

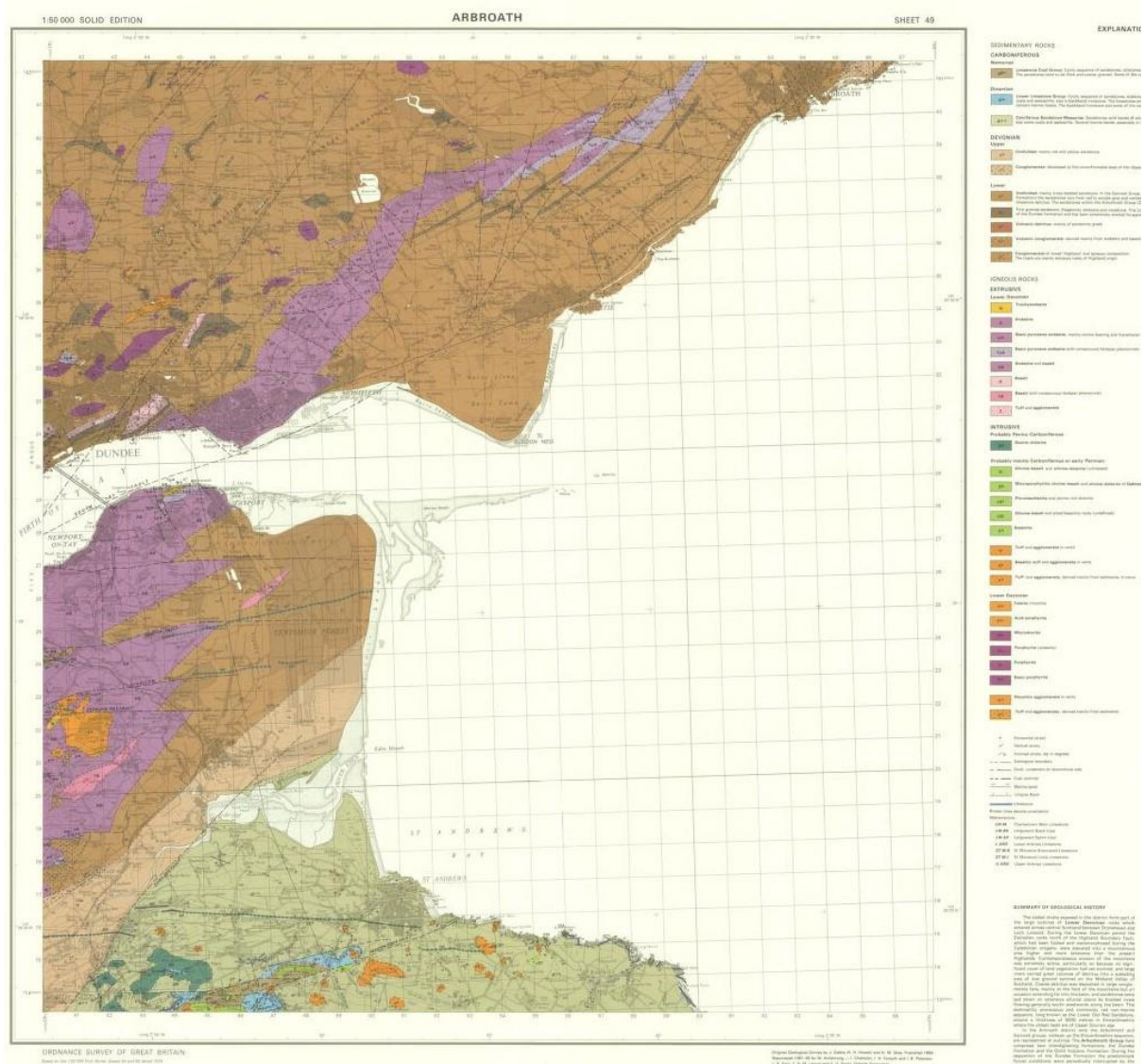
Geotechnical
& Bathymetric
Investigation
For
Mara seaweed

