offshore Wind farm Ltd (BOW) to prepare an archaeological protocol for the development stage of the Barrow Offshore Wind Farm, Lancashire. The main development area lies 21.8 kilometres off the western coast of Lancashire. It is linked to the coast by a cable route that continues in-shore to a point on the southern edge of the town of Heysham (**Figure 1**).

1.2 DEVELOPMENT PROPOSAL

1.2.1 The wind farm comprises the construction of 30 turbines with associated sub-sea cabling between each of the turbines and up to five parallel cables running from the centre of the wind farm to a landfall point between Heysham Business Park and the power station. Subsequent 33/132kv underground cabling will connect the wind farm to the electricity network via an existing electrical sub-station (**Figure 1**).

1.3 SCOPE

1.3.1 The following archaeological protocol is based on recommendations made in the Environmental Assessment Technical Report: Archaeology (Wessex Archaeology 2002). The 2002 report is hereafter referred to as the 'desk-based assessment'.

2 IMPLEMENTATION

2.1.1 The responsibility for implementing this protocol rests with Vestas-KBR.

2.1.2 Each company involved in those elements of the construction of the wind farm that may disturb the ground or seabed will nominate a single point of contact for all communication regarding archaeology. Similarly, one member of the crew on each construction vessel will be nominated as the point of contact for that vessel. All communication will be copied to BOW.

2.1.3 Vestas-KBR will maintain a register of nominated contacts. Vestas-KBR will forward the list to BOW and keep a copy themselves.

2.1.4 Copies of relevant sections of this protocol, including plans of Construction Exclusion Zones, will be issued to Vestas-KBR who will distribute data to appropriate staff included within the nominated contacts for each vessel.

2.1.5 BOW will obtain curatorial advice from the Archaeological Officer for Lancashire County Council (LCCAO).

2.1.6 All data will be compiled in a format suitable for submission of monument, event and source records to the Lancashire Sites and Monuments Record.

3 CONSTRUCTION EXCLUSION ZONES

3.1 INTRODUCTION

3.1.1 Construction Exclusion Zones will be the principle means used to preserve *in situ* any deposits of potential or known archaeological interest.

3.2 LOCATION AND EXTENT OF EXCLUSION ZONES

Construction Exclusion Zones within the Wind Farm

3.2.1 The following sites, records and geophysical anomalies were identified within the wind farm site:

<i>Site No.</i>	<i>Site type</i>	<i>Site sensitivity</i>	<i>Interpretation</i>
1100	Obstruction	Uncertain	Reason for obstruction not known
1101	Obstruction	Uncertain	Reason for obstruction not known
1102	Obstruction	Uncertain	Reason for obstruction not known
1103	Obstruction	Uncertain	Reason for obstruction not known
1104	Obstruction	Uncertain	Reason for obstruction not known
1105	Wreck	Negligible	Modern vessel
1106	Wreck	Uncertain	Age and type of vessel not known, position not certain.
5003	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5004	Side-scan anomaly	Negligible	Rope, chain or trawl/anchor scar
5005	Side-scan anomaly	Negligible	Rope, chain or trawl/anchor scar
5006	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5007	Side-scan anomaly	Uncertain	Unidentified metal object
5008	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5010	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5012	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5013	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5014	Side-scan anomaly	Negligible	Rope, chain or trawl/anchor scar
5018	Side-scan anomaly	Negligible	Rope, chain or trawl/anchor scar
5019	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris

3.2.2 Construction Exclusion Zones are required for all sites of uncertain sensitivity, which are highlighted in the table above. The sites of negligible sensitivity are considered to have a low archaeological potential and thus will not be subject to exclusion zones.

3.2.3 One site, wreck **1106**, will be enclosed within an exclusion zone with a radius of 50 metres. All the other sites are geophysical anomalies and reported obstructions and will be enclosed within exclusion zones with a radius of 25 metres (**Figure 2**).

3.2.4 Exclusion zones will apply to construction works, vessel mooring and any other activities that may disturb the seabed during the installation of the wind farm.

Construction Exclusion Zones Along the Line of the Marine Cable Route

3.2.5 The following sites, records and geophysical anomalies were recorded within 400 metres of the line of the cable route:

<i>Site No.</i>	<i>Site type</i>	<i>Site sensitivity</i>	<i>Interpretation</i>
5020 / 1118	Wreck	Uncertain / Medium	Date of construction and rarity of vessel not known. Potentially of some interest.
1057	Wreck	Uncertain / Medium	Date of construction and rarity of vessel not known. Potentially of some interest.
1109	Obstruction	Uncertain	Reason for obstruction not known.
5015	Side-scan anomaly	Negligible	Modern buoy and clump weight.
5016	Side-scan anomaly	Negligible	Rope, chain or trawl/anchor scar
5021	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5022	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5023	Side-scan anomaly	Negligible	Modern clump weight.
5024	Side-scan anomaly	Negligible	Modern clump weight.
5025	Side-scan anomaly	Negligible	Modern clump weight.
5026	Side-scan anomaly	Negligible	Modern clump weight.
5027	Side-scan anomaly	Negligible	Modern buoy and clump weight.
5028	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5029	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5030	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5031	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5032	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5033	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5034	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5035	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris
5036	Side-scan anomaly	Uncertain	Unidentified rock or wreck debris

3.2.6 Construction Exclusion Zones are required for all sites of uncertain sensitivity, which are highlighted in the table above. The sites of negligible sensitivity are considered to have a low archaeological potential and thus will not be subject to exclusion zones.

3.2.7 Two sites, wrecks **5020/1118** and **1057**, will be enclosed within exclusion zones with a radius of 50 metres. All the other sites are geophysical anomalies and reported obstructions and will be enclosed within exclusion zones with a radius of 25 metres (**Figure 3**).

3.2.8 Exclusion zones will apply to construction works, vessel mooring and any other activities that may disturb the seabed during cable laying.

