Original application November 2015: withdrawn

Aberdeen Harbour Expansion Project

Marine Licence application: Dredging and Disposal

Document and drawing register

Document register

1. Marine licence application form
2. Development Coordinates
3. Chemical Analysis Summary
4. Best Practice Environmental Option (BPEO) Assessment
5. Environmental Statement
    a) Volume 1: Non-Technical Summary
    b) Volume 2: Environmental Statement
    c) Volume 3: Technical Appendices
    d) Volume 4: Habitats Regulations Appraisal

Drawing register

Drawing reference	Description
01.Location_plan_Q2582	Location of existing Aberdeen Harbour and proposed harbour expansion
02.Areas_to_be_dredged_121106-1013(-)	Areas to be dredged and dredge depths
03.Areas_of_rock_dredging_121106-1014(-)	Areas of rock to be dredged
04.Offshore_disposal_site_121106-1010(-)	Location plan and bathymetric survey of licensed offshore disposal site

4 November 2015

Original application November 2015: withdrawn

marinescotland

The Scottish Government

T:+44 (0)1224 295579 F: +44 (0)1224 295524
E: MS.MarineLicensing@scotland.gsi.gov.uk

Dredging and Deposit of Solid Waste 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@gov.scot

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

Explanatory Notes

2. Applicant

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

3. Producer/Contractor

The person, company or organisation whose activities produce the material intended for deposit in the sea (e.g. the dredging or excavation contractor).

4. Holder

The person, company or organisation that will be in possession of the waste prior to its deposit in the sea. This will include those providing temporary storage facilities or transporting the material to the vessel for conveyance to the disposal site etc.

5. Agent

Any person, company or organisation acting under contract (or other agreement) on behalf of any party listed in the answer to questions 2-4 and having responsibility for the control, management or deposit anywhere below the tidal limit of mean high water springs (MHWS). (e.g. a consultancy company submitting the application or a contractor who will be carrying out the operations).

6. Details of Current/Previous Licence

Enter the appropriate details for the current sea disposal licence. If you have previously held a licence in respect of this operation, but no current licence exists, please provide the details for the most recently expired licence. If you have no knowledge of any previous licence, please enter “not applicable” (or “N/A”).

7. Duration of Dredging Operation

Provide details of the proposed commencement and completion dates of the operations. The start date will not normally be backdated, except in exceptional circumstances, since to commence a project for which a licence has not been obtained may constitute an offence resulting in appropriate legal action. A licence may be issued for up to 3 calendar years, Although Marine Scotland Licensing Operations Team (MS-LOT) will aim to write to licence holders two months 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.

8. Details of Dredging and Disposal Vessel(s)

The name, operator and type of vessel, including the type of dredging plant (e.g. cutter-suction) should be entered. If vessel details are not available at the time of application, please indicate this on the form as these details will be required prior to licence issue

9. Method Statement

Please provide a full method statement of the dredging operation. This should include details such as the rate of dredging, timing of the operation, order of the areas to be dredged and the precautions taken to protect safe navigation and the environment.

10. Use of Explosives

Indicate whether explosives are to be used as part of the dredging operations. If yes, please indicate if a method statement has been provided with your application. If a method statement has been produced but is not available, please provide an explanation in the space provided.

11. Details of the Areas to be Dredged

This section requires data to be provided about the source area to be dredged and the type of material to be deposited.

Name of Area - An annotated chart/location plan (either at A3 or A4 format) of suitable scale (1:2,500 but no more than 1:10,000) should be provided, with each proposed dredge area marked and named. The chart/location plan should show the full extent of the project in relation to the surrounding area. These drawings/plans may be copied to others as part of MS-LOT consultation procedures. 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.**

Co-ordinates - Include a list of the National Grid References (NGR) or latitude and longitude co-ordinates of the boundary points for the proposed dredge areas.

- **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.

Nature of Dredge Area - please provide a description of the type of area to be dredged (e.g. river bed, sea, harbour, approach channel, estuary)

Date Area Last Dredged - please indicate the date (month and year) when the area was last dredged (if known). This information will be taken into account by MS-LOT in deciding whether the material for deposit is 'capital' or 'maintenance'. If any of the areas have been dredged within the preceding 12 months, the applicant should provide supplementary information to show how the level to which it is now proposed to dredge compares to the level to which the area was previously dredged.

12. Details of the Material to be Dredged

Information is required for each of the areas listed in the answer to question 10. The applicant should indicate the following:

Type of Material - Whether the material to be dredged is considered to be 'capital' or 'maintenance'.

- **Maintenance dredge:** an area which is dredged annually or on a regular basis.

- **Capital dredge:** an area/depth being dredged either for the first time, or which has not been dredged within the past 7 years.

For capital dredging operations, a pre-dredge survey and sediment chemical analysis report will be required by MS-LOT prior to the issue of a sea disposal licence. Please contact MS-LOT for details in relation to specific projects. In addition to those samples analysed by the applicant, sediment sub-sample(s) must be submitted to MS-LOT as check monitoring may be required.

Physical Composition of Material - Please indicate the approximate proportions (by volume) of the different types of dredgings which are expected to be removed from each area.
For the purposes of this application the following descriptions should be used:

Average particle size (Based on the Wentworth Table)		
Description	**Lower range**	**Upper range**
Boulders	256 mm+	
Cobbles	64 mm	256 mm
Pebbles	4mm	64 mm
Granules	2 mm	4mm
Sand	62 microns	2mm
Silt and clay		62 microns

Depth of Material to be Removed - Please indicate the maximum depth (in metres) below the current seabed level, to which it is expected dredging is to be carried out.

Estimated Specific Gravity - Please indicate the Specific Gravity of the material to be disposed.

Quantity to be dredged per year - The amount of material to be dredged (per year) from each area. Please indicate unit of measure, either in-situ cubic metres or metric tonnes.

13. Dredged Material: Additional Information

Contamination - Information should be given regarding contamination in any of the areas to be dredged e.g. waste discharges, man-made rubbish or industrial activity in close proximity.

Type of dredger - Please indicate the type of dredging plant to be used within each area.

Beneficial uses – Include any intended beneficial use of material (details to be provided at question 15) e.g. beach recharge, beach nourishment, disposal on land.

14. Dredged Material Quality

Please indicate whether the material from any of the areas to be dredged has been chemically analysed within the past 3 years. If yes, please provide details (locations, dates, results) on a separate sheet. For capital projects, the applicant is required to have representative sediment samples analysed at a laboratory of choice. This is liable to extend the time required to consider your application **as no licence will be issued without provision of this chemistry data.**

As part of the application consideration process, an assessment will be made of the chemical and physical characteristics of the material to be deposited at sea and its potential effects upon the marine environment.

As part of the licence conditions, you are likely to be required to take representative samples of the dredged material during the dredging/sea disposal operations for analysis by MS-LOT. In such cases, samples should be taken at specified locations and depths and placed in containers which will be provided. The samples should then be returned to MS-LOT at the Marine Laboratory Aberdeen. This process enables the UK to fulfil its obligations under international conventions.

15. Construction/Land Reclamation Projects

Indicate whether the deposit of dredged material is associated with any other marine projects involving the placement of material in the sea (e.g. beach nourishment, marine/harbour construction operations etc). If this is the case, indicate whether a separate Marine Project application (form ML-001) has already been submitted to MS-LOT.

16. Best Practicable Environmental Option (BPEO) Assessment

Under Part 4, Section 27(2) of the Marine (Scotland) Act 2010 (there is no equivalent provision under the Marine and Coastal Access Act 2009), the Licensing Authority has an obligation to consider the availability of practical alternatives when considering applications involving disposal of material at sea. In order for Marine Scotland to thoroughly assess the available alternative options and reach a properly considered decision, all sea disposal licence applications must be supported by a detailed assessment of the alternative options- a Best Practicable Environmental Option (BPEO) assessment. This should include a statement setting out the reasons which have led to the conclusion that deposit of the materials at sea is the BPEO. **Sea disposal applications will not be considered unless they are accompanied by a BPEO assessment.** All options in the BPEO should be explored fully (as per the guidance documents), otherwise your form and BPEO are liable to be returned to you thereby delaying processing of the application.

