marinescotland

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The Scottish Government

Marine Benthic Sampling and Instrument Deployment Projects in the Territorial Sea and UK Controlled Waters Adjacent to Scotland

Marine (Scotland) Act 2010

Marine and Coastal Access Act 2009

IMPORTANT: Before completing this form, please read these notes carefully.

The following numbered paragraphs correspond to the questions on the application form and are intended to assist applicants in completing the form. These explanatory notes are specific to this application and so applicants are advised to read these in conjunction with the General Guidance document. If further clarification is needed please contact Marine Scotland Licensing Operations Team (MS-LOT) on 01224 295579 or email:

MS.MarineLicensing@scotland.gsi.gov.uk

Please refer to the General Guidance for information regarding payment methods.

NOTE: Should sediment removal and/or instrument deployments be part of a wider research project involving geophysical surveys, a completed Notification of Site Survey form must also be submitted to Marine Scotland Licensing Operations Team to establish any requirement for an European Protected Species licence.

Explanatory Notes

1. Applicant

The person, company or organisation making the application that will be named as the licensee on any licence issued.

2. Agent

Any person, company or organisation acting under contract (or other agreement) on behalf of any party listed in the answer to question 1, and having responsibility for the control, management or physical removal or deposit of materials anywhere below the tidal limit of the mean high water springs (MHWS) (e.g. a consultancy company submitting the application or a contractor who will be carrying out the works.)

3. Duration

Provide details of the proposed commencement and completion dates of the research. The start date will not normally be backdated, except in exceptional circumstances, since to commence a works for which a licence has not been obtained may constitute an offence resulting in appropriate legal action. A licence is normally valid for 1 calendar year or the duration of the project (whichever is longer). After this period, it will be necessary for licence holders to re-apply for a further licence to continue any ongoing work. Although Marine Scotland Licensing Operations Team (MS-LOT) will aim to write to licence holders one month before the expiry date of a licence, it is the licensee's responsibility to apply for any further licences or an extension prior to the expiry of the initial licence.

4. Cost of the Proposed Project

This estimate should only cover work taking place below the tidal level of MHWS and should take into consideration the cost of materials, labour fees etc.

5. Type of Application

If applying for a renewal or amendment please enclose a copy of the original consent with this application or provide the consent reference number, and provide details of the amendments to be made to the consent.

6. Type of Research

Best describe the type of work proposed. Where the project involves a number of elements, please complete all appropriate boxes.

Certain types of surveys such as geophysical and geotechnical surveys (e.g. infrastructure surveys and pipeline/cable route surveys undertaken using grabs, corers, side-scan sonar, ROVs / AUVs etc) may require a Notification of Site Survey (NSS) form to be completed and submitted to Marine Scotland. This gives the developer an opportunity to receive comments regarding potential impacts of the work from stakeholders and interested parties. Further information regarding scientific studies can be obtained by contacting MS-LOT (01224 295579; MS.MarineLicensing@scotland.gsi.gov.uk).

7. Research Method Statement

For benthic surveys/sediment removal, give an estimate of the number of grabs/cores/trial pits to be undertaken. This is only to give MS-LOT an indication of the scale of the survey and will not be detailed on the licence.

For deployment of equipment, include the period of time it will be in place, it's purpose and expected position (e.g. sea bed or water column).

If appropriate, proposed measures to ensure the marine environment is adequately safeguarded during the survey should also be described (i.e. mitigation measures), as should those taken to minimise any interference with other uses of the sea or foreshore.

In the event that MS-LOT must undertake a wider consultation on your application this description may be used as a basis for informing other bodies as to the nature of the proposed work.

8. Details of Equipment

Depending on the type of research being undertaken, please include the details below:

Research involving towed equipment:
- No of cables
- Length of towed equipment, including tail-buoys (m)
- Width of towed equipment (m)
- Depth of towed equipment (m)

Research involving deployment of buoys:
- Type
- Size

Research involving deposits on the sea bed:
- Description
- Number of items being deposited
- Dimensions
- Whether they will be permanent or temporary deposits

Research involving sediment removal:
- Type of grab/coring equipment
- Whether any drilling fluids/mud are required
- Name and expected quantities of the fluids to be used

9. Location

Include a list of the National Grid References (NGR) or latitude and longitude co-ordinates of the boundary points of the proposed project. In a few cases it may only be practicable to supply NGR or latitude and longitude co-ordinates for the start and end points.

NGR: Should consist of two letters followed by 10 digits (e.g. TL6320031700) where the first 5 digits are the eastings (read from the south west corner of an Ordnance Survey map) and the last 5 digits are northings.

Latitude & longitude: For positions read from charts of 1:25,000 scale or smaller, the format should be, e.g. 55°55.55'N 2°22.22'W. The decimal point specifies that decimals of minutes are used and the datum is stated explicitly. If seconds are used then the datum should be explicitly marked, e.g. 55°55'44''N 2°22'11''W. For positions read from larger scale charts, e.g. 1:10,000, three decimal places of minutes should be used, e.g. 55°55.444'N 2°22.222'W.

It is important that the correct positions are included with this application, as any errors may result in the application being refused or delayed.

To supplement the information given in section 9, the following must be provided with the completed application form:

- a suitably scaled extract of an Ordnance Survey Map (1:2,500 scale but not more than 1:10,000) or Admiralty Chart which should be marked to indicate:
    - the full extent of the works in relation to the surrounding area;
    - any adjacent Special Area of Conservation (SAC), Special Protection Area (SPA), Site of Special Scientific Interest (SSSI), Ramsar or similar conservation area boundary.

These drawings/plans may be copied to others as part of the MS-LOT consultation process. If they are subject to copyright, **it is the responsibility of the applicant to obtain necessary approvals to reproduce the documents and to submit suitably annotated copies with the application.**

10. Details of Vessels

The table must be completed as the information contained within it is important in the decision making process. Please note a licence cannot be issued without these details.

11. Marine Mammal Observer(s)

This section will not be applicable to all surveys.

12. Passive Acoustic Monitoring

This section will not be applicable to all surveys.

13. Consultation

Indicate all contacts made and whether any bodies require to issue a consent for the works.

Consenting Authorities have a duty to ensure marine projects will not have a significant adverse environmental impact, particularly upon designated conservation areas (e.g. SSSI, SAC, SPA, Ramsar sites etc). All details of consultations with conservation bodies (e.g. SNH) should be given, and if appropriate, copies of any correspondence should be submitted with your application.