3.3 ESTABLISHING NEW EXCLUSION ZONES

- 3.3.1 If new finds of archaeological importance come to light during the course of construction they will be subject to the implementation of a Construction Exclusion Zone.
- 3.3.2 LCCAO will be consulted on the design (position, extent) and implementation of any new Construction Exclusion Zones.

3.4 ALTERING EXCLUSION ZONES

- 3.4.1 Construction Exclusion Zones may be altered (enlarged, reduced, moved or removed) as a result of archaeological field evaluation. Archaeological field evaluation may include suitable high-resolution marine geophysical survey, and/or survey by diver/ROV (see Sections 4 and 6).
- 3.4.2 The alteration of Construction Exclusion Zones will only be undertaken in consultation with LCCAO. Following alteration, a new plan giving details of the Construction Exclusion Zones will be drawn up and issued to each nominated point of contact.

3.5 MONITORING OF EXCLUSION ZONES

- 3.5.1 The effectiveness of the Construction Exclusion Zones will be periodically monitored by visits to the construction vessels by an appropriately qualified archaeologist. The frequency and timing of these visits will be determined once the construction programme is known.
- 3.5.2 Should a breach of a Construction Exclusion Zone be suspected then this may be resolved by further investigation, which may include carrying out a survey of the area thought to be affected (see Sections 4 and 6).
- 3.5.3 On completion of the construction phase, a report will be compiled on the effectiveness of the Construction Exclusion Zones, any alterations to them, and the results of monitoring.

4 MARINE GEOPHYSICAL SURVEY

4.1 INTRODUCTION

- 4.1.1 The analysis of geophysical data will enable the recovery of archaeological data concerning both submerged prehistoric landscapes and wrecks or wreck-related features. This data may be used to enhance the archaeological record, or to alter (enlarge, reduce, move or remove) existing Construction Exclusion Zones.
- 4.1.2 An archaeological assessment of sidescan data collected by Titan Environmental Surveys Limited was conducted as part of the desk-based assessment. The results of this survey were considered to be average to good for

the purposes of identifying cultural remains. In total, 38 anomalies of potential archaeological interest were identified (Wessex Archaeology 2002).

4.2 PLANNING FURTHER GEOPHYSICAL SURVEYS

4.2.1 Any further geophysical surveys will include archaeological input at the planning stage so that archaeological considerations can be taken into account. Companies planning geophysical survey should, through their nominated point of contact, advise BOW that further survey is being planned.

4.2.2 This input will take the form of advice from an appropriately qualified marine archaeologist on measures to optimise archaeological results from the planned survey, including:

- Available details of sites and/or anomalies identified in the desk-based assessment;
- Archaeological potential of areas where no existing sites and/or anomalies are yet known;
- Geophysical sources/equipment;
- Methodologies, including spacing and orientation of lines and cross lines;
- Source/equipment settings;
- Requirements for post-processing, interpreting and archiving resulting data.

4.3 UNDERTAKING FURTHER GEOPHYSICAL SURVEYS

4.3.1 Consideration should be given to having a suitably experienced archaeologist aboard survey vessels for the duration of geophysical surveys. The archaeologist would advise on the suitability for archaeological purposes of the data being acquired, and be able to propose minor changes to the survey method, settings, etc. to optimise archaeological results and thereby reduce the need for repeat survey.

4.4 ARCHAEOLOGICAL INTERPRETATION OF FURTHER GEOPHYSICAL DATA

4.4.1 Any further geophysical survey data should be interpreted by a suitably experienced archaeologist. Data sources with the potential for identifying archaeological remains are as follows:

- **Sidescan** survey may identify wrecks and other related debris of all periods that lie (at least in part) at the surface of the seabed;
- **Magnetometer** survey may identify wrecks and other related debris of all periods (though principally post-medieval and modern) on the surface of and under the seabed;
- **Boomer** and/or **Chirp** (hereafter termed **seismic**) survey may identify features and deposits that relate to the topography of an area prior to its burial and inundation during the prehistoric period,

and buried objects such as wrecks (note: seismic data has to be calibrated with bathymetric data to enable the calculation of absolute heights);

- **Bathymetry** may be used to characterise wrecks and other related debris of all periods that lie (at least in part) on the surface of the seabed. The density of data generated by multibeam bathymetric surveys gives it a considerable advantage, in archaeological terms, over single beam bathymetry.

4.4.2 Archaeological interpretation should include:

- Examination of sidescan, magnetometer and, if available multibeam and seismic data for areas within the vicinity of known wreck sites and previously identified geophysical anomalies;
- Examination of sidescan, magnetometer and, if available multibeam and seismic data within areas that will be subject to scheme impacts in order to identify any as yet unknown wreck remains;
- If available, seismic data should be assessed in order to plot the general trend of the sub-surface sediments with archaeological potential;
- Following the initial assessment, further detailed interpretation of seismic data should be undertaken within those areas that will be subject to scheme impacts.

4.4.3 The archaeological results of any further geophysical survey will be compiled as a report, which will include likely requirements (if any) for further archaeological work.

5 MARINE GEOTECHNICAL SURVEY

5.1 INTRODUCTION

5.1.1 Analysis of borehole and vibrocore samples will enable the recovery of archaeological data relating to submerged terrestrial prehistoric archaeology within the development area.

5.1.2 No geotechnical data was assessed during the compilation of the desk-based assessment (Wessex Archaeology 2002). However, an assessment of borehole logs, and a number of samples taken from them, is currently being undertaken.

5.2 PLANNING FURTHER GEOTECHNICAL SURVEYS

5.2.1 Any further geotechnical surveys will include archaeological input at the planning stage so that archaeological considerations can be taken into account. Companies planning geotechnical survey should, through their nominated point of contact, advise RSK ENSR that further survey is being planned.

5.2.2 This input will take the form of advice from an appropriately qualified archaeologist on measures to optimise archaeological results from the planned survey, including:

- Available details of those areas of potential identified during the desk-based assessment;
- Geotechnical equipment, including core types;
- Methodology, including positions, numbers and logging;
- Requirements for description and sub-sampling of geotechnical cores and samples.