17. Consultation with Conservation Bodies

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, particularly where the applicant has statutory powers for consenting aspects of the project.

Any dredging/sea disposal operations should be cross checked as to whether the proposed site is a designated bathing water and if so, ideally all physical operations 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.

18. Designated Conservation Areas

Indicate whether the proposed operations are located within or close to the boundaries of a conservation area such as a SSSI, SAC, SPA or Ramsar site (details of designated conservation areas can be found at http://gateway.snh.gov.uk).

19. Statutory Consenting Powers

Please describe in the answer to this question what (if any) statutory responsibilities you (or your client) have to consent any aspect of the dredging operations, including the deposit of material arising. This is particularly likely to apply to harbour or local authorities.

20. 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 environmental assessment has been carried out in respect of the proposed dredging/disposal operations, 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. Additionally, please also give detail regarding if and where a copy has been/ is being made available for public inspection.

21. Disposal site

Provide details of the proposed disposal site for the dredged material and, if necessary, any alternative disposal site(s) considered. In determining whether to issue a licence, MS-LOT will take into account any site

nominated by the applicant. However, should this site be unsuitable, the nearest suitable disposal site for the dredged material will be identified. Should you wish to establish a new site, please provide details in a covering letter with your application and MS-LOT will contact you to discuss your proposal before your application is determined. The cost of any site investigations to identify any new disposal site will normally be the responsibility of the applicant.

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".

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.

Original application November 2015: withdrawn

Application for Dredging and Deposit of Solid Waste in the Territorial Sea and UK Controlled Waters Adjacent to Scotland

(ML-002)

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.

n/a

Original application November 2015: withdrawn

1. Project Title and Payment Details

Please give a brief description including the location of operations:

Aberdeen Harbour Expansion Project

Payment: Enclosed payment ☐ BACS ☐ **OR** Invoice ☒

2. Applicant Details

Title	Mr.	Initials	K	Surname	Young

Trading Title (if appropriate)	Aberdeen Harbour Board		
Address	16 Regent Quay Aberdeen, AB11 5SS		
Name of contact (if different)	Katherine Harris		
Position within Company (if appropriate)	Environment Manager		
Telephone No. (inc. dialing code)	01224 597000	Fax No. (inc. dialing code)	
Company Registration No.	n/a	Email	k-harris@aberdeen-harbour.co.uk

3. Dredging Contractor/Producer Details

If the Producer is the Applicant shown at 2 above please tick the box and go to Section 6. ☒

The Dredging Contractor/Producer has not yet been appointed. Please use Applicant details.

Title	Initials	Surname

Trading Title (if appropriate)			
Address			
Name of contact (if different)			
Position within Company (if appropriate)			
Telephone No. (inc. dialing code)		Fax No. (inc. dialing code)	
Company Registration No.		Email	

4. Holder

If the Holder is also the Applicant (shown at 2) tick the box and go to Section 5. ☒

The Dredging Contractor/Producer has not yet been appointed. Please use Applicant details.

If the Holder is also the Producer (shown at 3) of the material tick the box and go to Section 5. ☐

Title Initials Surname

Trading Title (if appropriate)

Address

Name of contact
(if different)

Position within Company
(if appropriate)

Telephone No.
(inc. dialing code)

Fax No.
(inc. dialing code)

Company Registration No.

Email

5. Agent

Title Initials Surname

Trading Title (if appropriate)

Address

Name of contact
(if different)

Position within Company
(if appropriate)

Telephone No.
(inc. dialing code)

Fax No.
(inc. dialing code)

Company Registration No.

Email

If more than one 'Agent' please continue on a separate sheet and tick this box ☐

6. Details of Current/ Previous Licence

Licence reference number	n/a
Expiry date	n/a
Quantity (tonnes) deposited under current licence as at (date)	n/a

7. Duration of Dredging Operation

When is it proposed to begin the dredging operation? January 2017

When are dredging and disposal operations expected to be completed? December 2018

8. Details of Dredging and Disposal Vessel(s)

	Name of Vessel and Operator	Type of Vessel
(a)	Not yet available – to be confirmed once a contractor has been appointed	Trailer suction hopper dredger Backhoe dredger and barges
(b)		
(c)		
(d)		

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

9. Method Statement for Dredging Operation

Capital dredging will be carried out to achieve a depth of 9.0 m below Chart Datum within the harbour, and 10.5 m below Chart Datum at the East Quay and in the entrance channel, as shown on drawing '*02.Areas_to_be_dredged_121106-1013(-)*' submitted with this application. There will be areas that require localised deeper dredge pockets to facilitate construction, as shown on this drawing.

Dredging activity expected to commence in early 2017 and is anticipated to take 19 months to complete. Dredging will be intermittent depending on the construction programme, and could take place 7 days a week throughout the year. It is likely that the trailer suction hopper dredgers (TSHDs) will be used earlier in the programme to remove the initial less consolidated layers of material, then backhoe dredgers will be used to excavate the rock layer, following any drilling and blasting that is required. Final selection of the dredging plant will not be determined until a contractor has been appointed, but it is considered that this is a likely dredging scenario.

It is anticipated that 109,000 m^3 of the material to be dredged is rock, located in the areas shown on drawing '*03.Areas_of_rock_dredging_121106-1014(-)*' submitted with this application. All rock will be used within the harbour works and will not be disposed offshore.

Trailer Suction Hopper Dredger

Where possible, unconsolidated material will be removed using a TSHD. This type of dredger has a suction pipe with a draghead at the end of the pipe which hangs off the vessel, with the pipe and draghead trailing along the seabed. A pump is used to draw the seabed material up the suction pipe where material is discharged into the hopper.

Backhoe Dredger

A backhoe dredger will be used to remove the more consolidated material. This is typically a stationary dredger which has a hydraulic excavator with a digging bucket at the end and is positioned on top of a turntable attached to one end of the pontoon. The pontoon uses spud legs to keep it stable and stay in position. Once the bucket has been lowered and has dug up/removed material, the bucket is lifted, then

swung over to and placed in a barge which is located alongside the pontoon. As this is a stationary dredger, the dredging area will be the limit of reach of the bucket. Once this limit is reached the pontoon will be repositioned. Typically this type of dredger can operate in up to approximately 20 m water depth. The material removed will be disposed of through the bottom opening of the barge (into which the dredged material is placed) at the licenced offshore disposal site CR110 (shown on drawing '*04.Offshore_disposal_site_121106-1010(-)*' submitted with this application) or reused within the harbour works.

Drilling and Blasting

The rock to be dredged will require pre-dredge treatment through drilling and blasting methods in order for the material to be removed. Some drilling will be undertaken from land. Marine drilling is likely to take place from a barge or jack-up.

Drilling will be undertaken in preparation of blasting works. Drilling will continue until the pre-selected number of holes have been completed.

Drilling and blasting activities could be undertaken at any point during the dredging programme. Blasting operations will only be undertaken during daylight hours, under normal conditions. (Blasting may need to be done at other times for safety reasons.)

Further information is available in ES Chapter 3: Description of the Development.

10. Use of Explosives

Will any part of the dredging operation involve the use of explosives? YES ☒ NO ☐

If YES,
Has a method statement regarding the use of explosives been submitted with this application?
YES ☐ NO ☒

If a method statement is not being submitted, please provide an explanation as to why.

An outline methodology is provided in response to Question 9 above. A detailed method statement will not be available until a contractor has been appointed and the blasting methodology has been developed. The underwater noise modelling study carried out for the ES (see ES Appendix 13-B: Underwater Noise Impact Study) has assumed a worst case scenario for underwater blasting activities.