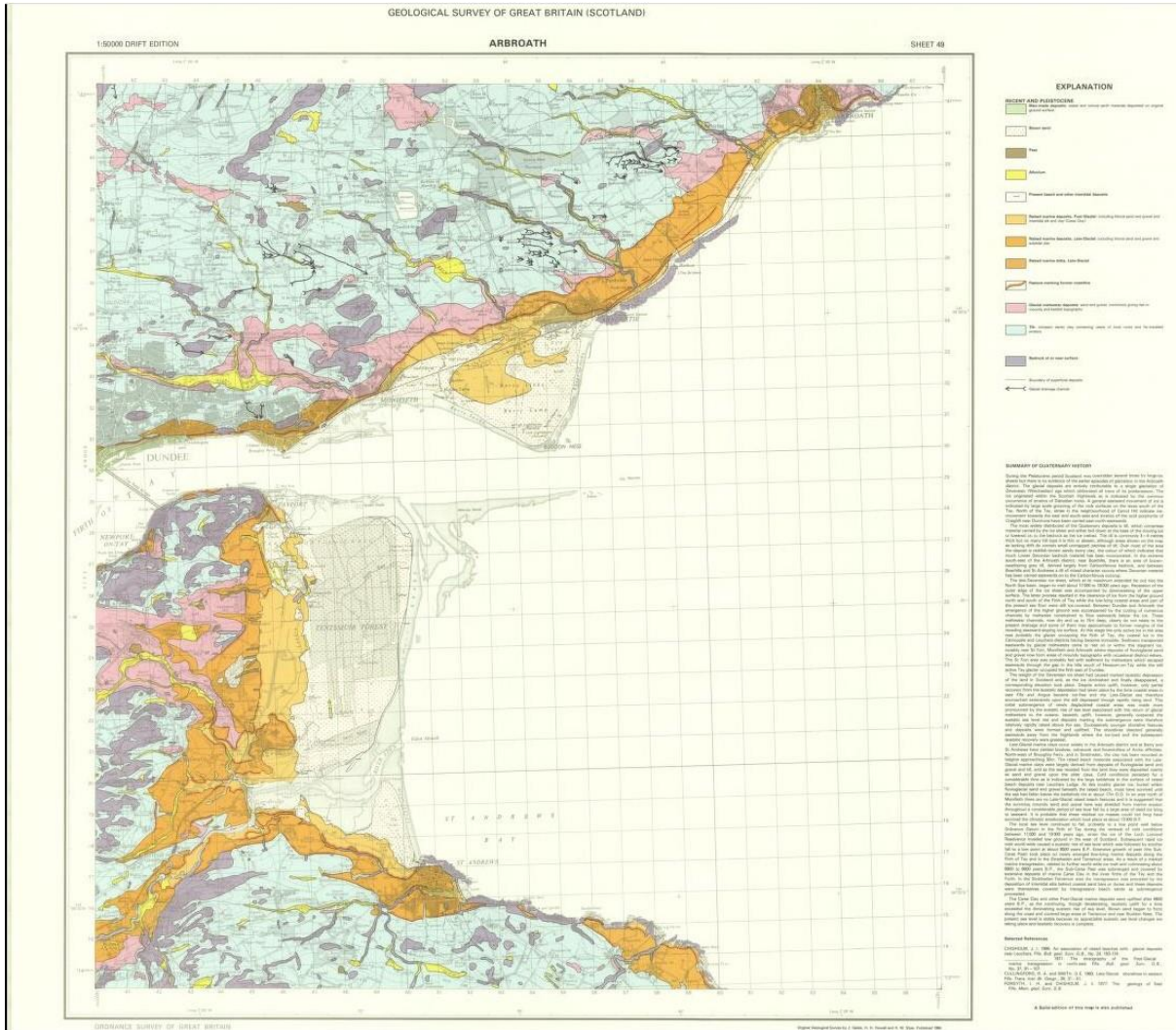
20TH FEBRUARY 2022

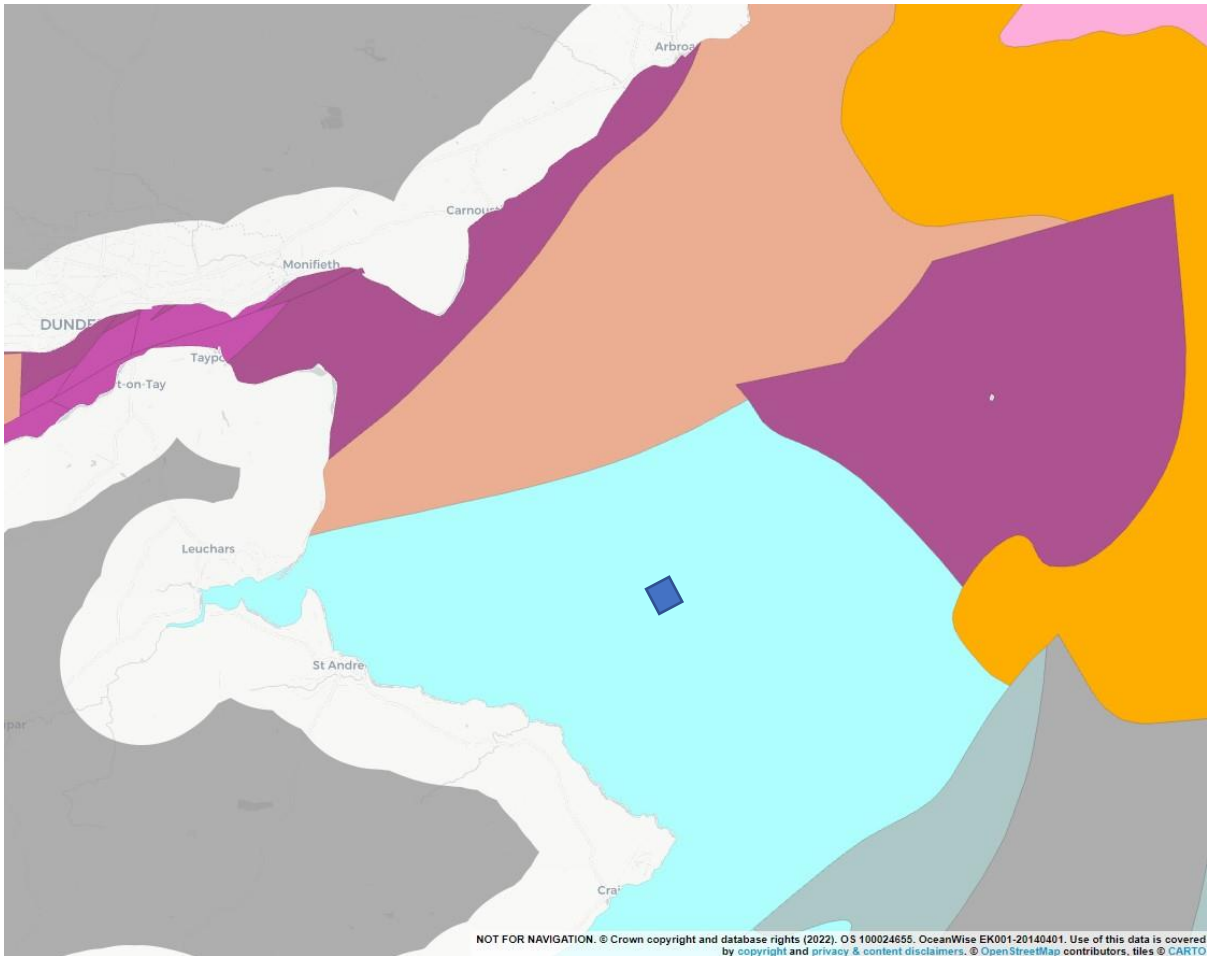
Summary

The data in this document has been sourced from the British Geological Survey, including the Offshore Division and Marine Scotland's National Marine Plan interactive mapping tool.