5.3 ARCHAEOLOGICAL USE OF GEOTECHNICAL DATA

5.3.1 The archaeological analysis of geotechnical data occurs in four stages:

Stage 1: Planning

5.3.2 Desk-based archaeological assessment of core logs generated by geotechnical contractors. This assessment will establish the likely presence of horizons of archaeological interest and broadly characterise them, as a basis for deciding what if any Stage 2 archaeological recording is required. The Stage 1 report will state the scale of Stage 2 work proposed.

Stage 2: Coring and Recording

5.3.3 Archaeological recording of selected retained or new cores. This will entail the splitting of the cores, with half of each core being cleaned and recorded. The Stage 2 report will state the results of the archaeological recording and will indicate whether any Stage 3 work is warranted.

Stage 3: Sampling and Assessment

5.3.4 Sub-sampling and palaeo-environmental assessment (pollen, diatoms and foraminifera). Sub-samples will be taken from one core-half, with the other core-half retained intact should further sub-sampling be required. Assessment will comprise laboratory analysis of the samples to a level sufficient to enable the value of the palaeo-environmental material surviving within the cores to be identified. Sub-samples will also be taken and retained at this stage in case radiocarbon dating is required during Stage 4. The Stage 3 report will set out the results of each laboratory assessment together with an outline of the archaeological implications of the combined results, and will indicate whether any Stage 4 work is warranted.

Stage 4: Analysis and Dating

5.3.5 Full analysis of pollen, diatoms and/or foraminifera assessed during Stage 3. Typically, Stage 4 will be supported by radiocarbon dating of suitable sub-samples. Stage 4 will result in an account of the successive environments within the coring area, a model of environmental change over time, and an outline of the archaeological implications of the analysis.

- 5.3.6 If undertaken, Stage 4 should be reported as part of a final report covering all aspects of the palaeo-topography and prehistory of the area affected by the development (see Section 11). This may also include relevant elements data generated by the desk-based assessment, foreshore coring and terrestrial watching brief.

6 DIVER / ROV OBSTRUCTION SURVEYS

6.1 INTRODUCTION

- 6.1.1 Data from any diver and/or ROV surveys undertaken will be reviewed to enhance the archaeological record, or to alter (enlarge, reduce, move or remove) existing Construction Exclusion Zones.

6.2 PLANNING DIVER / ROV SURVEYS

- 6.2.1 Any diver / ROV surveys undertaken primarily for engineering, ecological or other non-archaeological purposes should include archaeological input at the planning stage so that archaeological considerations can be taken into account. Companies planning diver / ROV survey should, through their nominated point of contact, advise BOW that further survey is being planned.

- 6.2.2 This input will take the form of advice from an appropriately qualified marine archaeologist on measures to optimise archaeological results from the planned survey, including:

- Available details of sites and/or anomalies identified in the desk-based assessment;
- Archaeological potential of areas where no existing sites and/or anomalies are yet known;
- Type and level of diver positioning, voice recording and video/still recording;
- Clear guidance on the types of sites and finds that to be reported and recorded.

- 6.2.3 Consideration should be given to having an archaeologist (or archaeological team) present during any diver or ROV surveys, either as an observer(s) or participating diver(s) to optimise archaeological results and thereby reduce the need for repeat survey.

6.3 REVIEW OF DATA COLLECTED BY DIVER/ROV SURVEY

- 6.3.1 Following the completion of the Diver/ROV survey all data, including video footage that was not seen by an archaeologist during data collection, will be reviewed by an appropriately qualified archaeologist.

- 6.3.2 This review will identify any sites that are of potentially archaeological interest. The report will identify those sites and/or geophysical anomalies that are of

sufficient archaeological interest to warrant further investigation. It will also identify those sites that are no longer of archaeological interest and hence may be removed from the list of Construction Exclusion Zones.

- 6.3.3 This phase of work will constitute a Level 1 Archaeological Wreck Record (see **Appendix I**).

6.4 ARCHAEOLOGICAL SITE ASSESSMENT

- 6.4.1 If the review of data collected by diver/ROV survey identifies any sites of archaeological interest that will be subject to impact during construction then a Level 2 Archaeological Wreck Survey (see **Appendix I**) will be required.
- 6.4.2 A Level 2 Archaeological Wreck Survey will involve two to four dives on each site, undertaken by suitably experienced archaeologists. Recording will be conducted to a level whereby a statement can be made as to the date, character, extent and archaeological importance of a site. Typically this will include a sketch plan of the site supported by key measurements and accurate positional information. Significant diagnostic features will be recorded by photography backed up with written records and measurements. Limited documentary research may also be required to support the assessment of importance.
- 6.4.3 The archaeological results of any diver / ROV survey will be compiled as a report, which will include likely requirements (if any) for further archaeological work.

7 FINDS REPORTING PROCEDURE

7.1 SCOPE

- 7.1.1 The Finds Reporting Procedure addresses the reporting of finds recovered from the sea during the course of construction and maintenance of the wind farm. The Procedure has been included as Appendix II of this document
- 7.1.2 The staff on all construction vessels will be informed of the Finds Reporting Procedure, details of the find types that may be of archaeological interest, and the potential importance of any archaeological material encountered.
- 7.1.3 All finds of archaeological material will be reported via Vestas-KBR's nominated point of contact and BOW to LCCAO. If the find is 'wreck' within the meaning of the Merchant Shipping Act 1996 then a report will also be made to the Receiver of Wreck. If the find is 'treasure' within the meaning of the Treasure Act 1996 then a report will also be made to the Coroner.
- 7.1.4 The response to reported finds will be implemented through the measures set out in this protocol, including further survey or establishment of new Construction Exclusion Zones.