11. Details of Areas to be Dredged

Dredge Areas	Name of Area to be Dredged	Co-ordinates	Nature of Dredge Area	Date Area Last Dredged (if known)
A	Inner basin: 9.0 m below Chart Datum	See the 'Development Coordinates' document submitted with this application.	Coastal embayment	Not known to have been previously dredged
B	East Quay and entrance channel: 10.5 m below Chart Datum	See the 'Development Coordinates' document submitted with this application.	Coastal embayment	Not known to have been previously dredged
C	Construction dredging to form breakwaters: 14 m and 15.5 m below Chart Datum	See the 'Development Coordinates' document submitted with this application.	Coastal embayment	Not known to have been previously dredged

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

12. Details of Material to be Dredged

For each of the areas at rows A –E above (plus any listed separately), provide the following information:

Dredge Areas	Type of Material (Maintenance or Capital	Estimated Specific Gravity	Physical Composition of Material	Depth of Material to be Removed (metres)	Quantity to be Dredged per Year (either in-situ m^3 or metric tonnes)
A	Capital	Variable 1.7 – 2.7	Silt, sand, gravel, rock	9.0 m below Chart Datum	2,072,000 m^3
B	Capital	Variable 1.7 – 2.7	Silt, sand, gravel, rock	10.5 m below Chart Datum	101,000 m^3
C	Capital	Variable 1.7 – 2.7	Silt, sand, gravel, rock	Up to 15.5 m below Chart Datum in specific areas	127,000 m^3

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

13. Dredged Material: Additional Information

For each of the areas at rows A – E above (plus any listed separately), provide the following information

Dredge Areas	Type of Contamination	Type of Dredger	Beneficial Uses
A	See separate report submitted with this application: 'Chemical Analysis Summary'. All samples contain levels of contaminants below Marine Scotland Revised Action Level 1, except one isolated elevated concentration of lead, which is above Action Level 1 but well below Action Level 2.	Trailer suction hopper dredger and backhoe dredger	Where practicable, dredged material will be used in the reclamation to create the quays. See the 'Best Practicable Environmental Option (BPEO) Assessment' submitted with this application for further details.
B	See separate report submitted with this application: 'Chemical Analysis Summary'. All samples contain levels of contaminants below Marine Scotland Revised Action Level 1, except one isolated elevated concentration of lead, which is above Action Level 1 but well below Action Level 2.	Trailer suction hopper dredger and backhoe dredger	Where practicable, dredged material will be used in the reclamation to create the quays. See the 'Best Practicable Environmental Option (BPEO) Assessment' submitted with this application for further details.
C	See separate report submitted with this application: 'Chemical Analysis Summary'. All samples contain levels of contaminants below Marine Scotland Revised Action Level 1, except one isolated elevated concentration of lead, which is above Action Level 1 but well below Action Level 2.	Trailer suction hopper dredger and backhoe dredger	Where practicable, dredged material will be used in the reclamation to create the quays. See the 'Best Practicable Environmental Option (BPEO) Assessment' submitted with this application for further details.

14. Details of Material Quality

Has the dredged material been chemically analysed in the last 3 years? YES ☒ NO ☐

Can the samples be made available if required? YES ☒ NO ☐

If **NO**, when will they be available?

Please see 'Chemical Analysis Summary' submitted with this application for further details.

15. Construction/Land Reclamation projects

Is the dredging operation related to a construction or land reclamation project? YES ☒ NO ☐

If YES, have you applied for a Marine Construction Project licence under the Marine (Scotland) Act 2010? YES ☒ NO ☐

If you have not yet applied for a Marine Works licence please provide an explanation.

n/a

16. Best Practicable Environmental Option (BPEO) Assessment

Has an up to date BPEO assessment been included with your application? YES ☒ NO ☐

17. Conservation Bodies

Please provide details of any consultation with Conservations Bodies, and, if appropriate, include copies of any correspondence with your application.

Scottish Natural Heritage (SNH) were one of the statutory consultees on the EIA Scoping Report produced in 2013 (see ES Appendices 1-D (Scoping Opinion 2014) and 1-E (Updated Scoping Report 2014)). SNH's comments at the scoping stage have been taken into account in the development of the ES.

Where applicable, the EIA consultants Fugro EMU and Waterman consulted with SNH on the scope of the baseline surveys and technical assessment methodologies for the ES. SNH were consulted on selected draft ES chapters and their feedback has been incorporated into the final ES.

SNH have attended recent regulator meetings with Aberdeen Harbour Board to discuss the ES and submission of the various consent applications.

18. Designated Conservation Areas

Are any parts of the proposed dredging and/or deposit operations located within the boundaries of a designated conservation area?

If **YES**, please indicate approximate distance of the operations from the boundary of the nearest conservation area(s)

The Nigg Bay SSSI is in the south west corner of the development
The Balganask to Cove Local Nature Conservation Site overlaps with the site.
See ES Chapter 10 (Nature Conservation) for full details.

19. Statutory Consenting Powers

Do you, or (if appropriate) your client, have statutory powers to consent any aspect of the project?

No. In parallel with this marine licence application, Aberdeen Harbour Board has applied for a Harbour Revision Order under the Harbours Act 1964 to undertake the works, and to vary its existing harbour powers to apply to the proposed new harbour area.

20. Environmental Assessment

Has an Environmental Impact Assessment (EIA)/Environmental Statement (ES) been undertaken to support any application in respect of the operations, 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.

n/a

Is the EIA/ES available for public inspection? YES ☒ NO ☐

If **YES**, at what locations:

A copy of the ES is on public display from 6 November 2015 for a period of 42 days (until 17 December 2015) at the following locations:

- Torry Library, Victoria Road, Aberdeen AB11 9NJ
- Aberdeen Maritime Museum, Aberdeen Maritime Museum, Shiprow, Aberdeen AB11 5BY

A copy is also available on Aberdeen Harbour Board's website: www.aberdeen-harbour.co.uk

21. Disposal Site Details

Name of Disposal Site (or Oslo Code)	Co-ordinates of Disposal Site
CR110	Centre point: 57°07.000'N, 02°00.000'W Radius: 462.8 m (0.25 Nautical Miles)

Original application November 2015: withdrawn

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	4/11/15
Name in BLOCK LETTERS	KEITH D. YOUNG		
Position within company (if appropriate)	ENGINEERING DIRECTOR		

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

Application Check List

• Completed application form **x 1**	✓
• Best Practicable Environmental Option document **x 1**	✓
• Analytical chemistry data (capital projects only) **x 1**	✓
• Method Statement **x 1**	✓ Chapter 3 of ES
• Maps/charts – General map of dredge area & disposal site **x 1**	✓
• Transportation plan (dredger route to and from disposal site - if required) **x 1**	n/a
• Additional environmental information, e.g. Photographs, Environmental Impact Assessment etc (if required) **x 1**	✓
• Payment (if paying by cheque)	n/a

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

Aberdeen Harbour Expansion Project

Marine Licence application: Dredging and Disposal

Development Coordinates

All coordinates are provided in latitude and longitude. The coordinate points define the key boundaries of the various elements of the dredging activity. The detailed design is shown on the drawings submitted with the application.

Area A: To be dredged to 9.0 m below Chart Datum

Identifier	**Coordinates**	
9D1	57°08.147'N	02°03.038'W
9D2	57°07.947'N	02°03.519'W
9D3	57°07.888'N	02°03.422'W
9D4	57°07.842'N	02°03.352'W
9D5	57°07.787'N	02°02.944'W
9D6	57°07.810'N	02°02.845'W
9D7	57°07.844'N	02°02.762'W
9D8	57°07.913'N	02°02.867'W
9D9	57°07.926'N	02°03.037'W
9D10	57°08.110'N	02°03.519'W
9D11	57°08.147'N	02°03.038'W

Area B: To be dredged to 10.5 m below Chart Datum

Identifier	**Coordinates**	
10.5D1	57°08.152'N	02°02.984'W
10.5D2	57°08.147'N	02°03.038'W
10.5D3	57°07.930'N	02°03.038'W
10.5D4	57°07.913'N	02°02.867'W
10.5D5	57°07.844'N	02°02.763'W
10.5D6	57°08.015'N	02°02.383'W
10.5D7	57°08.145'N	02°02.351'W
10.5D8	57°07.946'N	02°02.855'W
10.5D9	57°07.930'N	02°02.984'W
10.5D10	57°08.152'N	02°02.984'W

Area C: two areas to be dredged under the north and south breakwaters (coordinates provided for breakwaters)