- Sheet 49 of the British Geological Survey maps of the UK provides highly accurate information on the geology of the St Andrews Bay area, both the bedrock ("Solid") and the overburden ("Drift").
- The sub-bottom character of the seabed in the St Andrews Bay area can be inferred with a high level of confidence from this surrounding information. The bedrock underlying St Andrews Bay is Calciferous Sandstone Measures comprising sandstones with bands of siltstone, mudstone, limestone and dolomite. This extends to a fault in the rockhead well to the East of our area of interest. The overlying strata East of this fault is a Red Sandstone.
- The seabed sediment sampling very close to the proposed site (Sample 1) and the 4 nearest other samples to the site all classify as sand. This appears and is likely to be an extensive area of homogenous seabed.
- The bathymetry is also homogenous over an extensive area being overall flat with only a very slight gradient (<1%). This means that current data is likely to be more reliable with less likelihood of uncaptured anomalies.
- Soundings taken from the boat during the ADCP deployment and recovery indicated a flat, homogenous seabed of medium to firm hardness which is characteristic of sand.
- Seabed character at the proposed site is highly suitable for geotechnical anchoring such as screw piling and is likely to provide good holding.
- It should be noted that the sediment depth is not known. This can be established either by sub-bottom profiling or by trial piling.



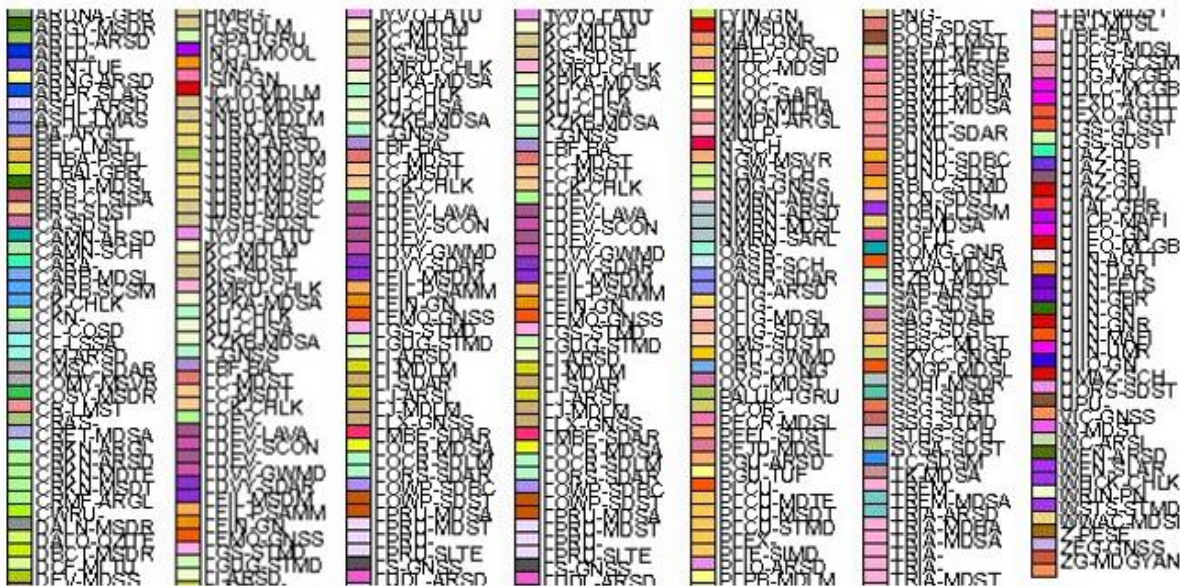




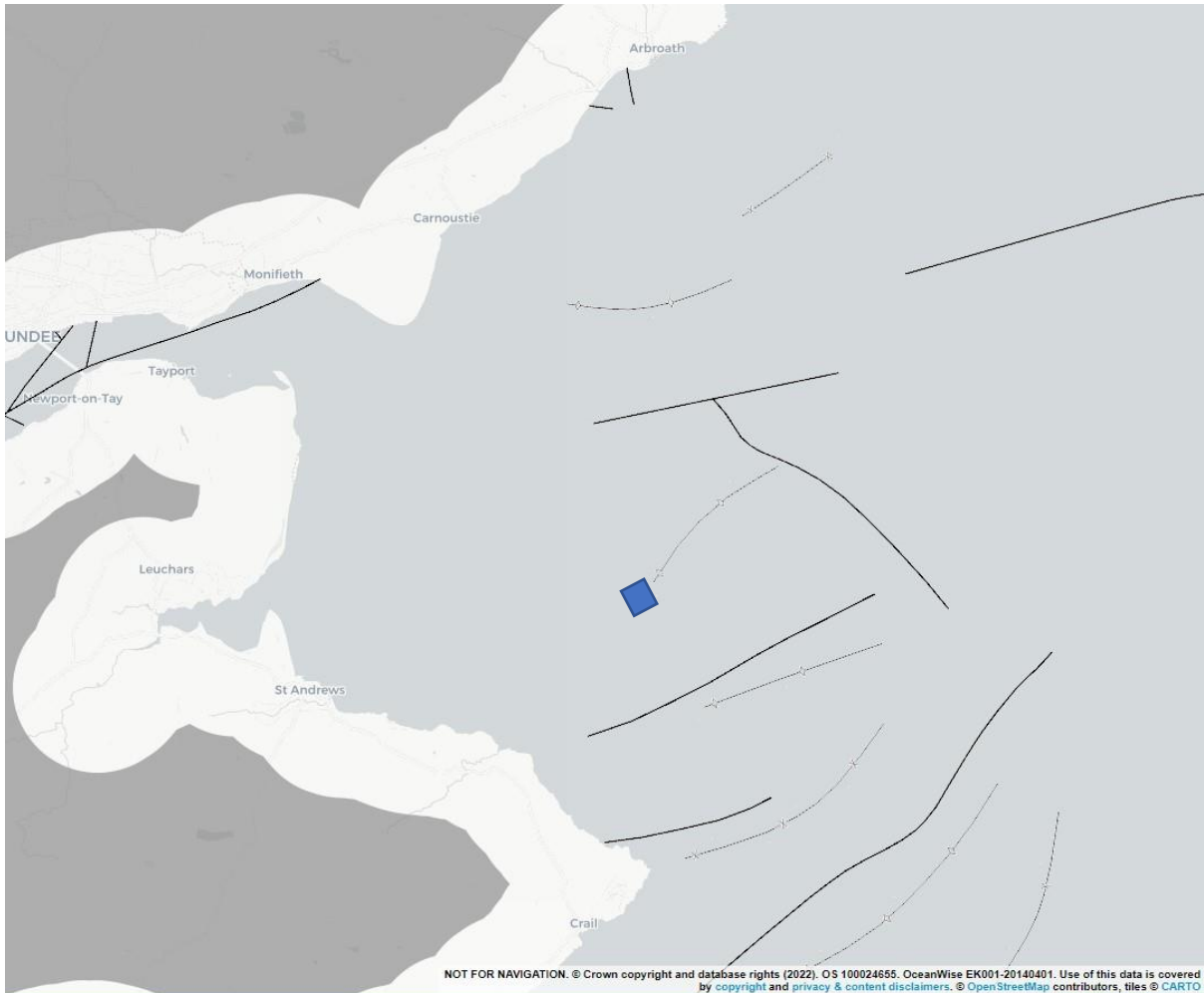
Forth and Tay region (Mask)