Similarly, Consenting Authorities also have a duty to ensure marine projects will not have a significant adverse impact on historical monuments and protected wrecks. All details of consultations with Historic Scotland should be given, and if appropriate, copies of any correspondence should be submitted with your application.
For surveys involving sediment removal, it should be investigated as to whether any sites in the locality are designated bathing water sites and if so, ideally all physical works should be done outwith the Bathing Water Season (1st June to 15th September). Further guidance on the Bathing Waters Directive (2006/7/EC) can be obtained from www.sepa.org.uk/data/bathingwaters.

In addition, guidance can be obtained from www.foodstandards.gov.uk/ with regards to the Shellfish Waters Directive (2006/113/EC) which has parameters set to protect the water quality in which edible shellfish are grown.

14. Designated Wrecks and/or Conservation Areas

Indicate whether the proposed project is located within or close to the boundaries of a conservation area such as a SAC, SPA, SSSI or Ramsar site etc.

15. Environmental Assessment

Under the Marine Works (EIA) Regulations 2007, there may be a requirement for certain projects to undergo an Environmental Impact Assessment (EIA) and produce an Environmental Statement (ES). If an EIA/ES is deemed necessary, MS-LOT cannot issue a marine Licence until the outcome of the EIA/ES has been determined. Please indicate whether any EIA has been carried out in respect of the proposed project, either under your own powers or as required by another authority. If such an assessment has been undertaken, please indicate if a copy has been provided with your application. If the statement/assessment has been completed but is not available, please provide an explanation in the space provided.

Other Considerations

Applicants should also be aware of the need to pay due regard to coastal and marine archaeological matters and attention is drawn to Historic Scotland's Operational Policy Paper HP6, "Conserving the Underwater Heritage".

Additionally, the details of any surveys involving trawling should be provided to one of the following contacts at least 14 days before the proposed start date:

Norman Preston or Gillian D Smith

Fisheries Division
Area 1B South
Victoria Quay
Edinburgh
EH6 6QQ

Telephone: 0131 244 6188 / 6466

E-mail: norman.preston@scotland.gsi.gov.uk or gillian.d.smith@scotland.gsi.gov.uk

Please ensure that you have:

- completed **all** applicable sections of the application form;
- signed and dated the declaration;
- provided the correct relevant documents, charts, and continuation sheets (where necessary); and
- enclosed the correct payment (together with the remittance slip) or paid by means of BACS (if appropriate).

Otherwise your application may be delayed or returned to you.

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Marine (Scotland) Act 2010

Marine and Coastal Access Act 2009

It is the responsibility of the applicant to obtain any other consents or authorisations that may be required.

Under Part 4, Section 54 of the Marine (Scotland) Act 2010 and Section 101 of the Marine and Coastal Access Act 2009 all information contained within or provided in support of this application will be placed on the Public Register. There is no national security grounds for application information not going on the Register under the 2010 Act. Under the 2009 Act, application information goes on the Register unless the Secretary of State determines that it's disclosure in the Register would be contrary to the interests of national security.

Public Register

Is there any information contained within or provided in support of this application that you consider should not be included on the Public Register on the grounds that its disclosure

(a) would be contrary to the interests of national security; or YES ☐ NO ✓

(b) would adversely affect the confidentiality of commercial or industrial information where such confidentiality is provided by law to protect a legitimate commercial interest? YES ☐ NO ✓

If **YES**, to either (a) or (b), please provide full justification as to why all or part of the information you have provided should be withheld.

1. Applicant Details

Title	Redacted	Initials	Redacted	Surname	Redacted
Trading Title (if appropriate)	**University of Aberdeen**				
Address	**Lighthouse Field Station, George Street, Cromarty, Ross-shire, IV11 8YL**				
Name of contact (if different)	Redacted				
Position within Company (if appropriate)	**Fieldwork Officer**				
Telephone No. (inc. dialing code)	Redacted			Fax No. (inc. dialing code)	**None**
Company Registration No.	**Charity number SCO13683**	Email	Redacted		

2. Agent Details (if any)

Title	Redacted	Initials	Redacted	Surname	Redacted
Trading Title (if appropriate)	**Moray First Marine Ltd.**				
Address	**Wester Oldtown, Roseisle Elgin, Moray IV30 5YD**				
Name of contact (if different)					
Position within Company (if appropriate)	**Owner / Director**				
Telephone No. (inc. dialing code)	Redacted			Fax No. (inc. dialing code)	**None**
Company Registration No.	**251028**	Email	Redacted		

3. Duration of Project

Start date	**01 October 2018**	Expected completion date	**30 September 2021**

4. Cost of the Proposed Project

Estimated gross cost of the works proposed seawards of the tidal limit of MHWS

£10,000

5. Application Type

Is this a new application or a renewal/amendment of an existing consent? (please tick)

☐ New application ✓ Renewal/Amendment

6. Type of Research

Instrument Deployments

Scientific Buoys (e.g. waveriders; wave powered)	☐
Marker Buoys	✓
Profiling instruments (e.g. ACDPS)	☐
Remotely Operated Vehicle (ROV)	✓
Other (please specify)	✓

Seabed and buoy mounted acoustic recording equipment for measuring noise and detecting cetaceans

Mini ROV may be used to facilitate recovery of moorings

Benthic Sampling/Sediment Removal	**None**
Mechanical bucket or shovel	☐
Grabbing - surface sediments	☐
Coring - to depths of one meter	☐
Coring - depths of 3 meters or more	☐
Boreholes	☐
Trial Pits	☐
Other (please specify)	☐

No benthic sampling

7. Research Method Statement

Provide a description of the work to be undertaken (see guidance notes)

This application is a request for the extension of the licence period for 12 of the 68 mooring locations currently licensed under Marine Licence 05594/15/0. This application requests the extension of the licence period to 30 September 2021.

Additionally, this application introduces a further 7 sites which are not currently included in Marine Licence 05594/15/0.

The application, therefore, is for 19 locations.

The aim of the studies for which these moorings will be deployed is to further investigate the underwater sound scape created by the ongoing windfarm development works at the Beatrice Offshore Windfarm (BOWL) site, and the impending (2019) Moray East Offshore Windfarm (MEOW) development. The intention is to relate this to potential impacts on the resident marine mammal populations (both within and outwith the Moray Firth Special Area of Conservation). The work will involve deployment of passive acoustic data-loggers / recorders on sub-surface or surface marked moorings at 19 locations in the Cromarty and Moray Firths. See diagrams and chartlets later in this document for positions and mooring configuration. Work at the sites listed in this application is anticipated into 2021. Note: not all of the proposed sites will be used throughout the year.

For operational reasons, up to 15 of these moorings may be deployed with no surface mark. In these cases the mooring will extend no more than three metres vertically from the sea bed. The twelve moorings located off the Moray Firth Coast between Burghead and the River Spey will, if surface marked, be fitted with a 12 foot aluminium dhan pole with flag and RADAR reflector.