North Breakwater

Identifier	**Coordinates**	
BWN1	57°08.256'N	02°02.955'W
BWN2	57°08.280'N	02°02.838'W
BWN3	57°07.896'N	02°02.838'W
BWN4	57°07.897'N	02°02.954'W
BWN5	57°08.256'N	02°02.955'W

South Breakwater

Identifier	**Coordinates**	
BWS1	57°07.980'N	02°02.487'W
BWS2	57°07.929'N	02°02.407'W
BWS3	57°07.699'N	02°02.918'W
BWS4	57°07.764'N	02°02.969'W
BWS5	57°07.980'N	02°02.487'W

Original application November 2015: withdrawn

ABERDEEN HARBOUR EXPANSION PROJECT

BEST PRACTICABLE ENVIRONMENTAL OPTION (BPEO) ASSESSMENT

October 2015

Original application November 2015: withdrawn

TABLE OF CONTENTS

Contents

1. Introduction 1
2. Dredging Requirements 3
3. Available Disposal Options 5
4. Assessment of Disposal Options 8
5. Identification of the BPEO 11

1. Introduction

PURPOSE OF THIS REPORT

This report presents the Best Practicable Environmental Option (BPEO) assessment for the dredging and disposal associated with the Aberdeen Harbour Expansion Project. BPEO assessment is a method for identifying the option that provides the *most environmental benefit* or *least environmental damage*. It assesses the performance of different options in a range of criteria such as environmental impact, technical feasibility and cost.

LICENSING REQUIREMENTS

The Aberdeen Harbour Expansion Project will create a new deep water facility in Nigg Bay, south of the existing harbour, as shown on Figure 1.1.

It is proposed to dredge the harbour to 9.0 m below Chart Datum, and 10.5 m below Chart Datum at the east quay and in the entrance channel. A marine licence application will be made to Marine Scotland for capital dredging and sea disposal activity.

A separate marine licence will be made for the construction of the marine works, comprising:

- Construction of new north and south breakwaters to form the harbour;
- Land reclamation and construction of approximately 1,400 m of quays and associated support infrastructure;
- Construction of areas (on the quaysides) to provide fuel, bulk commodities and potable water; and
- Navigational aids.

This BPEO assessment is for the dredging and disposal elements of the development.

ENVIRONMENTAL IMPACT ASSESSMENT

An Environmental Statement (ES) was produced in October 2015, which presents the results of a comprehensive assessment of the marine and terrestrial environmental impacts associated with the development.

STRUCTURE OF THIS REPORT

The remainder of this report is structured as follows:

- Section 2 summarises the dredging requirements;
- Section 3 describes the available disposal options;
- Section 4 assesses the viable options; and
- Section 5 presents the BPEO.

Map Document: (V:\J3132582_Nigg_Bay_EIA\3_Plots\3_Final\Overview\Q2582_AHB_Imagery_HXC_20151026.mxd)
26/10/2015 - 13:12:59

Figure 1.1 Location of the existing Aberdeen Harbour and the proposed Expansion Project at Nigg Bay

2. Dredging Requirements

Dredging will take place as two distinct and separate operations: during the construction phase of the development, a capital dredging operation will form the inner harbour and entrance channel as described in Section 1 and below. Once the harbour is operational, maintenance dredging will be carried out as required to maintain the dredged areas to their design depths.

CAPITAL DREDGING

It is proposed to dredge the inner basin to 9.0 m below Chart Datum, and the east quay and the approach channel to the harbour to 10.5 m below Chart Datum. Figure 2.1 shows the areas that will undergo dredging. There will be areas that require localised deeper dredge pockets to facilitate construction, as shown in Figure 2.1.

Dredging activity expected to commence in early 2017 and is anticipated to take 19 months to complete. Dredging will be intermittent depending on the construction programme, and could take place 7 days a week throughout the year. It is likely that the trailer suction hopper dredgers (TSHDs) will be used earlier in the programme to remove the initial less consolidated layers of material, then backhoe dredgers will be used to excavate the rock layer, following any drilling and blasting that is required. Final selection of the dredging plant will not be determined until a contractor has been appointed, but it is considered that this is a likely dredging scenario.

Material to be dredged

The total volume of material to be dredged is estimated to be 2,300,000 m^3, of which 109,000 m^3 is rock. Extensive geotechnical investigations undertaken between 2013 and 2015 have revealed that the substrate of the bay consists of loose sediments and sands and gravels of varying thickness, overlying glacial deposits below. The vast bulk of the material below the upper strata is glacial till comprising boulder clay, boulder fields, clays and gravels, overlying bedrock. Bedrock comprises granite, schist and gneiss but mostly crystalline granitic gneiss.

MAINTENANCE DREDGING

Once the harbour is operational, maintenance dredging operations will be carried out as required, depending on the rate of accretion within the inner basin and entrance channel, which will be monitored by hydrographic survey. A variety of dredger types could be used for the maintenance operation; this will be dependent on the type and quantity of material to be dredged, and the availability and cost of dredging equipment.

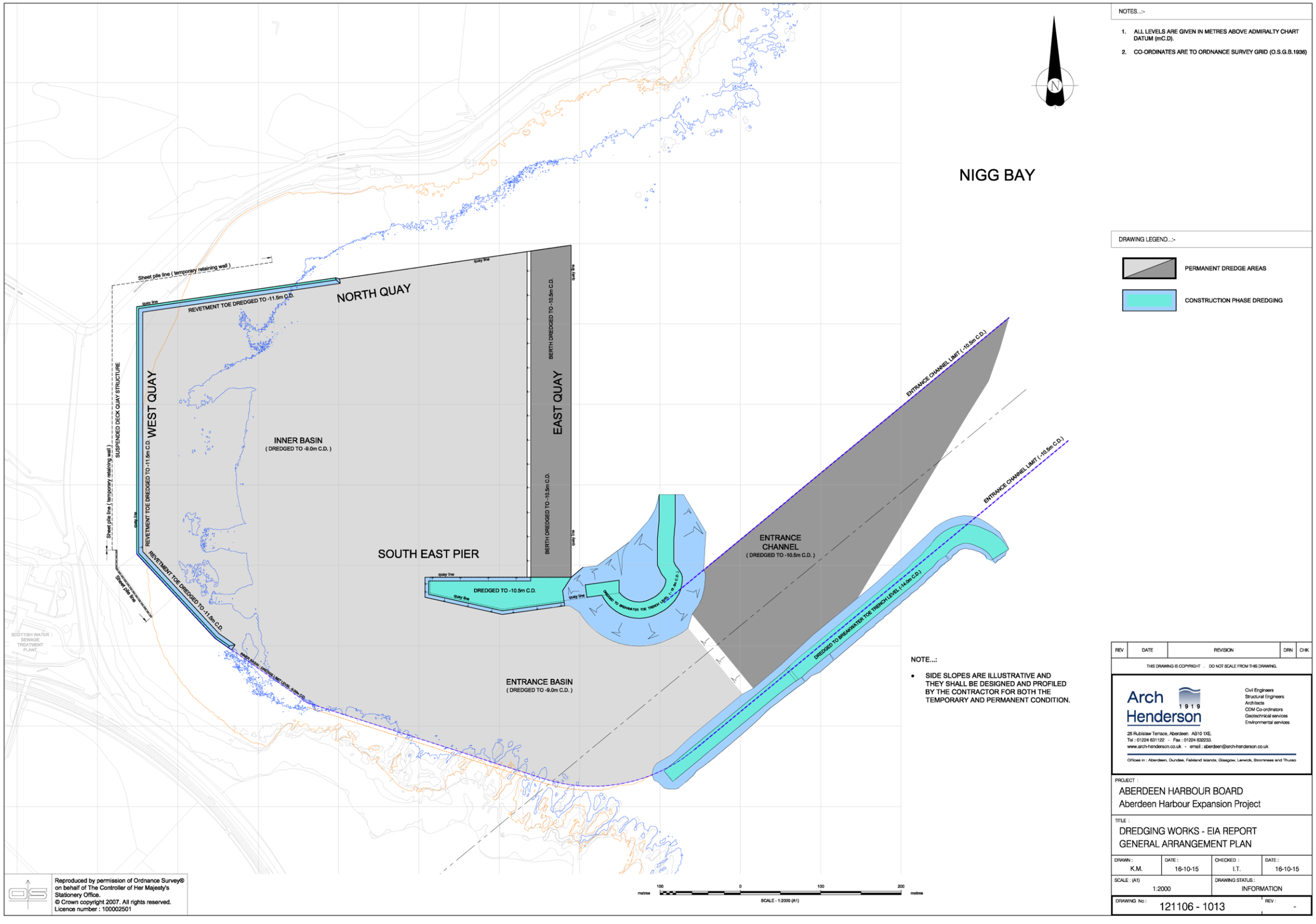


Figure 2.1 Dredge Plan

3. Available Disposal Options

A range of disposal options have been identified and assessed. As a contractor has not yet been appointed, the 'Rochdale Envelope' approach has been used to identify the range of possible disposal options (see ES Chapter 5: Environmental Impact Assessment Process for further details). These options will be considered and reassessed at the time of any future maintenance dredging. The options are listed below and described in more detail in the following subsections.