BGS Offshore 1:250 000 scale marine bedrock polygons (BGS WMS)



Geotechnical Investigation for Mara Rev2

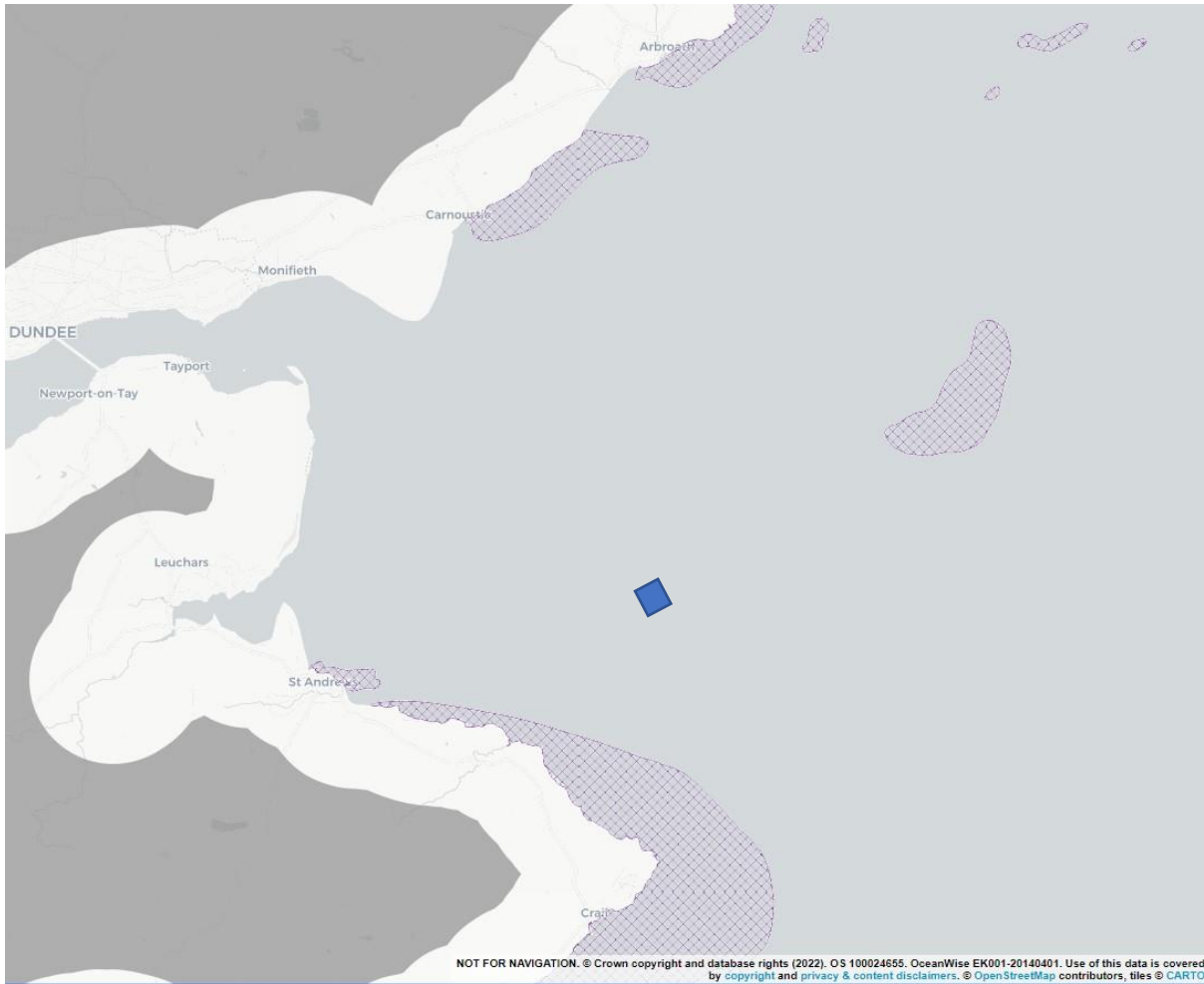


Forth and Tay region (Mask)



BGS Offshore 1:250 000 scale marine bedrock linear features (BGS WMS)

- ↔ Axial plane trace of major anticline
- ↘ Axial plane trace of major syncline
- Fault at rock head
- ▲ Thrust Fault; barbs on hanging wall side
- ▲▲ Trace of lower hinge of major monocline