One mooring (229, in the Cromarty Firth) will be equipped with a yellow special mark buoy supporting passive acoustic monitoring devices. See specifications of this device in the appended material.

8. Details of Equipment

Details of Moorings:

Four types of mooring design are proposed; three with surface marker, the other one type being subsurface only. The moorings are temporary and will be removed in their entirety at the end of the study.

Type 1.

Moorings with surface marker. Locations 01, 02, 03, and 04 (see attached figures for details):

Construction: 100kg chain link ballast weight, plus 2m of 16mm long link chain attached to ground line and additional 20-50kg chain link ballast weight.

Riser: Single riser, 14mm "seasteel" polypropylene rope - weighted to prevent unnecessary rope at the sea surface. 8" subsurface float, approx 3-5m from seabed. Passive acoustic recording equipment attached to riser 1.5 to 3m from the seabed.

Surface marker: 1 x NB40 Orange/red buoy. Locations 03 & 04 may additionally be marked with 12' dhan c/w radar reflector and flag.

Deployment method: Lowered to seabed.

Type 2.

Moorings with surface marker. May optionally be used at locations 64, 65, 66, 67, 223, 224, 225, 226, 227 & 228:

Construction: 150kg chain link ballast weight, plus 2m of 16mm long link chain.

Riser: Single riser, 14mm "seasteel" polypropylene rope - weighted to prevent unnecessary rope at the sea surface. 8" subsurface float, approx 3-5m from seabed. Passive acoustic recording equipment attached to riser 1.5 to 3m from the seabed.

Surface marker: 1 x NB40 Orange/red buoy and 12' dhan c/w radar reflector and flag.

Deployment method: Lowered to seabed.

Type 3.

Subsurface moorings. May optionally be used at locations 01, 64, 65, 66, 67, 125, 126, 138, 141, 223, 224, 225, 226, 227 & 228:

Construction: 1x50kg chain link clump weight, plus 0.5m of 16mm long link self-colour chain

Terminated riser (attached to the 50kg weight: single riser, 12mm "seasteel" polypropylene rope with one or two 8" (or alternatively one 11") subsurface floats. Maximum vertical extent from the seabed 3m. Sonardyne LRT acoustic release and passive acoustic recording equipment attached to riser 1m and 2m from the seabed respectively. The acoustic release is optional and, moreover, will not be used in areas where it is deemed not suitable (locations 01, 125, 126, 138 & 141) in which case the moorings will be reduced to 2m vertical extent with the recording equipment attached at 1m from the seabed.

Surface markers: none.

Deployment method: Lowered to seabed

Type 4.

Surface mooring (One mooring, 229):

Construction: 1x650kg iron clump weight, plus 5m of 38mm ground chain.

Riser: Single riser, 40mm "seasteel" rope. 1x140kg ballast weight hanging 4m below buoy. Passive acoustic recording equipment attached to surface buoy.

Surface marker: 1 x Eason 1250 yellow special mark buoy, complete with day shape and light (see diagrams in appended material). Light characteristic Fl.Y(5)10s3M.

Deployment method: Clump lowered to seabed.

NB: THE NUMBER OF EACH TYPE OF MOORING MAY BE ADJUSTED DURING THE

WORKS FOR OPERATIONAL REASONS.

9. Location

Areas	Name of Area	Co-ordinates	Approx. Survey Area (km^2)	Distance from Nearest Coastline
A	**Cromarty Firth, and Moray Firth, Scotland.**	**See later in this document for positions.**	**n/a**	**Closest location to shore (MHWS) = location 01 (0.1nm).**
B				
C				
D				
E				

If necessary please continue on a separate sheet and tick this box ✓

10. Details of Vessel(s)

No of vessels involved:	**Two (only one vessel used at any one time)**
Vessel one.	
Name:	**MV Coral Wind**
Type of Vessel:	**14m, MCA coded workboat, catamaran**

Operator Name & Address	**Moray First Marine Ltd., Wester Oldtown, Roseisle Elgin, Moray IV30 5YD**
Vessel Role (e.g. source, guard, fisheries liaison)	**Mooring deployment / recovery.**
Will the vessel be stationery for extended periods of time? (If yes, indicate how approximately how long for.)	**Stationary (not under way) periods typically 5 to 30 minutes, max 60 minutes.**
Will Dynamic Global Positioning System (DGPS) be used?	**No dynamic positioning.**
Does the vessel have cowled/ducted propellers?	**Props not cowled, but shielded by keel, hull and rudderpost.**
Vessel two.	
Name:	**MV Waterfall**
Type of Vessel:	**16m, MCA coded workboat, catamaran**
Operator Name & Address	**Moray First Marine Ltd., Wester Oldtown, Roseisle Elgin, Moray IV30 5YD**
Vessel Role (e.g. source, guard, fisheries liaison)	**Mooring deployment / recovery.**
Will the vessel be stationery for extended periods of time? (If yes, indicate how approximately how long for.)	**Stationary (not under way) periods typically 5 to 30 minutes, max 60 minutes.**
Will Dynamic Global Positioning System (DGPS) be used?	**No dynamic positioning.**
Does the vessel have cowled/ducted propellers?	**Props not cowled, but shielded by keel, hull and rudderpost.**

If necessary please continue on a separate sheet and tick this box ☐

11. Marine Mammal Observer(s)

Will Marine Mammal Observer(s) be present during the survey work? YES ☐ NO ✓
If **YES**, how many will there be and which organisation will provide them?

12. Passive Acoustic Monitoring

Has Passive Acoustic Monitoring (PAM) been arranged? YES ☐ NO ✓
If **YES**, which organisation will provide the PAM?

The work undertaken as part of this licence application is to deploy autonomous PAM devices for the purpose of measuring the impact of anthropogenic noise.

13. Consultation

Interested Parties/Regulators	Contacted?	Consent Required?	Reference No.
Nature Conservation Bodies	**No**		
Historic Scotland	**No**		
Land Owner (e.g. The Crown Estate)	**No**		
Local Port or Harbour Authority	**Yes**		
Fishing Organisations	**No**		
Scottish Environment Protection Agency (SEPA)	**No**		
Local Planning Authority (LPA)	**No**		
Others (NLB, RYA).	**No**		

If discussions with conservation bodies (either nature or historic) have been undertaken, provide details below:

Those moorings locations in this application which are currently licenced under 05594/15/0 have previously been discussed with the Cromarty Firth Port Authority.