1. Land reclamation on site;
2. Construction material off site;
3. Beach restoration/other coastal protection; and
4. Offshore sea disposal.

OPTION 1: LAND RECLAMATION ON SITE

The construction of the quays will require the reclamation/infilling of land behind piled walls. A proportion of the coarser material to be dredged (e.g. rock, gravel and sand) could be suitable for use as reclamation material. The finer fractions (silt and fine sand) are not suitable for land reclamation.

OPTION 2: CONSTRUCTION MATERIAL OFF SITE

Similarly to Option 1, a proportion of the coarser material to be dredged could be suitable as a construction material for projects within Aberdeenshire or further afield.

Due to the large volumes of material to be dredged, and the lack of stockpile space within the site boundary, there is limited opportunity for temporary storage and/or processing of dredged material. This option, whilst a possibility, will be highly dependent on the demand for this material at the time of dredging.

OPTION 3: BEACH RESTORATION/OTHER COASTAL PROTECTION

Dredged material can be used as beach restoration/recharge material, or for other coastal protection works. However, it is often challenging to align the timescales for restoration and dredging projects.

Aberdeen Harbour Board has consulted widely throughout the EIA and consenting process for the development, including with Aberdeen City Council, and has not identified potential opportunities for beach restoration. Correspondence with Aberdeenshire Council in July 2015 has confirmed that the Council does not have any current plans that would make use of dredged material (see Appendix A). On this basis, the use of dredged material in beach restoration or other coastal protection projects is not considered a viable option.

OPTION 4: OFFSHORE SEA DISPOSAL

Aberdeen Harbour Board undertakes annual maintenance dredging of the existing harbour, and the dredged material is disposed at the licensed offshore disposal site CR110, located approximately 3.5 km offshore of Nigg Bay in water depths of 35 - 50 m, as shown on Figure 3.1. Due to the large area and deep water at this site, the disposal of dredged material is considered a viable option.

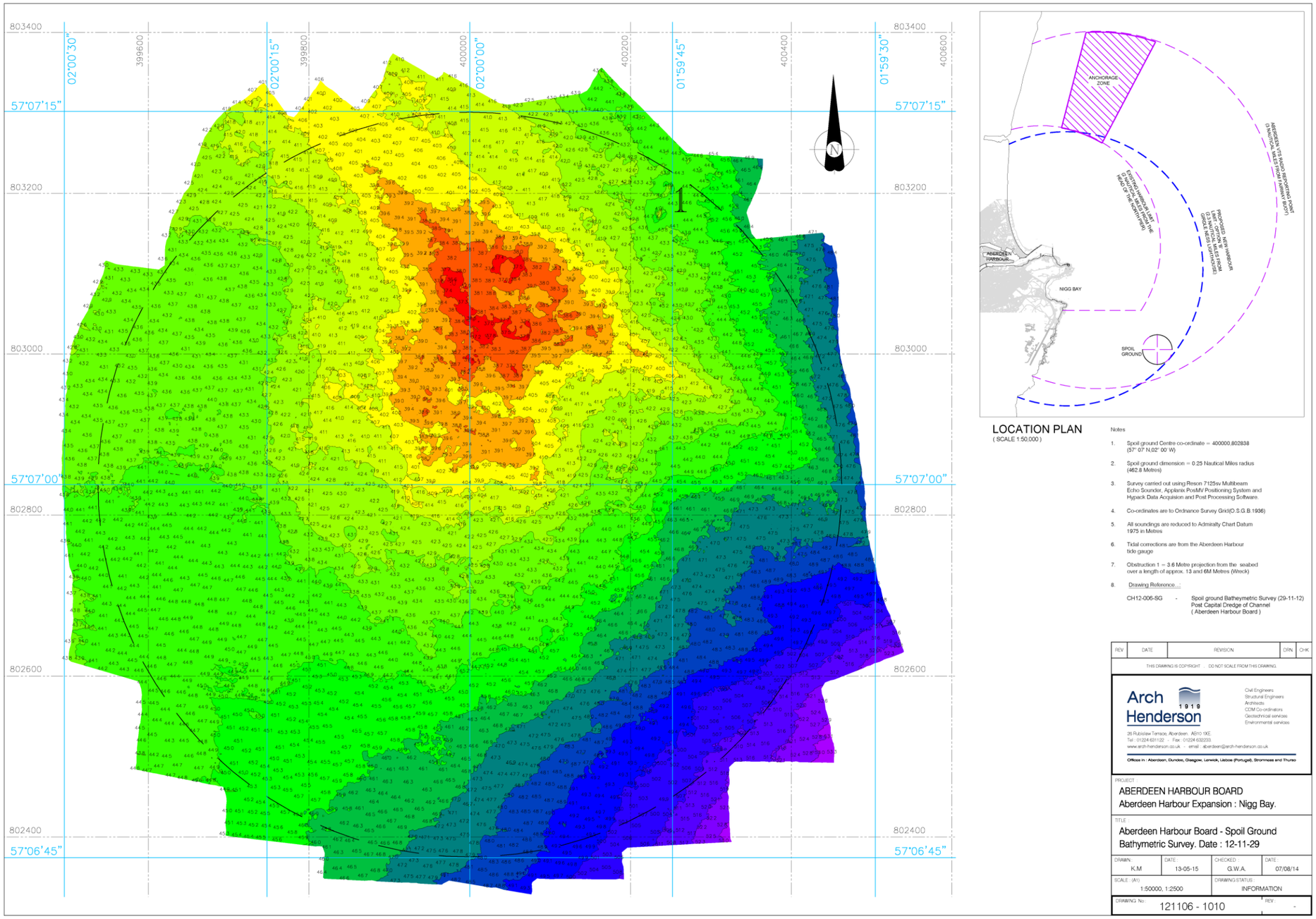


Figure 3.1 Offshore dredge disposal site

4. Assessment of Disposal Options

SUMMARY OF AVAILABLE DISPOSAL OPTIONS

The identification of available disposal options presented in Section 3 concluded that Option 3 (beach restoration/other coastal protection) is not considered to be a viable option due to a lack of demand in the foreseeable future.

In this section, Options 1, 2 and 4 are assessed further for strategic, environmental and cost considerations.

OPTION 1: LAND RECLAMATION ON SITE

Strategic considerations

The re-use of dredged material for reclamation and quay backfilling is a sustainable and efficient method of disposing of the material arising from the capital dredging. There would be no need for transport of the material off site. It is recognised that a substantial proportion of the material is not considered suitable for re-use, due to the fine nature of the material.

The material may require a waste management licence or exemption from the Scottish Environment Protection Agency depending upon the quality, need and end use of the material.

Environmental considerations

The use of dredged material for reclamation and quay backfilling has the following environmental advantages:

- The material is deposited very close to where it originated;
- There would be no need to transport the material off site by road;
- Material is not unnecessarily disposed at sea; and
- The amount of material which would otherwise have to be imported from quarries is reduced.