- 7.1.5 The Finds Reporting Procedure will be monitored by means of periodic visits to construction vessels by an appropriately qualified archaeologist. The frequency and timing of these visits will be determined once the construction programme is known.
- 7.1.6 At the end of the construction phase a report will be prepared on the results of the Finds Reporting Procedure. The results will be included in the final archaeological report in the section covering maritime sites and finds within the area affected by the wind farm (see also Section 11).
- 7.1.7 The finds reporting procedure is attached as Appendix II

8 WALKOVER SURVEY

8.1 INTRODUCTION

- 8.1.1 The walkover survey will be used to gather archaeological data about the character, location, extent and date of any archaeological sites visible on the ground along the line of the foreshore and terrestrial cable route.

8.2 FIELDWORK

- 8.2.1 The line of the foreshore and terrestrial cable route will be visually inspected by an appropriately qualified archaeologist for the presence of archaeological sites. Position-fixes will be obtained for all sites to an accuracy level of not more than one metre, and the visible extents of all sites will be recorded to the same level of accuracy. Where the observed sites correspond with sites known from the desk-based assessment, the existing record will be updated. Where new sites are encountered, a new record will be created.
- 8.2.2 The report on this phase of work will outline the results of the survey and identify any sites that require further work.

9 FORESHORE CORING

9.1 INTRODUCTION

- 9.1.1 The foreshore coring will identify whether any deposits relating to the presence of past land-surfaces survive within the beach deposits. This data will be used to enhance the archaeological record for deposits that may be impacted during the course of construction.

9.2 FIELDWORK AND ANALYSIS

- 9.2.1 A staged approach will be applied to foreshore coring, as follows:

Stage 1: Planning

- 9.2.2 The foreshore coring programme will be informed by the walkover survey (see Section 8). If there is evidence for the presence of a palaeo-channel running down the beach, cores will be collected at right angles to the line of the channel at intervals of 25-50 metres and at intervals of 50-100 metres along the line of the cable route. If there is no evidence for the presence of a palaeo-channel then cores will only be collected at intervals of 50-100 metres along the line of the cable route.

Stage 2: Coring and Recording

- 9.2.3 Cores will be collected using a suitable coring / borehole method under the supervision of an appropriately qualified archaeologist. Core logs, comprising an archaeological description of the sediments, will be generated for all cores. These core logs will be used to categorise and model the beach deposits along the line of the cable route. The report will outline the results and will indicate whether any Stage 3 work is warranted.

Stage 3: Sampling and Assessment

- 9.2.4 Sub-samples will be taken from selected cores and assessed for palaeo-environmental material (pollen, diatoms and foraminifera). Assessment will comprise laboratory analysis of the samples to a level sufficient to enable the value of the palaeo-environmental material surviving within the cores to be identified. Sub-samples will also be taken and retained at this stage in case radiocarbon dating is required during Stage 4. The Stage 3 report will set out the results of each laboratory assessment together with an outline of the archaeological implications of the combined results, and will indicate whether any Stage 4 work is warranted.

Stage 4: Analysis and Dating

- 9.2.5 Stage 4 comprises full analysis of any pollen, diatoms and/or foraminifera recovered during Stage 3. Stage 4 will be supported by radiocarbon dating of suitable sub-samples. Stage 4 will result in an account of the successive environments within the coring area, a model of environmental change over time, and an outline of the archaeological implications of the analysis.
- 9.2.6 If undertaken, Stage 4 should be reported as part of a final report covering all aspects of the palaeo-topography and prehistory of the area affected by the development. This may also include relevant elements data generated by the desk-based assessment, marine geotechnical coring and terrestrial watching brief.

10 TERRESTRIAL WATCHING BRIEF

10.1 INTRODUCTION

10.1.1 The terrestrial watching brief will identify and record any sites of archaeological interest encountered during the course of construction along the line of the terrestrial cable route.

10.2 FIELDWORK

10.2.1 Vestas-KBR will appoint an appropriately qualified archaeologist to inspect areas of ground disturbance for the presence of archaeological sites, finds and deposits. Accurate position-fixes and written, drawn and photographic records will be generated for all sites.

10.2.2 Where excavations expose sites of potential archaeological importance these sites will be reported to LCCAO and a suitable level of recording will be determined. This may require that contingencies are included within the construction programme for such excavation and recording as is advised by LCCAO.

10.2.3 Details of the watching brief and any further investigations that arise will be compiled as a report. The results will be included within the final archaeological report. The report will be forwarded to BOW for review prior to issue.

11 REPORTING AND ARCHIVING

11.1.1 As stated in each section above, each element of work will give rise to one or more reports. As indicated, on completion of construction, a final archaeological report will also be prepared to synthesise the results of the various investigations. The final archaeological report will address the following themes:

- Maritime sites and finds;
- Palaeo-geography and prehistoric archaeology;
- Terrestrial Roman and post-Roman sites and finds.

11.1.2 If significant archaeological sites and finds are recorded then this final report will be preceded by an assessment report that establishes the value of the recorded archaeology and provides a costing for analysis, publication and archiving (including deposition of archive). Decisions regarding the level of publication required will be taken following consultation with BOW and LCCAO.