If discussions with fisheries organisations have been undertaken, has a Fisheries Liaison Officer been arranged? YES ☐ NO ✓

If **YES**, how many will there be and which organisation will provide them?

FLO has not been appointed. However, previous mooring designs and locations were developed in consultation with the Scottish Fishermens' Federation.

14. Designated Wrecks and/or Conservation Areas

Are any parts of the proposed survey located within the boundaries of a designated area?

YES ✓ NO ☐

If yes, please specify the type of designation, identify the specific site(s) and indicate approximate distance of the survey from the boundary of the nearest area(s)

Almost 70% of the proposed works are within the Moray Firth Special Area of Conservation (SAC). The work, in part, aims to study the impact of Moray Firth windfarm developments, and other events, on animals for which the SAC has been designated.

15. Environmental Assessment

Has an Environmental Impact Assessment (EIA)/Environmental Statement (ES) been undertaken to support any application in respect of the project, your own statutory powers (if applicable) or any other reason?

YES ☐ NO ✓

If **YES**, is a copy of the EIA/ES included with this application? YES ☐ NO ☐

If the EIA/ES has been undertaken but has not been included with this application, please provide an explanation below.

Declaration

I declare to the best of my knowledge and belief that the information given in this form and related papers is true.

WARNING

It is an offence under the Act under which this application is made to fail to disclose information or to provide false or misleading information.

Signature	Redacted	Date	**21 Sept 2018**
Name in BLOCK LETTERS	Redacted		
Position within company (if appropriate)	**Professor, School of Biological Sciences**		

Please check carefully the information you have given and that all the enclosures (including copies) have been included.

Application Check List

• Completed, signed application form **x 1**	✓
• Project drawings **x 1** (or 7 paper copies if larger than A3 size and no electronic version is available)	✓
• Maps/Charts **x 1**	✓
• Additional information, e.g. photographs, Environmental Impact Assessment etc (if required) **x 1**	✓

Marine Laboratory, PO Box 101, 375 Victoria Road,
Aberdeen AB11 9DB
www.scotland.gov.uk/marinescotland

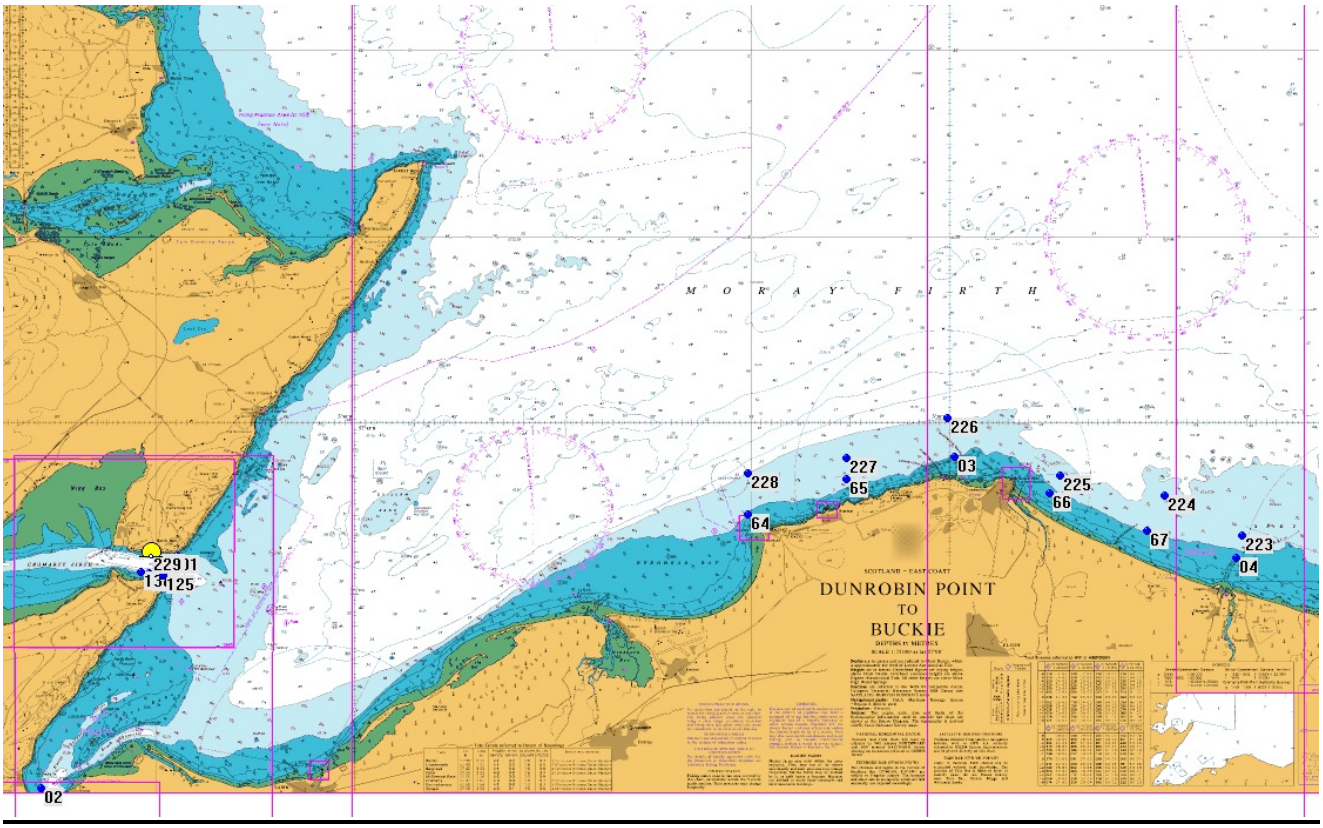
University of Aberdeen. Marine licence application, 2018.
Mooring locations. Datum: WGS84.

Note: it is anticipated that not all locations will be in use throughout the year.

Locations in bold text are those which are currently licenced under 05594/15/0.