As presented in Chapter 7 of the ES (Marine Water and Sediment Quality), the material to be dredged has been subject to chemical testing, and levels of all contaminants were found to be below Marine Scotland's Revised Action Level 1, with the exception of one isolated elevated concentration of lead, which is above Action Level 1 but well below Action Level 2. The material is, therefore, considered acceptable for disposal at sea and there should be no chemical pollution risks associated with the use of the material in the reclamation.

Cost considerations

Costs associated with this option include the mobilisation and demobilisation of the dredging equipment, and a charge levied by The Crown Estate for use of a mineral resource on seabed that is within their ownership. The use of fuel by dredging equipment would be less than for Option 4 (offshore sea disposal) as the distance between the dredge site and the point of disposal is very short, i.e. within Nigg Bay.

OPTION 2: CONSTRUCTION MATERIAL OFF SITE

Strategic considerations

The use of the dredged material in construction for projects within Aberdeenshire or further afield is technically feasible, but it is likely to require considerable handling, transportation and reworking on site. Due to the large volumes of material involved, and the lack of stockpile space within the site boundary, there is limited opportunity for temporary storage and/or processing of dredged material. There are transportation implications, with the majority of the material likely requiring transit by road to the point of final use.

As for Option 1, it is recognised that the finer fractions of the dredged material (fine sand and gravel) would not be suitable as a construction material.

There is not a known market for this volume of dredged material at present.

Environmental considerations

Environmental considerations include: excessive vehicle movements between Nigg Bay and the recipient site(s), with potential to cause nuisance; road safety concerns; and reduced air quality concerns alongside transit routes.

Cost considerations

As for Option 1, costs associated with this option include the mobilisation and demobilisation of the dredging equipment, and a charge levied by The Crown Estate for the use of a mineral resource on seabed that is within their ownership. Additional costs include the processing of dredged material so that it is suitable for use as a construction material, and transport of the material to the recipient site(s).

OPTION 4: OFFSHORE SEA DISPOSAL

Strategic considerations

Offshore sea disposal is known to be technically feasible: the existing licensed disposal site approximately 3.5 km offshore of Aberdeen (shown on Figure 3.1) has been used for maintenance and capital dredging operations at the existing Aberdeen Harbour for many years. The site has not previously received this volume of material; however, it is a large site in deep water so there is considered to be sufficient capacity within the site; this is discussed further in Chapter 7 of the ES (Marine Water and Sediment Quality).

Environmental considerations

By definition, material disposed at sea is not re-used in a beneficial and sustainable way.

The disposal of material at sea generates sediment plumes that can adversely affect fish, shellfish and other marine species. The ES has considered the potential impacts of offshore disposal of dredged material on a wide range of environmental receptors, assuming the worst case scenario of all material (except the rock fraction) being disposed at sea. It concluded that there would be only minor effects on all receptors.

As discussed for Option 1, the material to be dredged has been subject to chemical testing, and levels of all contaminants were found to be below Marine Scotland's Revised Action Level 1, which means that the material is considered acceptable for disposal at sea with minimal risk to the marine environment.

Cost considerations

As for Options 1 and 2, costs associated with this option include the mobilisation and demobilisation of the dredging equipment. There would be additional fuel costs associated with regular transit to and from the offshore disposal site. As the material is being disposed, there would be a reduced charge from The Crown Estate compared to the charge for re-use of the material.

5. Identification of the BPEO

The BPEO is considered to be a combination of:

- Land reclamation on site for dredged materials that can be practicably recovered during the dredging process (particularly rock, gravel and larger pockets of coarse material); and
- Offshore sea disposal for dredged material that is not suitable for re-use (e.g. glacial till, other fine silts).

A wider range of options may become available when the significantly lower volumes of maintenance dredging are considered. These will be assessed in greater detail once the maintenance dredging requirements are clearer, i.e. when the harbour is operational.

Appendix A: Letter from Aberdeenshire Council regarding coastal protection and beach recharge

Original application November 2015: withdrawn

Aberdeenshire COUNCIL

JC/GG/S/1/175/3
D.11/1

Keith Young
Engineering Director
Aberdeen Harbour Board
16 Regent Quay
Aberdeen
AB11 5SS

Infrastructure Services
Roads
Carlton House
Arduthie Road
Stonehaven AB39 2QP
Tel 01569 768455
Fax 01569 768460
www.aberdeenshire.gov.uk
LP-5 STONEHAVEN

Please ask for Joanna Cubbage
Direct Dial 01569 768430
Email joanna.cubbage@aberdeenshire.gov.uk

15 July 2015

If you have difficulty reading this document please contact Joanna Cubbage on 01569 768430

Dear Mr Young

Coast Protection and Beach Recharge

Thank you for your letter dated 11 June 2015 regarding the potential use of dredged sand and silt from various activities taking place in Aberdeen Harbour.

I can confirm that we do not have any current plans which would make use of dredge material. However, there may be opportunities for mutually convenient options as we investigate and develop future flooding and coast protection and schemes along the Aberdeenshire coast.

Please do not hesitate to contact me should you wish to discuss this any further.

Yours sincerely

[redacted]

Joanna Cubbage
Principal Engineer
Flooding and Coast Protection

Original application November 2015: withdrawn

Aberdeen Harbour Expansion Project

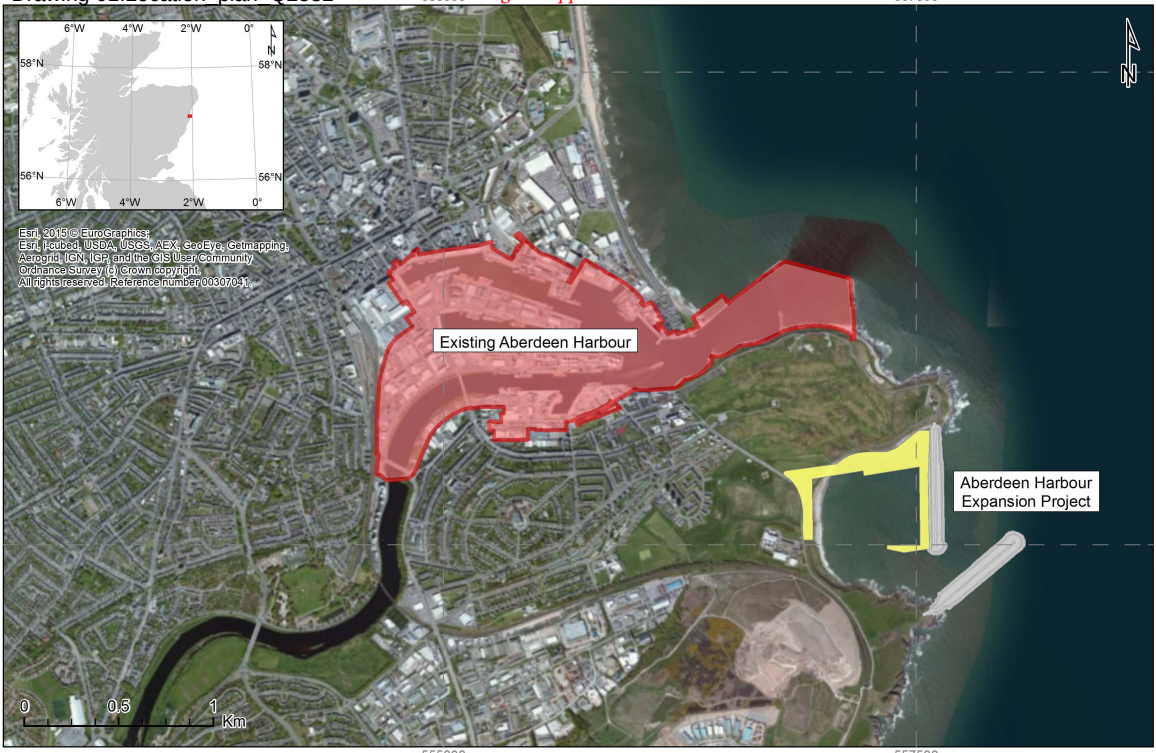
Marine licence application: Dredging and Disposal