12 BIBLIOGRAPHY

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APPENDIX I: ARCHAEOLOGICAL WRECK RECORDING LEVELS

Level	Type	Objective	Sub-level	Character	Scope	Description
1	Assessment	A record sufficient to establish the presence, position and type of site.	1a	Indirect (desk-based)	A basic record based on documentary, cartographic or graphic sources, including photographic (incl. AP), geotechnical and geophysical surveys commissioned for purposes other than archaeology.	Documentary assessment / inventory of a site, compiled at the start of work on a site, and updated as work progresses.
			1b	Direct (field)	A basic record based on field observation, walkover survey, diving inspection etc., including surveys commissioned specifically for archaeological purposes.	Typically a 1-2 dive visit to the site (to assess a geophysical anomaly, etc.).
2	Evaluation	A record that provides sufficient data to establish the extent, character, date and importance of the site.	2a	Non-intrusive	A limited record based on investigations that might include light cleaning, probing and spot sampling, but without bulk removal of plant growth, soil, debris etc.	Typically a 2-4 dive visit to assess the site's archaeological potential, backed up by a sketch plan of the site with some key measurements included.
			2b	Intrusive	A limited record based on investigations including vigorous cleaning, test pits and/or trenches. May also include recovery (following recording) of elements at immediate risk, or disturbed by investigation.	Either an assessment of the buried remains present on a site; the recovery of surface artefacts; or cleaning to inform for example a 2a investigation.
3	In situ	A record that enables an archaeologist who has not seen the site to comprehend its components, layout and sequences.	3a	Diagnostic	A detailed record of selected elements of the site.	The first stage of a full record of the site. This would include a full measured sketch of the site and a database (or equivalent) entry for all surface artefacts.
			3b	Unexcavated	A detailed record of all elements of the site visible without excavation.	Full site plan (i.e. planning frame or equivalent accuracy) with individual object drawings, and full photo record (possibly including a mosaic).

Level	Type	Objective	Sub-level	Character	Scope	Description
			3c	Excavated	A detailed record of all elements of the site exposed by open excavation of part or whole of the site.	This may take the form of full or partial excavation of a site.
4	Removal	A record sufficient to enable analytical reconstruction and/or reinterpretation of the site, its components and its matrix.			A complete record of all elements of the site in the course of dismantling and/or excavation.	
5	Intra-site	A record that places the site in the context of its landscape and other comparable sites.			A complete record of all elements of the site, combined with selective recording of comparable sites and investigation of the surrounding area.	...

APPENDIX II: PROTOCOL FOR REPORTING ARCHAEOLOGICAL FINDS

PURPOSE

This document sets out the procedure for reporting finds of cultural material made during the course of construction work on the Barrow-in-Furness Offshore Wind Farm.

The aim of the Protocol is to reduce any adverse effects of the development upon the historic environment by enabling people working on the project to report their finds in a manner that is convenient and effective.

The archaeological finds made by construction workers are important because they shed light on our predecessor's use of the sea and seabed. The information that such finds bring to light help archaeologists to better understand what happened in times long (and not so long) ago, and therefore to better protect those aspects of our history that should be conserved on behalf of future generations. Archaeological finds from the seabed also enable the public at large to catch a glimpse of the past in an environment that is otherwise unfathomable.

CIRCUMSTANCES OF DISCOVERY

This Protocol addresses finds of archaeological interest made in the following circumstances:

Discoveries on the seabed	An anomaly (such as resistance encountered during cable laying) indicates that an object or structure has been encountered on the seabed.
Discoveries on board	A find of archaeological interest is made on the construction vessel (e.g. caught in equipment recovered to the deck).
Discoveries during seabed inspections	A find of archaeological interest is made during diver or ROV inspection of the seabed.

SCOPE

This Protocol sets out best practice in the reporting of finds of archaeological interest. The principles that are set out in this document are intended to address archaeological mitigation measures identified during the Environmental Assessment phase of the development.

At all times the responsibility for implementing this Protocol rests with company in charge of the development. This applies equally to all vessels involved in the development. The controlling company will also be responsible for drawing third parties attention to the requirements of this Protocol, where their operations are undertaken externally to the main construction contract. In these instances, the company in charge is encouraged to ensure third-party compliance with the requirements of the Protocol, so far as is possible under the specific contractual arrangements in place.

Companies may wish to obtain assistance in implementing this Protocol by employing the services of suitably experienced archaeological contractors/consultants.

MONITORING THIS PROTOCOL

At the end of the construction phase the company in charge shall submit a report on the implementation of the Protocol to English Heritage and the local County Archaeologist. The report shall be prepared by the Nominated Contact, and shall also include an account of areas from which no reports have been made during the course of the development.

BARROW OFFSHORE WIND FARM THE PROTOCOL

INTRODUCTION

The Protocol has been designed to deal with discoveries made on the seabed, onboard and during seabed inspections. A separate, though comparable, series of actions applies in each case.

The Protocol anticipates discoveries being made by Staff, who report to a Site Champion on their vessel, who then reports to a Nominated Contact acting for the Company as a whole. The Nominated Contact for the Company will liaise with English Heritage and the County Archaeologist.

TERMS AND ROLES

NOMINATED CONTACT

Each Company shall nominate one of their staff to act as the single point of contact for all communications regarding archaeology, referred to as the Nominated Contact.

The Nominated Contact will be issued with a copy of this document.

SITE CHAMPIONS

The Nominated Contact will, for each vessel operated by the Company, identify a Site Champion to act as a first point of contact for staff, and to liaise with the Nominated Contact in respect of the operation of the Protocol at that site. On vessels, the Site Champion will normally be the Master, though this need not preclude Companies from identifying an alternative member of staff.

The name and contact details of the Site Champion shall be written on the Poster accompanying this Protocol (see below).

Site Champions will be issued with a Flow Chart setting out the actions to be taken when they are told about a discovery.

ALL STAFF

Companies shall draw the attention of all relevant staff to the potential for archaeological material to be found in the course of construction and inform them of the possible importance of such finds.

The company in charge shall display copies of this Protocol on their construction vessels.

VESSELS MANAGED BY OTHER OPERATORS

There may be instances where third party vessels may be involved in construction. In these cases, the licensee should draw the third party's attention to the requirements of this Protocol, with a request that equivalent provisions for reporting discoveries be made - subject to the specific contractual arrangements in place.

ENGLISH HERITAGE AND THE LOCAL COUNTY ARCHAEOLOGIST

Typically English Heritage and the local County Archaeologist shall be the principal archaeological contacts for each Company's Nominated Contact. They shall:

- Advise on the identification of finds and the character of their seabed locations;
- Advise on material conservation of any recovered finds;
- Liaise with other archaeological authorities and the Receiver of Wreck;
- Advise on proposals to further evaluate any finds;
- Advise on proposals to mitigate the effects of construction upon any finds.