	Lat	Long	Surface marker	Charted depth (m)
01	**57° 41.421'N**	**003° 58.951'W**	**None, or NB40/50 round float**	**8**
02	**57° 35.118'N**	**004° 05.875'W**	**NB40/50 round float**	**9**
03	**57° 44.073'N**	**003° 19.776'W**	**NB40/50 round float & dhan**	**10**
04	**57° 41.357'N**	**003° 05.547'W**	**NB40/50 round float & dhan**	**7**
64	**57° 42.528'N**	**003° 30.163'W**	**None, or NB40/50 round float & dhan**	**9**
65	**57° 43.485'N**	**003° 25.188'W**	**None, or NB40/50 round float & dhan**	**13**
66	**57° 43.082'N**	**003° 14.977'W**	**None, or NB40/50 round float & dhan**	**8**
67	**57° 42.069'N**	**003° 10.026'W**	**None, or NB40/50 round float & dhan**	**11**
125	**57° 40.866'N**	**003° 59.667'W**	**None, or NB40/50 round float**	**7**
126	**57° 40.925'N**	**004° 00.391'W**	**None, or NB40/50 round float**	**5**
138	**57° 40.964'N**	**004° 00.830'W**	**None, or NB40/50 round float**	**10**
141	**57° 41.430'N**	**004° 00.146'W**	**None, or NB40/50 round float**	**10**
223	57° 41.940'N	003° 05.280'W	None, or NB40/50 round float & dhan	12
224	57° 43.020'N	003° 09.180'W	None, or NB40/50 round float & dhan	18
225	57° 43.560'N	003° 14.460'W	None, or NB40/50 round float & dhan	15
226	57° 45.120'N	003° 20.100'W	None, or NB40/50 round float & dhan	21
227	57° 44.040'N	003° 25.200'W	None, or NB40/50 round float & dhan	16
228	57° 43.620'N	003° 30.180'W	None, or NB40/50 round float & dhan	20
229	57° 41.403'N	004° 00.356'W	Yellow special mark. Light sequence Fl. Y(5) 10s.	25

University of Aberdeen, marine licence application, 2018.
Overview of mooring locations.
Datum: WGS84.



Moorings may be surface marked, or may be entirely subsurface.

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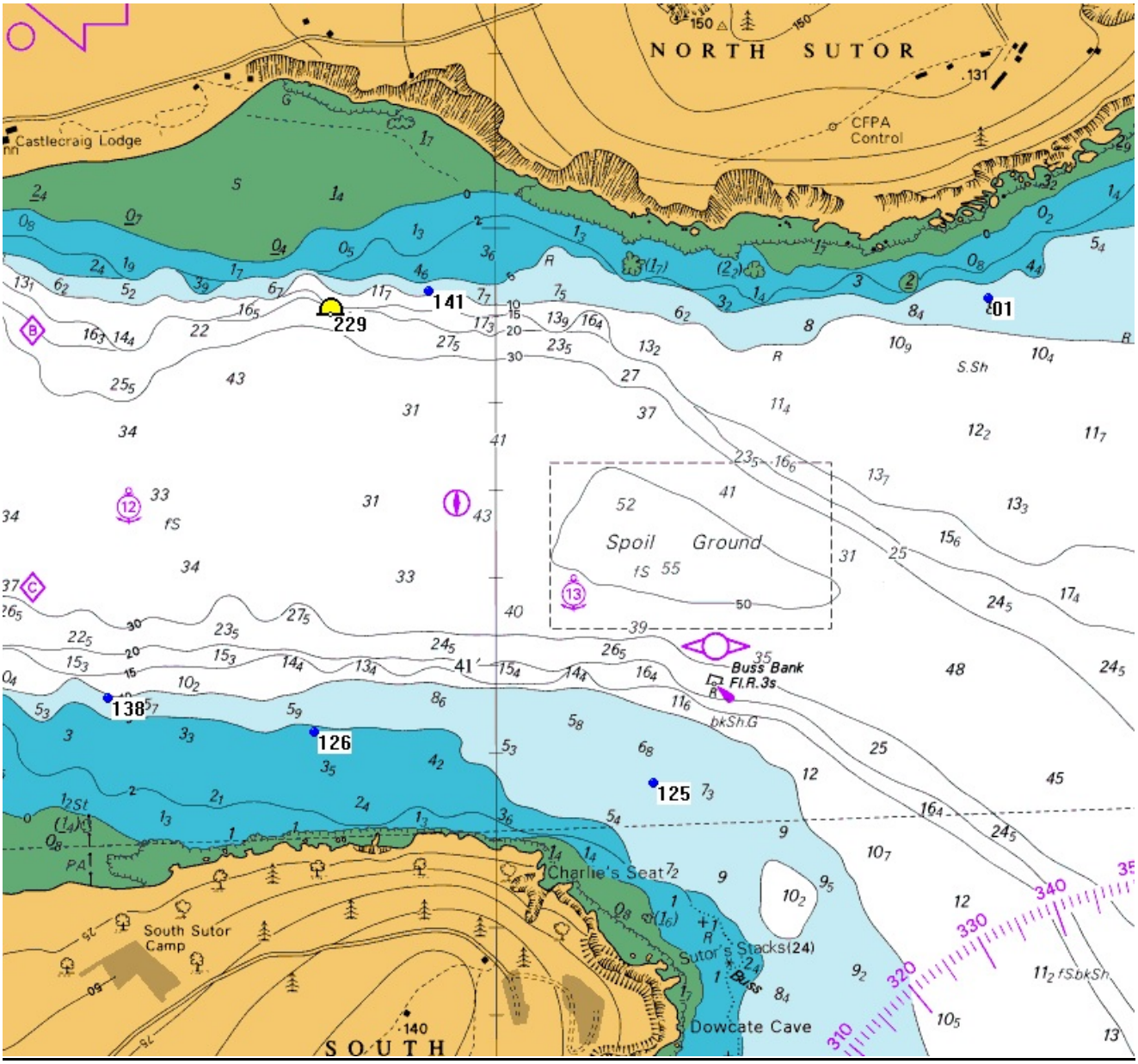
University of Aberdeen, marine licence application, 2018.
Detail of Cromarty Firth locations.
Datum: WGS84.



Except for location 229, moorings may or may not have a surface mark. Location 229 will be marked with a yellow special mark buoy.