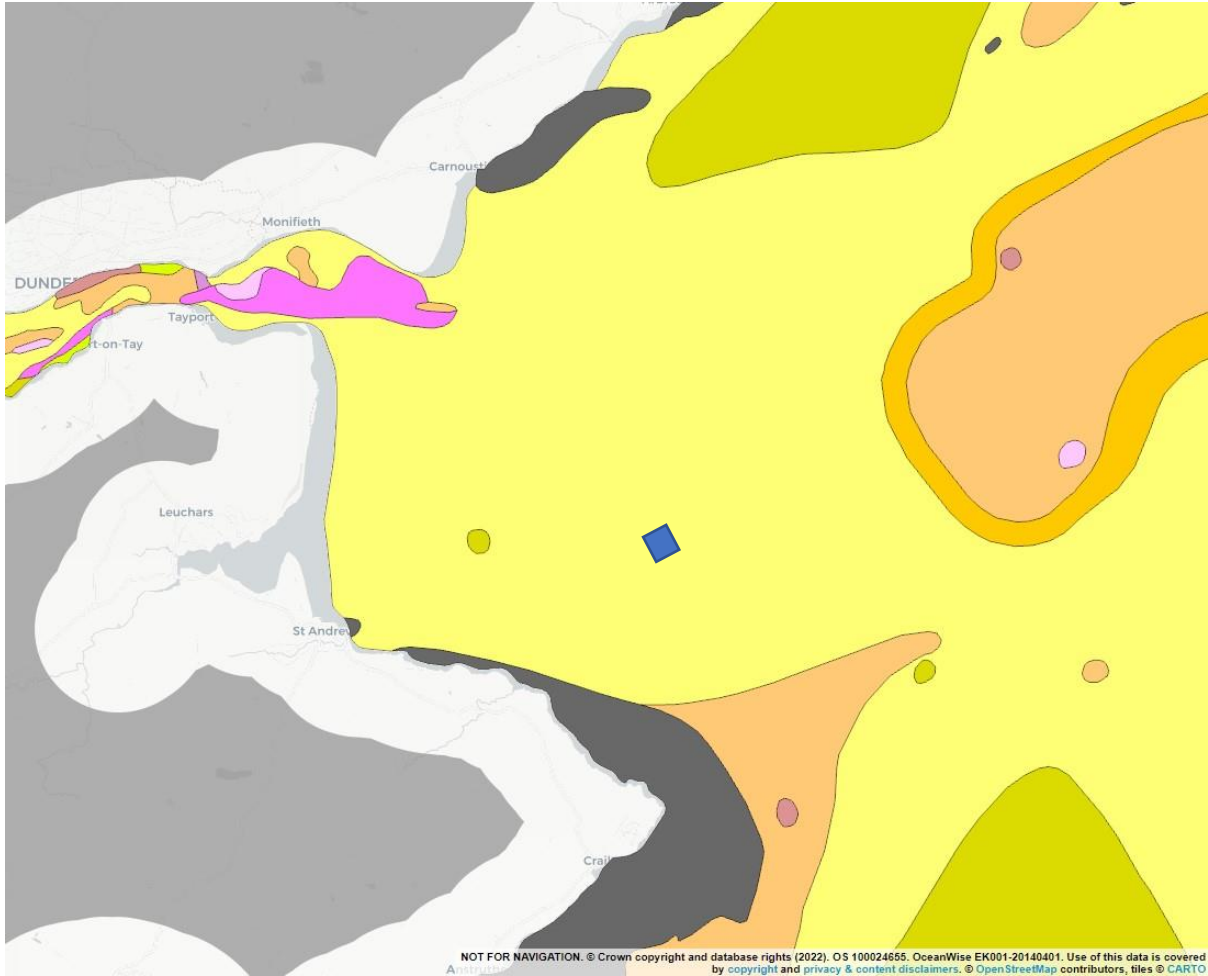


Forth and Tay region (Mask)



BGS Offshore 1:250 000 scale hard substrate (BGS WMS)





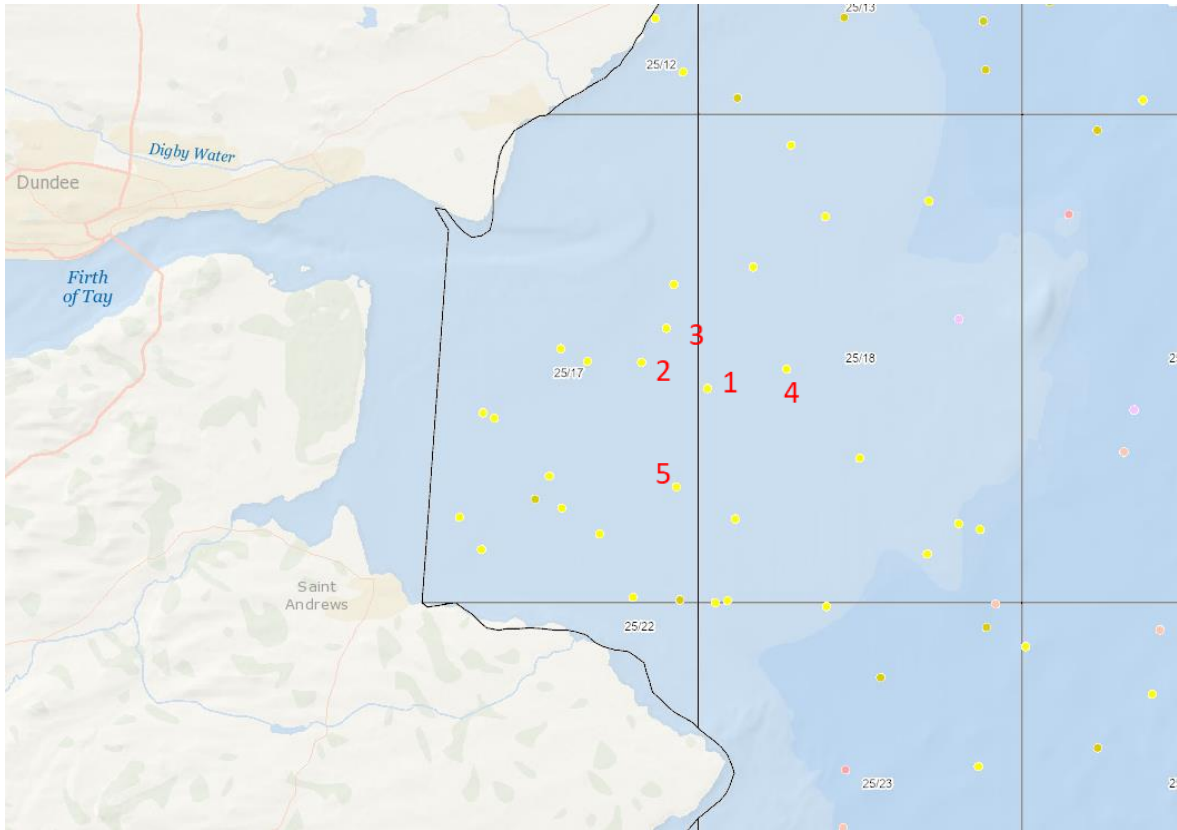
Forth and Tay region (Mask)