Drawings

01.Location_plan_Q2582
02.Areas_to_be_dredged_121106-1013(-)
03.Areas_of_rock_dredging_121106-1014(-)
04.Offshore_disposal_site_121106-1010(-)

Drawing 01.Location_plan_Q2582

Original application November 2015: withdrawn



Map Document: (V:\J3132582_Nigg_Bay_EIA\3_Plots\3_Final\Overview\Q2582_AHB_Imagery_HXC_20151026.mxd)
26/10/2015 - 13:12:59

Drawing 02.Areas_to_be_dredged_121106-1013(-)

Original application November 2015: withdrawn

NIGG BAY

NOTES...:-

1. ALL LEVELS ARE GIVEN IN METRES ABOVE ADMIRALTY CHART DATUM (mC.D).
2. CO-ORDINATES ARE TO ORDNANCE SURVEY GRID (O.S.G.B.1936)

DRAWING LEGEND...:-

PERMANENT DREDGE AREAS

CONSTRUCTION PHASE DREDGING

Sheet pile line (temporary retaining wall)

SUSPENDED DECK QUAY STRUCTURE

NORTH QUAY

WEST QUAY

EAST QUAY

REVETMENT TOE DREDGED TO -11.5m C.D.

BERTH DREDGED TO -10.5m C.D.

quay line

INNER BASIN
(DREDGED TO -9.0m C.D.)

SOUTH EAST PIER

DREDGED TO -10.5m C.D.

DREDGED TO BREAKWATER TOE TRENCH LEVEL (-14.0m C.D.)

ENTRANCE CHANNEL LIMIT (-10.5m C.D.)

ENTRANCE CHANNEL
(DREDGED TO -10.5m C.D.)

ENTRANCE BASIN
(DREDGED TO -9.0m C.D.)

INNER BASIN DREDGELIMIT LEVEL -9.0m C.D.

SCOTTISH WATER SEWAGE TREATMENT PLANT

NOTE...:

- SIDE SLOPES ARE ILLUSTRATIVE AND THEY SHALL BE DESIGNED AND PROFILED BY THE CONTRACTOR FOR BOTH THE TEMPORARY AND PERMANENT CONDITION.

100 0 100 200 metres

SCALE - 1:2000 (A1)

REV	DATE	REVISION	DRN	CHK

Arch Henderson 1919

Civil Engineers
Structural Engineers
Architects
CDM Co-ordinators
Geotechnical services
Environmental services

26 Rubislaw Terrace, Aberdeen. AB10 1XE.
Tel : 01224 631122 - Fax : 01224 632233.
www.arch-henderson.co.uk - email : aberdeen@arch-henderson.co.uk

Offices in : Aberdeen, Dundee, Falkland Islands, Glasgow, Lerwick, Stromness and Thurso

PROJECT :
ABERDEEN HARBOUR BOARD
Aberdeen Harbour Expansion Project

TITLE :
DREDGING WORKS - EIA REPORT
GENERAL ARRANGEMENT PLAN

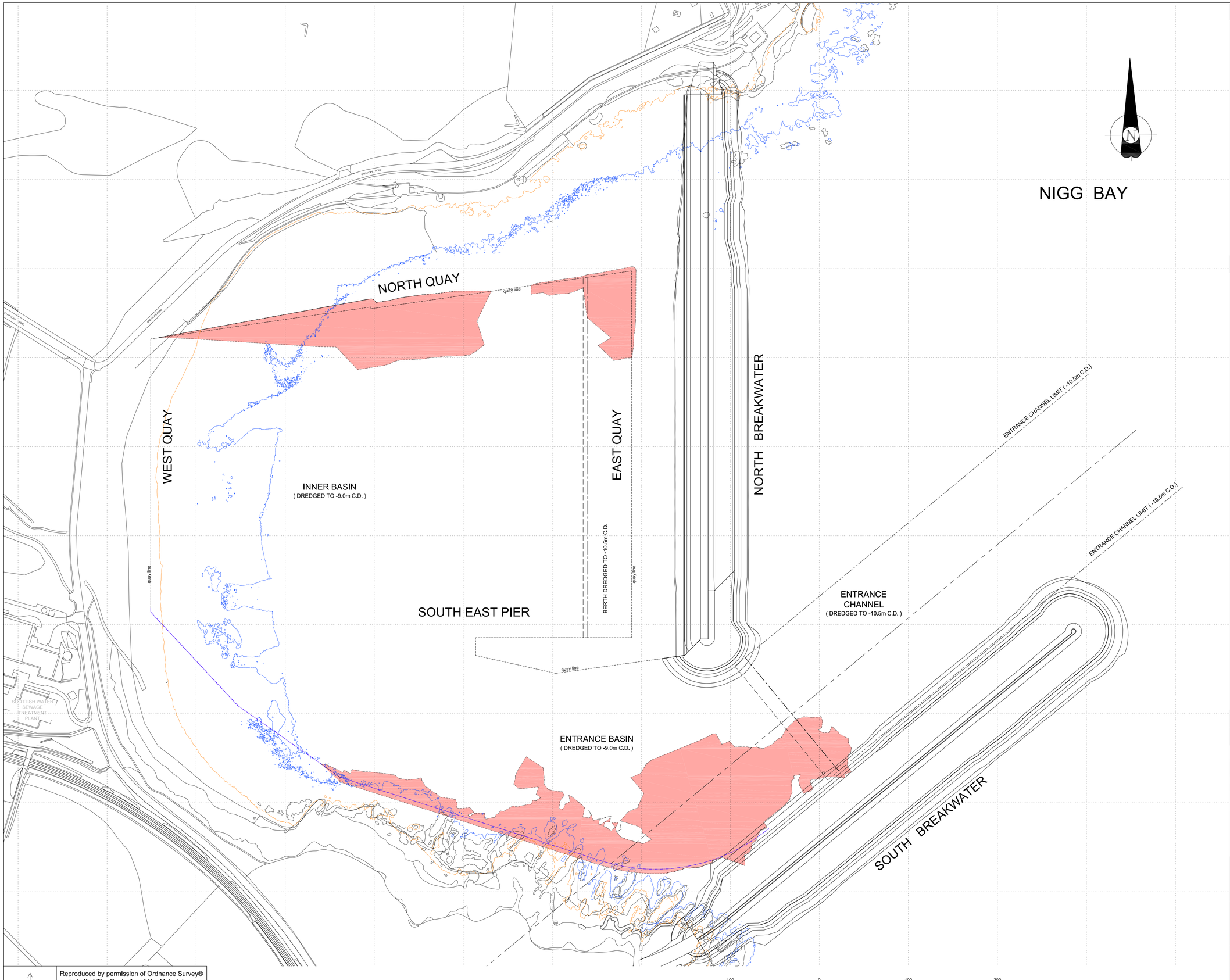
DRAWN :	DATE :	CHECKED :	DATE :
K.M.	16-10-15	I.T.	16-10-15

SCALE : (A1)	DRAWING STATUS :
1:2000	INFORMATION

DRAWING No : 121106 - 1013 REV : -

Drawing 03.Areas_of_rock_dredging_121106-1014(-)

Original application November 2015: withdrawn



NOTES...:-

1. ALL LEVELS ARE GIVEN IN METRES ABOVE ADMIRALTY CHART DATUM (mC.D).
2. CO-ORDINATES ARE TO ORDNANCE SURVEY GRID (O.S.G.B.1936)

DRAWING LEGEND...:-

- AREA OF ROCK REMOVAL
- M.H.W.S — MEAN HIGH WATER TIDE LIMIT
- M.L.W.S — MEAN LOW WATER TIDE LIMIT

REV	DATE	REVISION	DRN	CHK

Arch Henderson 1919
Civil Engineers
Structural Engineers
Architects
CDM Co-ordinators
Geotechnical services
Environmental services
26 Rubislaw Terrace, Aberdeen. AB10 1XE.
Tel : 01224 631122 - Fax : 01224 632233.
www.arch-henderson.co.uk - email : aberdeen@arch-henderson.co.uk
Offices in : Aberdeen, Dundee, Falkland Islands, Glasgow, Lerwick, Stromness and Thurso