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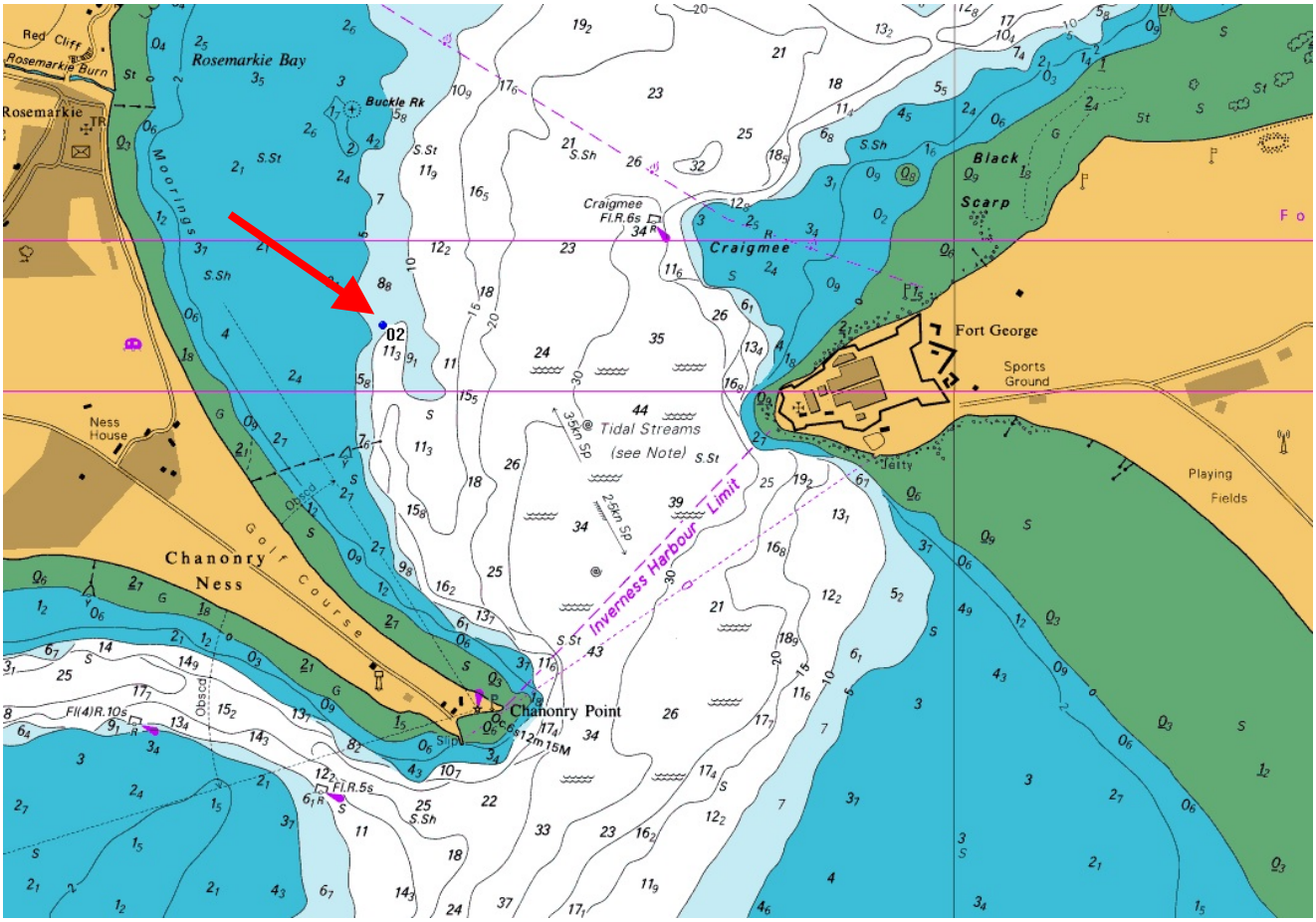
University of Aberdeen, marine licence application, 2018.
Detail of Chanonry Point location.
Datum: WGS84.



The mooring is surface marked.

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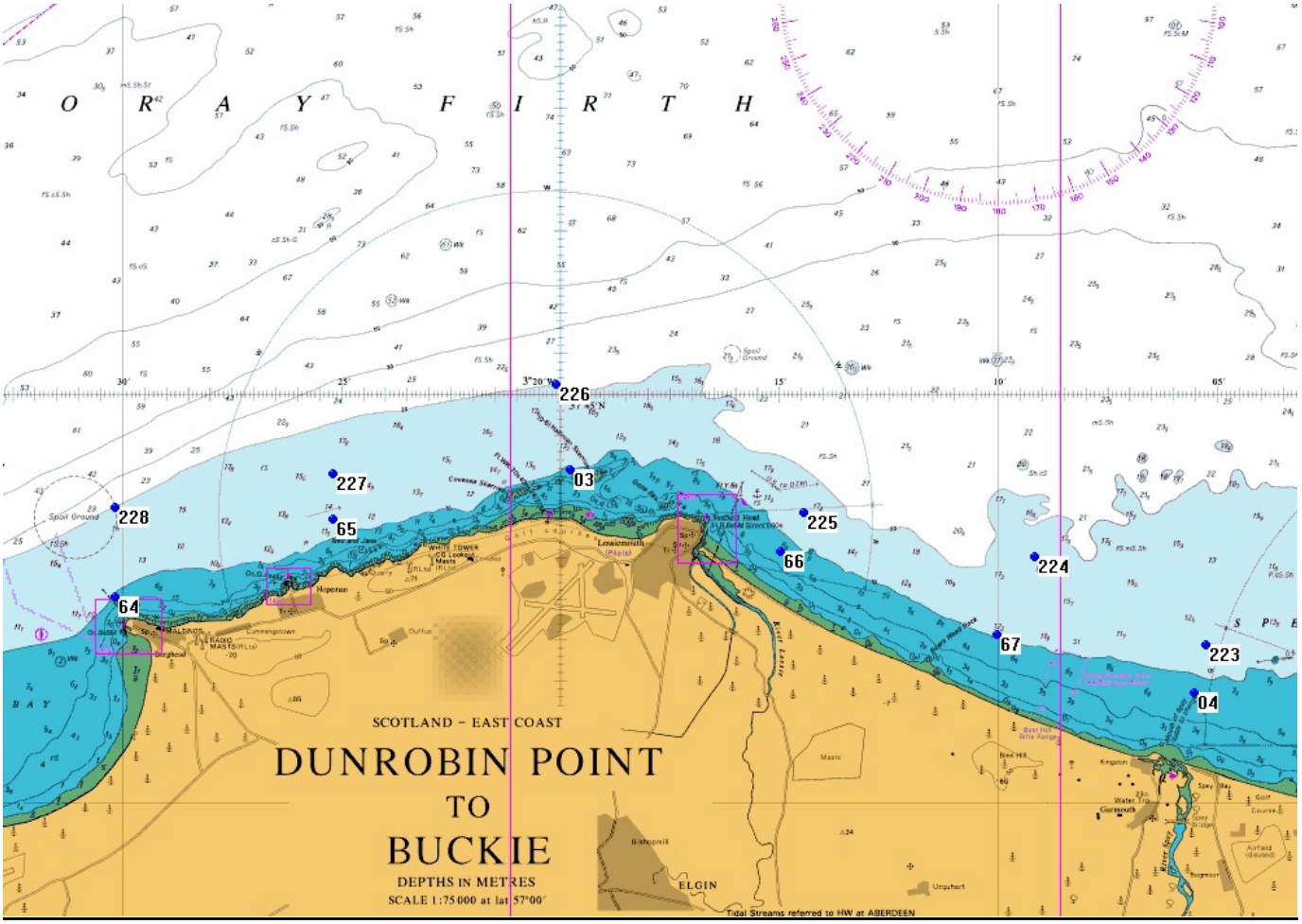
University of Aberdeen, marine licence application, 2018.
Detail of locations from Burghead to the River Spey.
Datum: WGS84.