TYPES OF FIND

'Finds' are considered here to mean all forms of artefact that can be found on the seabed. To be an artefact, the thing must have been made, modified, used or transported by people; i.e. their presence on the seabed is 'artificial' or 'cultural' rather than 'natural'. Guidelines on the identification of finds of archaeological interest are presented in Appendix I.

For legal purposes, finds from the seabed fall into two categories. 'Wreck' has a specific legal definition broadly encompassing all sorts of materials that came to be on the seabed as a direct result of once being aboard or part of a vessel. Statutory law relating to 'wreck' is set out principally in the Merchant Shipping Act 1995. The common law relating to wreck is to be found in legal cases and commentaries.

All other finds are referred to here as 'non-wreck'. 'Non-wreck' includes things such as prehistoric flint artefacts that were lost on land that has since become submerged by rising sea level, or artefacts that have been eroded from sites on the shore. The law applicable to 'non-wreck' is largely common law, to be found in legal cases and commentaries.

A third category of find, 'treasure' as defined by the Treasure Act 1996, is not relevant to this Protocol, as the Treasure Act is limited in its application to land above mean low water.

OWNERSHIP

This section is provisional pending confirmation by English Heritage legal team, Receiver of Wreck and/or Crown Estate.

Original owners

Finds that are successfully claimed by their owners continue to belong to that owner, though the owner may be obliged to reward the finder for having found and returned their property.

Unclaimed 'Wreck' in Territorial Waters

Under the Merchant Shipping Act 1995, wreck that is found in Territorial Waters, and is not claimed within a year, is generally owned by the Crown. In some areas – usually close to the shore – the Crown's right of ownership of unclaimed wreck has been awarded to another beneficiary.

Unclaimed 'non-wreck' material in Territorial Waters

On land, archaeological material is considered to belong to the owner of the land in which it was found. The Crown generally owns the seabed within territorial waters, hence unclaimed 'non-wreck' material found within territorial waters is considered to belong to the Crown. In some cases a party other than the Crown owns the seabed, and in such instances unclaimed non-wreck material will be considered to belong to that party.

DISCOVERIES ON THE SEABED

TELL THE SITE CHAMPION

If an anomaly indicates that an object or structure has been encountered on the seabed, the Officer on Watch shall inform the Master, who will normally be the Site Champion. If possible work on that part of the seabed will cease until archaeological advice has been sought.

The Officer on Watch will arrange for gear to be examined as soon as possible to see if any archaeological material is trapped within it, and will inform the Master accordingly.

ACTIONS BY THE MASTER (SITE CHAMPION)

The Master shall note the occurrence as soon as possible in the vessel's log together with the time and exact vessel position. Where possible, the log entry should include a close approximation of the original position of the anomaly on the seabed. Additionally, the area shall be marked on navigational software.

The Master shall compile a preliminary record of the occurrence, as follows:

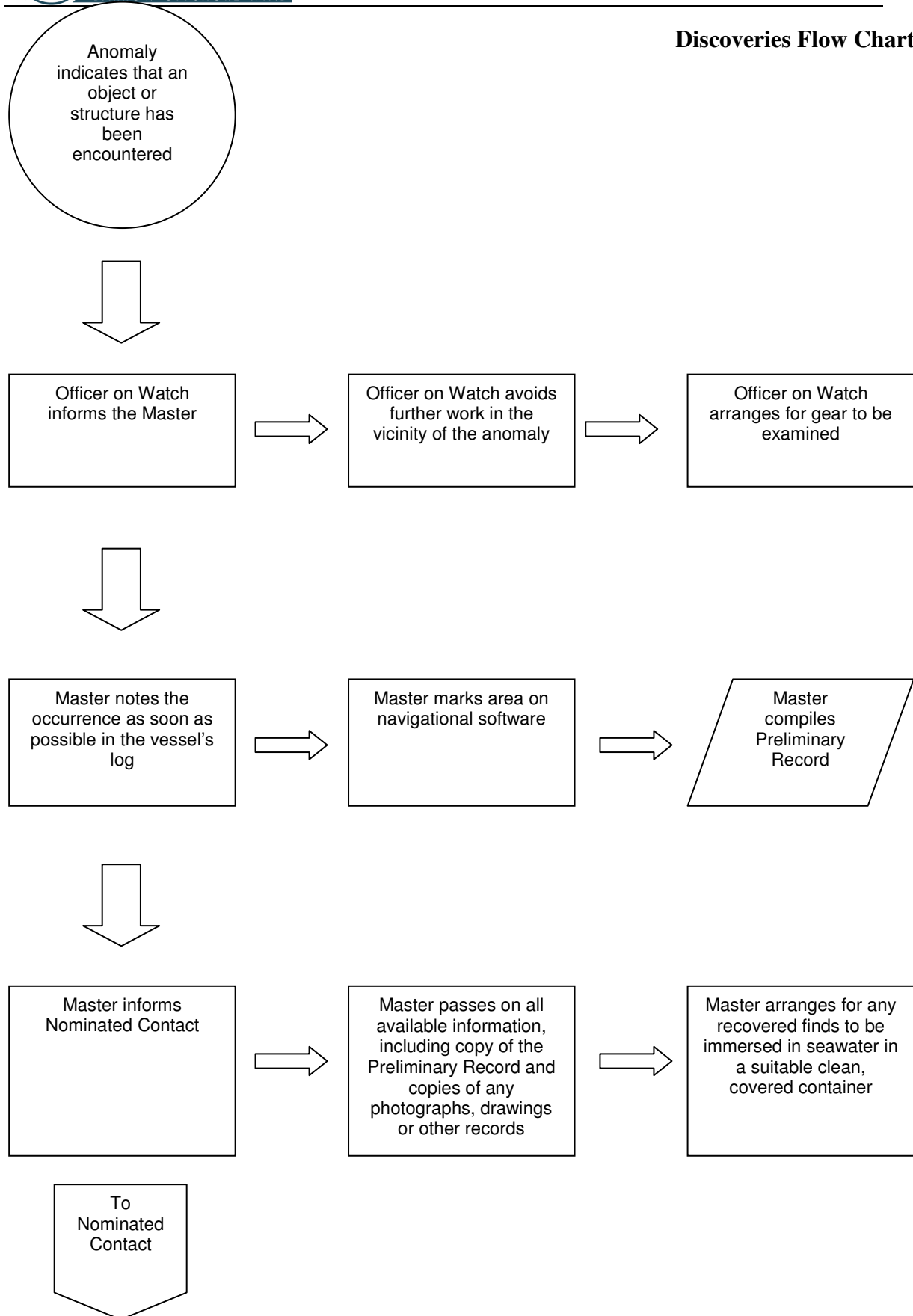
Discoveries on the Seabed: Preliminary Record	
Vessel Name:	
Working Area:	
Date:	
Time of compiling information:	
Name of compiler (Master/Site Champion):	
Name of Officer on Watch:	
Name of finder (if different to above):	
Time at which anomaly encountered:	
Vessel position at time when anomaly was encountered:	
Original position of the anomaly on the seabed:	
Notes on likely accuracy of original position stated above:	
Description of the anomaly:	
Apparent extent of the anomaly:	
Details of examination of gear:	
Details of any find(s) recovered:	
Details of photographs taken of the find(s):	
Details of any drawings or other records made of the find(s):	
Details of treatment given to any recovered find(s):	
Any other notes:	
Date and time at which Nominated Contact informed:	