PROJECT :
ABERDEEN HARBOUR BOARD
Aberdeen Harbour Expansion Project

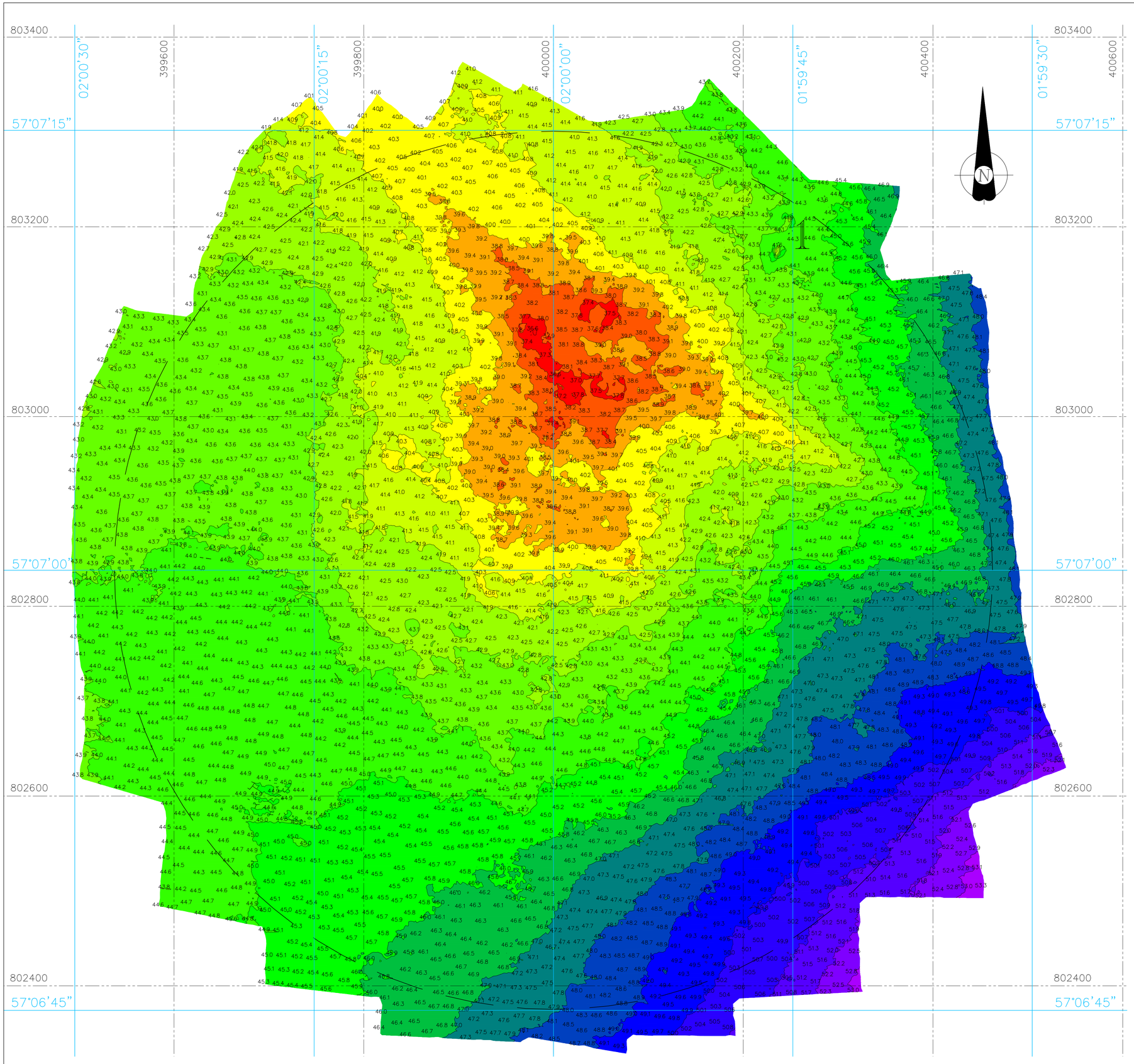
TITLE :
DREDGING WORKS - EIA REPORT
INDICATIVE AREAS OF ROCK DREDGING

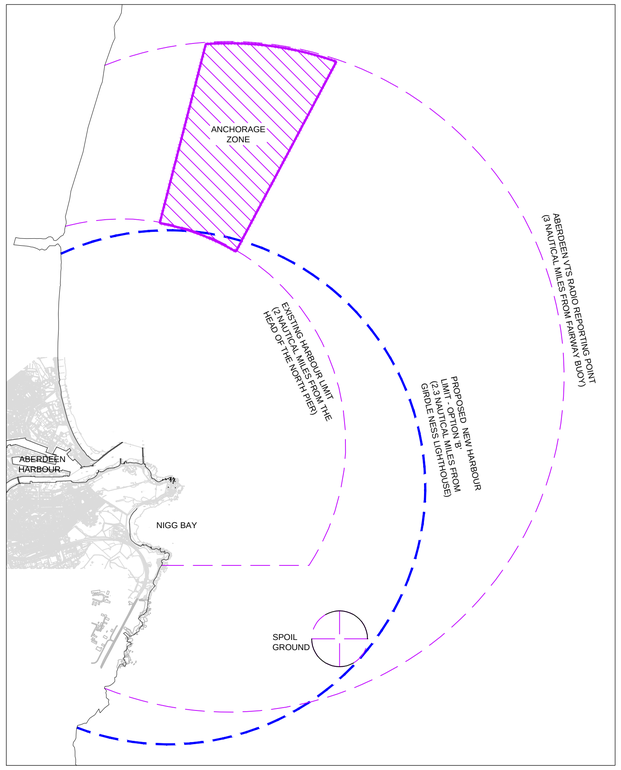
DRAWN :	DATE :	CHECKED :	DATE :
K.M.	16-10-15	I.T.	16-10-15

SCALE : (A1)	DRAWING STATUS :
1:2000	INFORMATION

DRAWING No : 121106 - 1014 REV : -

Drawing 04.Offshore_disposal_site_121106-1010(-) *Original application November 2015: withdrawn*





LOCATION PLAN
(SCALE 1:50,000)

Notes

1. Spoil ground Centre co-ordinate = 400000,802838 (57° 07' N,02° 00' W)
2. Spoil ground dimension = 0.25 Nautical Miles radius (462.8 Metres)
3. Survey carried out using Reson 7125sv Multibeam Echo Sounder, Applanix PosMV Positioning System and Hypack Data Acquision and Post Processing Software.
4. Co-ordinates are to Ordnance Survey Grid(O.S.G.B.1936)
5. All soundings are reduced to Admiralty Chart Datum 1975 in Metres
6. Tidal corrections are from the Aberdeen Harbour tide gauge
7. Obstruction 1 = 3.6 Metre projection from the seabed over a length of approx. 13 and 6M Metres (Wreck)
8. Drawing Reference...:

   CH12-006-SG - Spoil ground Batheymetric Survey (29-11-12) Post Capital Dredge of Channel (Aberdeen Harbour Board)

REV	DATE	REVISION	DRN	CHK

Arch Henderson 1919
Civil Engineers
Structural Engineers
Architects
CDM Co-ordinators
Geotechnical services
Environmental services
26 Rubislaw Terrace, Aberdeen. AB10 1XE.
Tel : 01224 631122 - Fax : 01224 632233.
www.arch-henderson.co.uk - email : aberdeen@arch-henderson.co.uk
Offices in : Aberdeen, Dundee, Glasgow, Lerwick, Lisboa (Portugal), Stromness and Thurso

PROJECT :
ABERDEEN HARBOUR BOARD
Aberdeen Harbour Expansion : Nigg Bay.

TITLE :
Aberdeen Harbour Board - Spoil Ground Bathymetric Survey. Date : 12-11-29

DRAWN :	DATE :	CHECKED :	DATE :
K.M	13-05-15	G.W.A.	07/08/14

SCALE : (A1)	DRAWING STATUS :
1:50000, 1:2500	INFORMATION

DRAWING No : 121106 - 1010 REV : -