Locations 3 & 4 are surface marked. The remaining mooring locations may be surface marked, or may be entirely subsurface. In the case of the latter the mooring will not rise more than 3m vertically from the sea bed.

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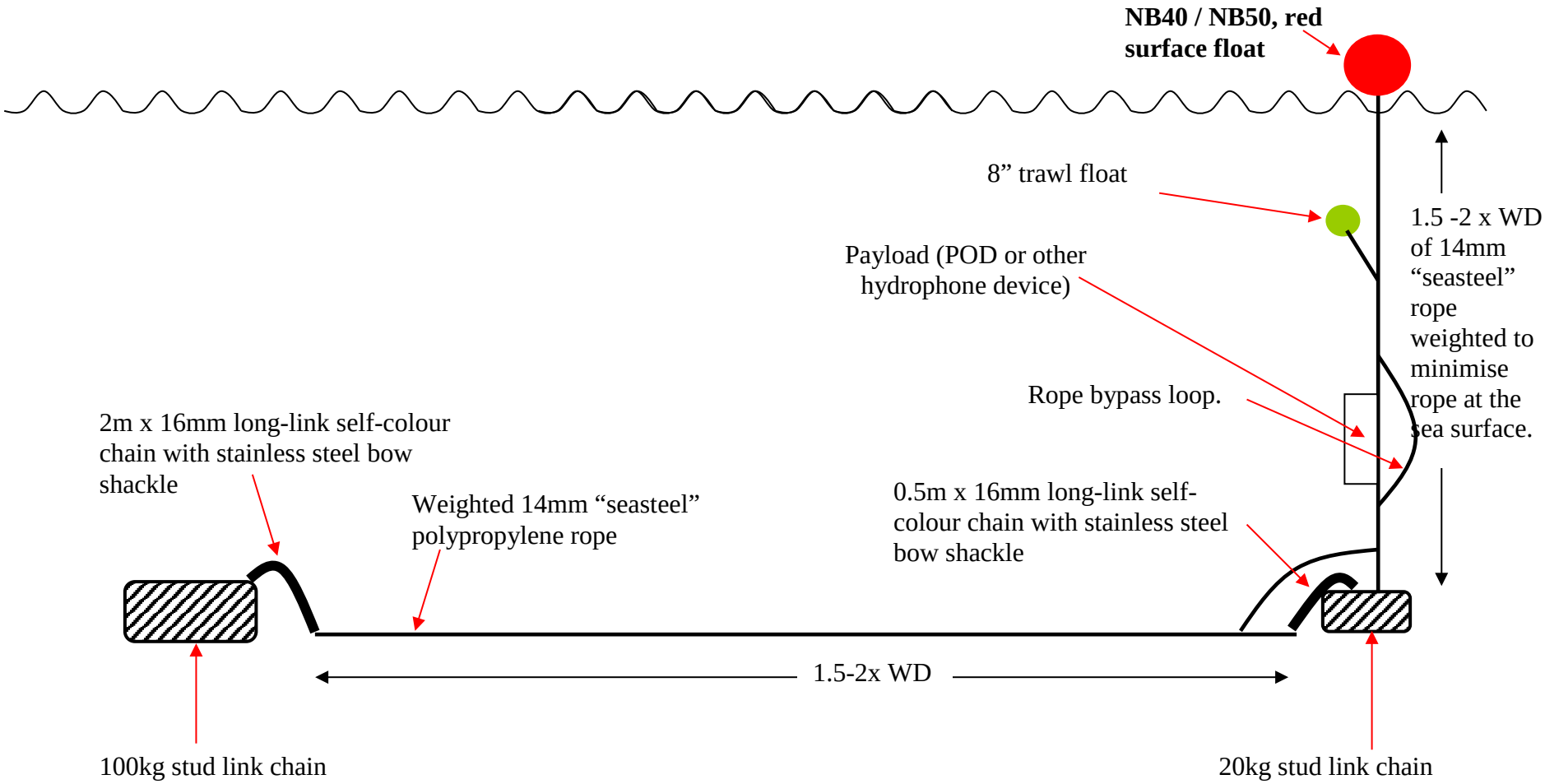
University of Aberdeen, marine licence application, 2018.

Type 1 mooring. Ground line and riser. MAY ADDITIONALLY BE MARKED WITH 12' DHAN C/W RADAR REFLECTOR AND FLAG.

Type 2 mooring omits the ground line and smaller weight.

(Not to scale)