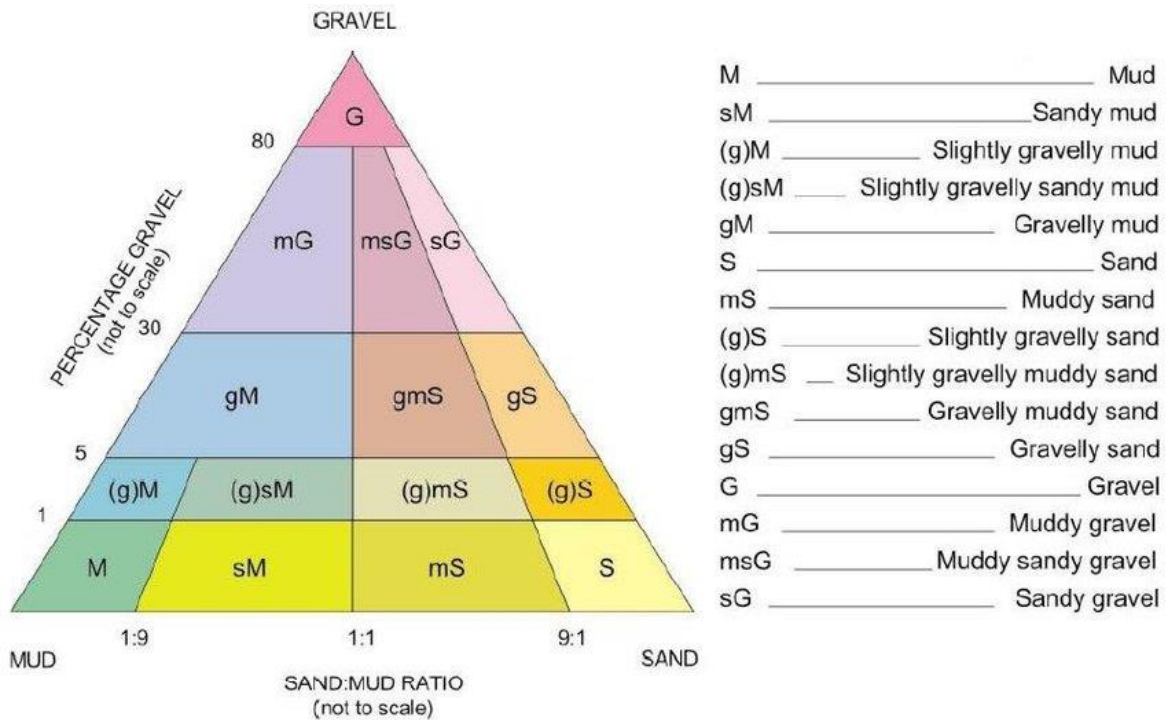
BGS Offshore 1:250 000 scale sea bed sediment (BGS WMS)

- LEX_RCS_D
- MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - MUSSEL DEPOSIT
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - GRAVEL (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - GRAVELLY MUD (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - GRAVELLY SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - MUDDY GRAVEL (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - MUD (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - MUDDY SANDY GRAVEL (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - MUDDY SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SLIGHTLY GRAVELLY MUD (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SLIGHTLY GRAVELLY MUDDY SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SLIGHTLY GRAVELLY SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SLIGHTLY GRAVELLY SANDY MUD (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - GRAVELLY MUDDY SAND (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SANDY GRAVEL (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - SANDY MUD (SEA BED SEDIMENT, BASED ON FOLK)
 - MARINE SEDIMENTS, HOLOCENE (UNDIFFERENTIATED) - GRAVEL, SAND AND SILT
 - MARINE SEDIMENTS, PLEISTOCENE (UNDIFFERENTIATED) - DIAMICTON
 - PLEISTOCENE SEDIMENTS (UNDIFFERENTIATED) - CLAY AND SAND
 - PALAEOZOIC OR QUATERNARY ROCK AND SEDIMENT (UNDIFFERENTIATED) [OFFSHORE ONLY]
 - PALAEOZOIC OR QUATERNARY ROCK OR DIAMICTON (UNDIFFERENTIATED) [OFFSHORE ONLY]
 - UNDIFFERENTIATED ROCK

British Geological Survey - Seabed sediments Sample Locations



British Geological Survey - Seabed sediments classification used (Folk 1954)



PSA_DATA_ID: 65245253

ACTIVITY_ID: 1954868

SAMPLE_NAME: +56-003/540/GS/1

TERMS_OF_USE: Available under the Open Government Licence subject to the following acknowledgement accompanying the reproduced BGS materials "Contains British Geological Survey materials ©UKRI [year]"