The Master shall inform the Nominated Contact of the occurrence as soon as possible and pass on all available information, including a copy of the Preliminary Record and copies of any photographs, drawings or other records that have been made.

If any finds have been recovered, the Master shall arrange for them to be immersed in seawater in a suitable clean container, which should be covered. Any rust, concretion or marine growth should not be removed.

If no archaeological material has been recovered, then no additional actions are required of staff on the vessel.

Discoveries Flow Chart



ACTIONS BY THE NOMINATED CONTACT

INFORM ENGLISH HERITAGE AND COUNTY ARCHAEOLOGIST

Once informed of a find by a Site Champion, the Nominated Contact shall inform English Heritage and the County Archaeologist as soon as possible.

The Nominated Contact will confirm with the Site Champion that all the details set out in the Preliminary Record are comprehensive and correct. The Nominated Contact shall pass on to English Heritage and the County Archaeologist all available information relating to the circumstances of the occurrence, including a copy of the Preliminary Record and copies of any photographs, drawings or other records that have been made.

English Heritage should be contacted through its Maritime Team, as follows:

English Heritage Maritime Team

Fort Cumberland
Eastney
PORTSMOUTH
PO4 9LD

Telephone: 023 9285 6735
Fax: 023 9285 6701
Email: maritime@english-heritage.org.uk

The County Archaeologist should be contacted as follows:

Lancashire County Archaeological Service (Peter Iles)

Lancashire county Council
Environment Directorate
PO Box 9
Guild House
Cross Street
Preston
PR1 8RD

Telephone: 01772 531 550
Fax: 01772 263 423
Email: Peter.iles@env.lancscc.gov.uk

ADVISE OTHER TEAMS/VESSELS WORKING ON THE SITE

Where relevant, the Nominated Contact shall inform other vessels working in the area from which the find is thought to have been recovered. Such other vessels shall be advised by the Nominated Contact to keep a particular watch for anomalies and finds.

IMPLEMENT TEMPORARY EXCLUSION ZONE

Where the position of an anomaly or find is reasonably certain, the Nominated Contact shall implement a temporary exclusion zone to ensure all work in the area of the find is suspended until archaeological advice has been obtained.

Where other Companies are working in the same area the Nominated Contact of the Company making the find will inform the Nominated Contacts in the other Companies that a temporary exclusion zones has been introduced.

IF ANY FINDS HAVE BEEN RECOVERED...

The Nominated Contact shall make any recovered finds available for inspection by English Heritage and/or the County Archaeologist.

If the find is, or appears to be 'wreck', the Nominated Contact shall as soon as possible give notice that a find has been recovered to the Receiver of Wreck in accordance with Section 236(1) of the Merchant Shipping Act 1995. **This is a legal requirement.**

The Receiver of Wreck can be contacted as follows:

Receiver of Wreck (Sophia Exelby)