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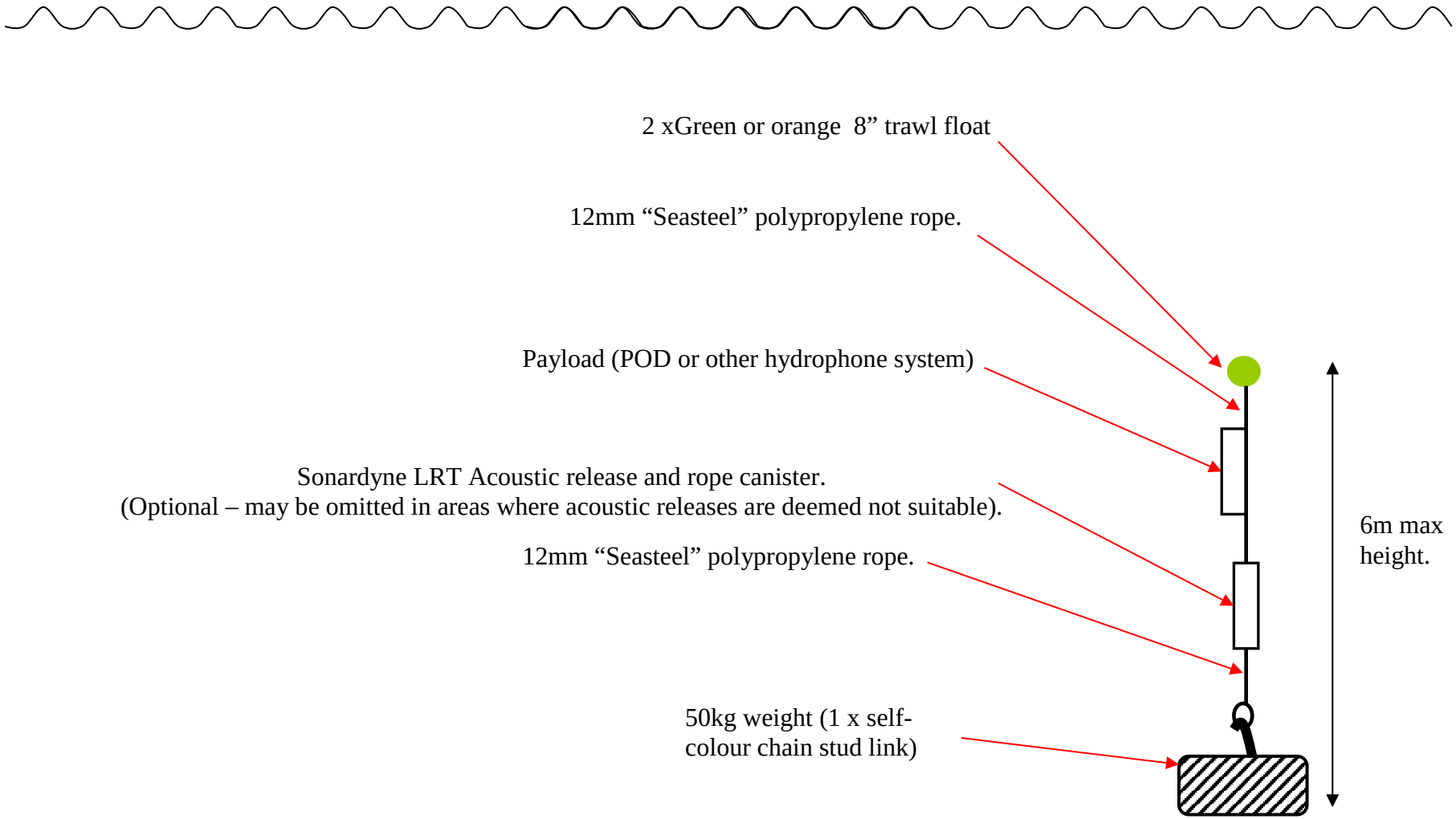
University of Aberdeen, marine licence application, 2018.
Type 3 mooring. Subsurface riser with or without acoustic release and no ground line.
(Not to scale)



Marine Laboratory, PO Box 101, 375 Victoria Road,
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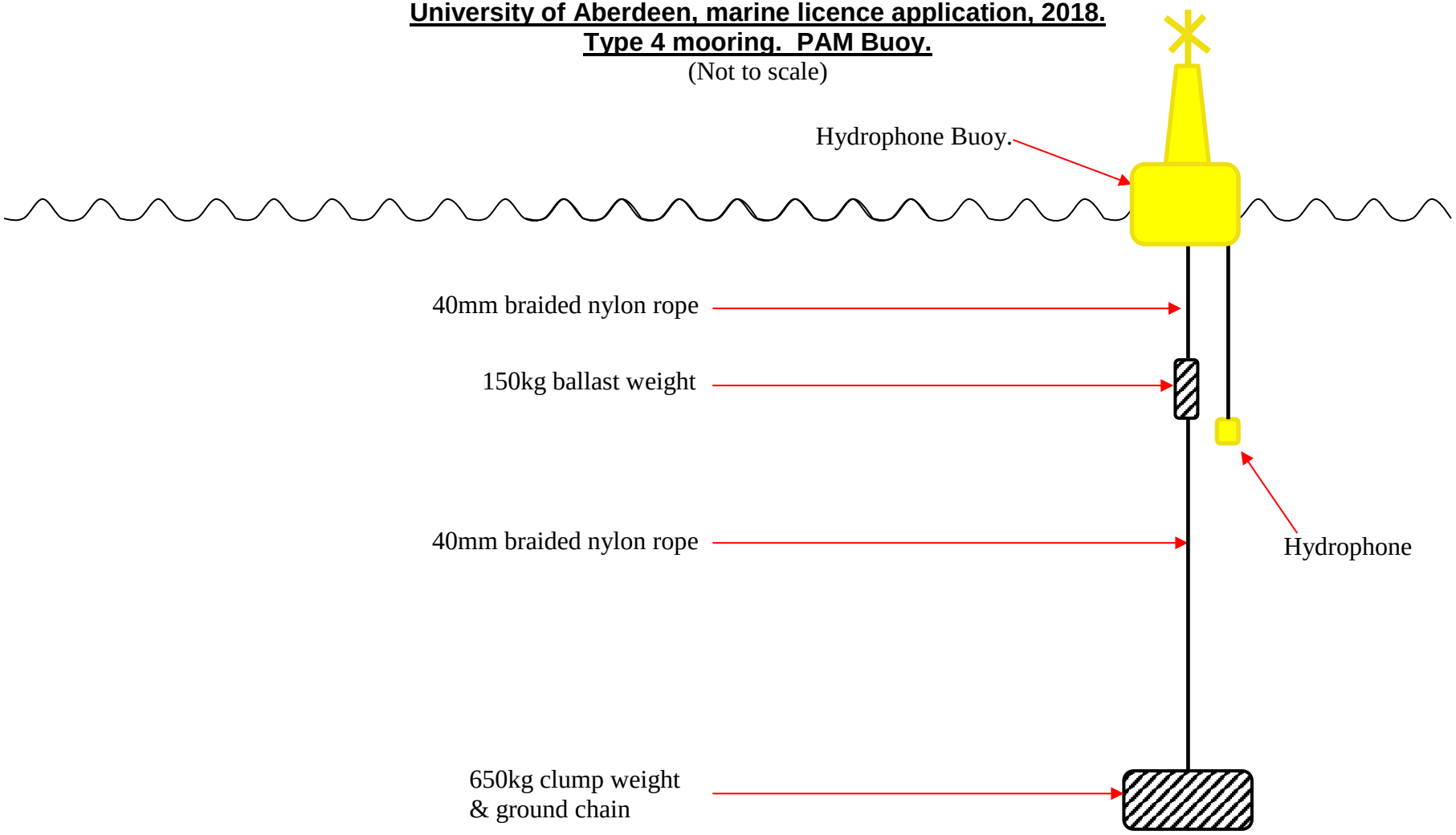
www.scotland.gov.uk/marinescotland

University of Aberdeen, marine licence application, 2018.
Type 4 mooring. PAM Buoy.
(Not to scale)



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University of Aberdeen, marine licence application, 2018.
Acoustic equipment to be deployed.

Acoustic logger
(600 x 95mm)

Sound recorder
(900 x 170mm)

Sound recorder
(200 x 60mm)

Examples of equipment which the above moorings support.

University of Aberdeen, marine licence application, 2018.
Hydrophone buoy.

Example hydrophone buoy, as deployed.