TERMS_OF_USE_URL: [Read](#)

SAMPLE_ALIAS: FA 781

SAMPLE_SOURCE: Cruise: 1973/WH/12

CLIENT: British Geological Survey

CONTRACTOR: George Wimpey and Co Ltd

EQUIPMENT_TYPE: Grab: Shipek

EQUIPMENT_START_DATE: 13/06/1973 04:03:00

EPSG_CODE: 4230

EPSG: ED50

X: -2.59298

Y: 56.40713

XY_SOURCE: Main Chain Decca

X_ED50: -2.59298

Y_ED50: 56.40713

X_WGS84: -2.59461

Y_WGS84: 56.4064

X_BNG: 363404

Y_BNG: 723954

DEPTH_UNITS: metres

WATER_DEPTH: Null

DEPTH_DATUM: Null

DEPTH_SOURCE: Null

TERMINAL_DEPTH: Null

DEPTH_TOP: 0

DEPTH_BASE: 0

ANALYSIS_SOURCE: Legacy particle size analysis of the gravel, sand and mud fractions of offshore samples, these include folk analysis, phi and half-phi sand analysis and carbonate analysis based on folk fractions and are primarily derived from handwritten sample station data sheets. For a small proportion of the dataset, there is an unresolved issue with weight measurements containing a mixture of grams/percent where only grams should be stored. BGS data input methodologies used in the past between northern and southern parts of BGS vary. The underlying PHI data values are sound except where human error may have occurred. Where the sand PHI weight analysed was a split/fraction of the total sand component of the sample the northern and southern parts of BGS adopted differing data recording methods. The northern part of BGS generally recorded the sand PHI weight for each PHI interval for the actual volume of sample analysed. The southern part of BGS generally took the sand PHI weight for each PHI interval then calculated the percentage of each PHI sand interval and used these values to back calculate the PHI sand weight representative of the total sand which was then recorded in the database.

FOLK_CLASS: S

FOLK: Sand (Sea bed sediment, based on Folk)

WEIGHT: 212.66

WEIGHT_UNITS: grams

GRAV: 0.08

SAND: 97.84

MUD: 2.09

GSM_UNITS: percent

TGRAV: 0.16

CGRAV: 100

TSAND: 26.81

CSAND: 4.36

TMUD: Null

CMUD: Null

CTOT: Null

CARBONATE_UNITS: percent

PHI_MI_6_5: Null

PHI_MI_6_0: Null



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

PHI_MI_5_5: Null
PHI_MI_5_0: Null
PHI_MI_5: Null
PHI_MI_4_5: Null
PHI_MI_4_0: Null
PHI_MI_4: Null
PHI_MI_3_5: Null
PHI_MI_3_0: Null
PHI_MI_3: Null
PHI_MI_2_5: Null
PHI_MI_2_0: Null
PHI_MI_2: Null
PHI_MI_1_5: Null
PHI_MI_1_0: Null
PHI_MI_1: Null
PHI_MI_0_5: Null
PHI_MI_0_25: Null
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PHI_0_0: Null
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PHI_12: Null
PHI_12_0: Null
PHI_12_5: Null
PHI_13: Null
PHI_UNITS: Null
ADDITIONAL_INFO: Null
CONFIDENTIALITY: unclassified (open file)

Geotechnical Investigation for Mara Rev2

ACCESSUSE_RESTRICT: unrestricted use, copyright acknowledgement

SHAPE_WGS84: Point

Sediment: Folk Classification SAMPLE 2

PSA_DATA_ID: 65245338

ACTIVITY_ID: 2014121

SAMPLE_NAME: +56-003/468/GS/1

TERMS_OF_USE: Available under the Open Government Licence subject to the following acknowledgement accompanying the reproduced BGS materials "Contains British Geological Survey materials ©UKRI [year]"

TERMS_OF_USE_URL: [Read](#)

SAMPLE_ALIAS: FA 678

SAMPLE_SOURCE: Cruise: 1973/WH/2

CLIENT: British Geological Survey

CONTRACTOR: Null

EQUIPMENT_TYPE: Grab: Shipek

EQUIPMENT_START_DATE: 5/10/1973

EPSG_CODE: 4230

EPSG: ED50

X: -2.63364

Y: 56.41616

XY_SOURCE: Main Chain Decca

X_ED50: -2.63364

Y_ED50: 56.41616

X_WGS84: -2.63527

Y_WGS84: 56.41543

X_BNG: 360904

Y_BNG: 724981

DEPTH_UNITS: metres

WATER_DEPTH: 24

DEPTH_DATUM: Depth below instantaneous sea level (no correction)

DEPTH_SOURCE: Null

TERMINAL_DEPTH: Null

DEPTH_TOP: 0

DEPTH_BASE: 0

ANALYSIS_SOURCE: Legacy particle size analysis of the gravel, sand and mud fractions of offshore samples, these include folk analysis, phi and half-phi sand analysis and carbonate analysis based on folk fractions and are primarily derived from handwritten sample station data sheets. For a small proportion of the dataset, there is an unresolved issue with weight measurements containing a mixture of grams/percent where only grams should be stored. BGS data input methodologies used in the past between northern and southern parts of BGS vary. The underlying PHI data values are sound except where human error may have occurred. Where the sand PHI weight analysed was a split/fraction of the total sand component of the sample the northern and southern parts of BGS adopted differing data recording methods. The northern part of BGS generally recorded the sand PHI weight for each PHI interval for the actual volume of sample analysed. The southern part of BGS generally took the sand PHI weight for each PHI interval then calculated the percentage of each PHI sand interval and used these values to back calculate the PHI sand weight representative of the total sand which was then recorded in the database.