Bay 1/05

Spring Place

105 Commercial Road

SOUTHAMPTON

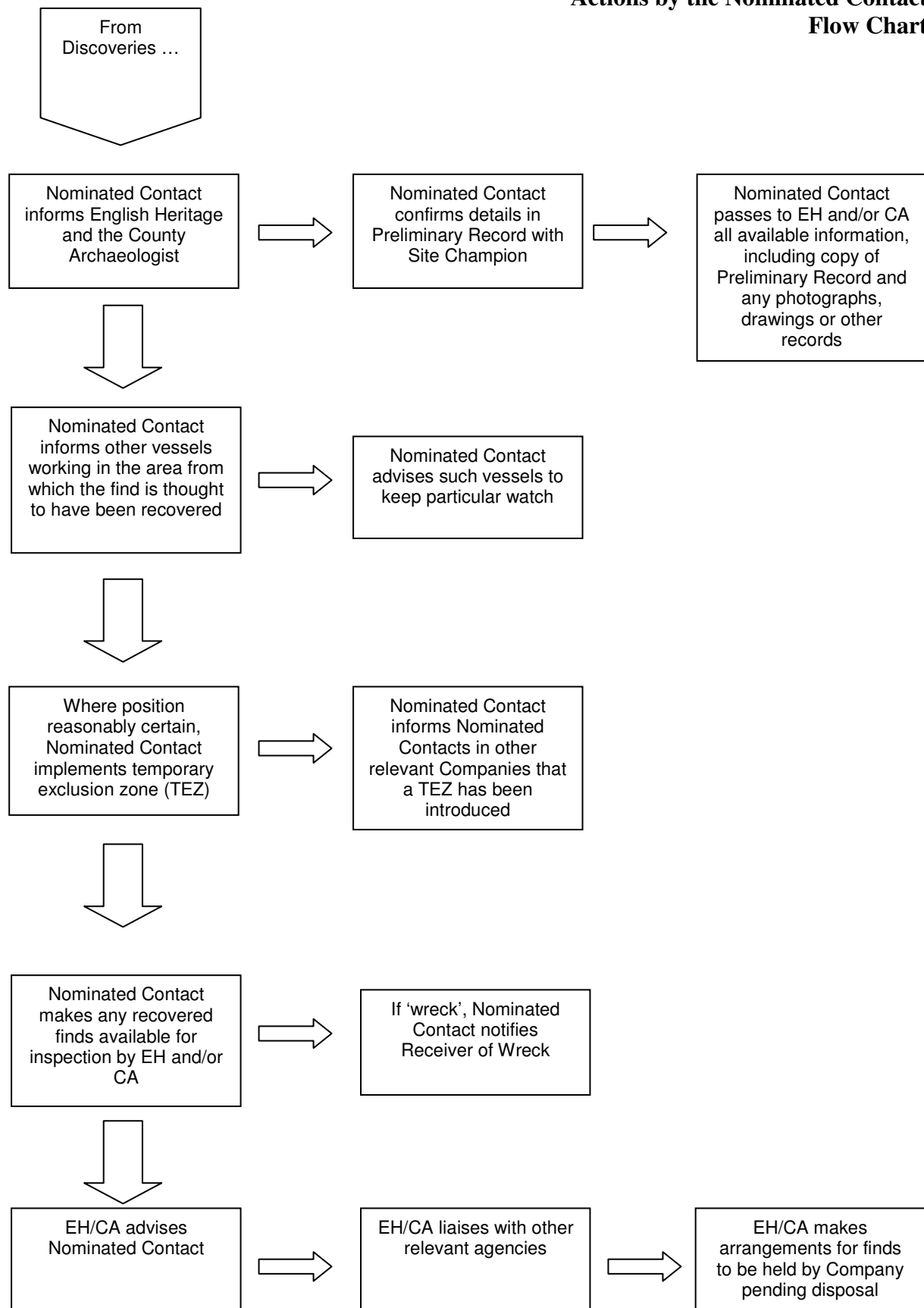
SO15 1EG

Telephone: 023 8032 9474

Fax: 023 8032 9477

Email: sexelby@mcga.gov.uk

Actions by the Nominated Contact Flow Chart



GUIDELINES FOR IDENTIFYING FINDS OF ARCHAEOLOGICAL INTEREST

RUBBER, PLASTIC ETC.

In most cases, rubber, plastic, bakelite and similar modern materials are not of archaeological interest and can be disregarded.

One exception is where such materials are found in the same area as aluminium objects and structures, which may indicate aircraft wreckage from World War Two. Such material should be reported.

IRON AND STEEL

The potential range and date of iron and steel objects is so wide that it is difficult to provide general guidance. In broad terms, iron and steel objects which are covered by a thick amorphous concrete-like coating ('concretion') are likely to be of archaeological interest and should be reported.

Pieces of metal sheet and structure may indicate a wreck and should be reported.

A Munitions Code of Practice applies in respect of ordnance (cannonballs, bullets, shells) which should take precedence over archaeological requirements. However, discoveries of ordnance may be of archaeological interest, and they should be reported.

OTHER METALS

Items made of thin, tinned or painted metal sheet are unlikely to be of archaeological interest.

Aluminium objects may indicate aircraft wreckage from World War Two, especially if two or more pieces of aluminium are fixed together by rivets. All occurrences should be reported.

Copper and copper alloy (bronze, brass) objects might indicate a wreck, or they may be very old. All occurrences should be reported.

Precious metal objects and coins are definitely of archaeological interest because they are relatively easy to date. All occurrences should be reported.

BONE

Occasional discoveries of animal bone, teeth and tusks are of archaeological interest because they may date to periods when the seabed formed dry land, and should be reported. Such bones, teeth, tusks etc. may have signs of damage, breaking or cutting that can be directly attributed to human activity.

Large quantities of animal bone may indicate a wreck (the remains of cargo or provisions) and should be reported.

Human bone is definitely of archaeological interest, and is also subject to special legal requirements under the Burial Act 1857. Any suspected human bone should be reported, and treated with discretion and respect.

Objects made out of bone – such as combs, harpoon points or decorative items – can be very old and are definitely of archaeological interest. All occurrences should be reported.

WOOD

Light coloured wood, or wood that floats easily, is probably modern and is unlikely to be of archaeological interest.

‘Roundwood’ with bark – such as branches – is unlikely to be of archaeological interest. However, roundwood that has clearly been shaped or made into a point should be reported.

Pieces of wood that have been shaped or jointed may be of archaeological interest, especially if fixed with wooden pegs, bolts or nails. All occurrences should be reported.

Objects made out of dark, waterlogged wood – such as bowls, handles, shafts and so on – can be very old and are definitely of archaeological interest. All occurrences should be reported.

STONE

Small to medium size stones that are shaped, polished and/or pierced may be prehistoric axes. All occurrences should be reported.

Objects such as axe heads or knife blades made from flint are of prehistoric date and should be reported.

Large blocks of stone that have been pierced or shaped may have been used as anchors or weights for fishing nets. All occurrences should be reported.

The recovery of numerous stones may indicate the ballast mound of a wreck, or a navigational cairn. All occurrences should be reported.

POTTERY

Any fragment of pottery is potentially of interest, especially if it is a large fragment. Items which look like modern crockery can be discarded, but if the item has an unusual shape, glaze or fabric it should be reported.

BRICK

Bricks with modern proportions and v-shaped hollows (‘frogs’) are of no archaeological interest. Unfrogged, ‘small’, ‘thin’ or otherwise unusual bricks may date back to Medieval or even Roman times and should be reported.