FOLK_CLASS: S

FOLK: Sand (Sea bed sediment, based on Folk)

WEIGHT: 226.53

WEIGHT_UNITS: grams

GRAV: 0.03

SAND: 92.93

MUD: 7.04

GSM_UNITS: percent

TGRAV: 0.06

CGRAV: 100

TSAND: 35.42

CSAND: 3.61

TMUD: Null

CMUD: Null

CTOT: Null



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

CARBONATE_UNITS: percent

PHI_MI_6_5: Null
PHI_MI_6_0: Null
PHI_MI_5_5: Null
PHI_MI_5_0: Null
PHI_MI_5: Null
PHI_MI_4_5: Null
PHI_MI_4_0: Null
PHI_MI_4: Null
PHI_MI_3_5: Null
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PHI_MI_0_5: Null
PHI_MI_0_25: Null
PHI_0: Null
PHI_0_0: Null
PHI_0_5: Null
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PHI_12: Null
PHI_12_0: Null
PHI_12_5: Null
PHI_UNITS: Null



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

ADDITIONAL_INFO: Null

CONFIDENTIALITY: unclassified (open file)

ACCESSUSE_RESTRICT: unrestricted use, copyright acknowledgement

SHAPE_WGS84: Point

Sediment: Folk Classification SAMPLE 3

PSA_DATA_ID: 65237522

ACTIVITY_ID: 1954865

SAMPLE_NAME: +56-003/534/GS/1

TERMS_OF_USE: Available under the Open Government Licence subject to the following acknowledgement accompanying the reproduced BGS materials "Contains British Geological Survey materials ©UKRI [year]"

TERMS_OF_USE_URL: [Read](#)

SAMPLE_ALIAS: FA 775

SAMPLE_SOURCE: Cruise: 1973/WH/12

CLIENT: British Geological Survey

CONTRACTOR: George Wimpey and Co Ltd

EQUIPMENT_TYPE: Grab: Shipek

EQUIPMENT_START_DATE: 13/06/1973 00:30:00

EPSG_CODE: 4230

EPSG: ED50

X: -2.61816

Y: 56.42771

XY_SOURCE: Main Chain Decca

X_ED50: -2.61816

Y_ED50: 56.42771

X_WGS84: -2.61979

Y_WGS84: 56.42698

X_BNG: 361870

Y_BNG: 726258

DEPTH_UNITS: metres

WATER_DEPTH: 15

DEPTH_DATUM: Depth below instantaneous sea level (no correction)

DEPTH_SOURCE: Null

TERMINAL_DEPTH: Null

DEPTH_TOP: 0

DEPTH_BASE: 0

ANALYSIS_SOURCE: Legacy particle size analysis of the gravel, sand and mud fractions of offshore samples, these include folk analysis, phi and half-phi sand analysis and carbonate analysis based on folk fractions and are primarily derived from handwritten sample station data sheets. For a small proportion of the dataset, there is an unresolved issue with weight measurements containing a mixture of grams/percent where only grams should be stored. BGS data input methodologies used in the past between northern and southern parts of BGS vary. The underlying PHI data values are sound except where human error may have occurred. Where the sand PHI weight analysed was a split/fraction of the total sand component of the sample the northern and southern parts of BGS adopted differing data recording methods. The northern part of BGS generally recorded the sand PHI weight for each PHI interval for the actual volume of sample analysed. The southern part of BGS generally took the sand PHI weight for each PHI interval then calculated the percentage of each PHI sand interval and used these values to back calculate the PHI sand weight representative of the total sand which was then recorded in the database.

FOLK_CLASS: S

FOLK: Sand (Sea bed sediment, based on Folk)

WEIGHT: 38.29

WEIGHT_UNITS: grams

GRAV: 0.08

SAND: 95.09

MUD: 4.83

GSM_UNITS: percent

TGRAV: 0.03

CGRAV: 100

TSAND: Null

CSAND: 4.1

TMUD: Null



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

CMUD: 4.4
CTOT: 4.19
CARBONATE_UNITS: percent
PHI_MI_6_5: Null
PHI_MI_6_0: Null
PHI_MI_5_5: Null
PHI_MI_5_0: Null
PHI_MI_5: Null
PHI_MI_4_5: Null
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PHI_MI_3_0: Null
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PHI_MI_2_0: Null
PHI_MI_2: Null
PHI_MI_1_5: Null
PHI_MI_1_0: Null
PHI_MI_1: Null
PHI_MI_0_5: Null
PHI_MI_0_25: Null
PHI_0: Null
PHI_0_0: Null
PHI_0_5: Null
PHI_1: Null
PHI_1_0: Null
PHI_1_5: Null
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PHI_9_5: Null
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PHI_10_0: Null
PHI_10_5: Null
PHI_11: Null
PHI_11_0: Null
PHI_11_5: Null
PHI_12: Null
PHI_12_0: Null

PHI_12_5: Null
PHI_13: Null
PHI_UNITS: Null
ADDITIONAL_INFO: Null
CONFIDENTIALITY: unclassified (open file)
ACCESSUSE_RESTRICT: unrestricted use, copyright acknowledgement
SHAPE_WGS84: Point

Sediment: Folk Classification SAMPLE 4

PSA_DATA_ID: 65220998
ACTIVITY_ID: 1954906
SAMPLE_NAME: +56-003/488/GS/1
TERMS_OF_USE: Available under the Open Government Licence subject to the following acknowledgement accompanying the reproduced BGS materials "Contains British Geological Survey materials ©UKRI [year]"
TERMS_OF_USE_URL: [Read](#)
SAMPLE_ALIAS: FA 706
SAMPLE_SOURCE: Cruise: 1973/WH/2
CLIENT: British Geological Survey
CONTRACTOR: Null
EQUIPMENT_TYPE: Grab: Shipek
EQUIPMENT_START_DATE: 13/05/1973 22:45:00
EPSG_CODE: 4230
EPSG: ED50
X: -2.5439
Y: 56.41377
XY_SOURCE: Main Chain Decca
X_ED50: -2.5439
Y_ED50: 56.41377
X_WGS84: -2.54553
Y_WGS84: 56.41304
X_BNG: 366438
Y_BNG: 724668
DEPTH_UNITS: metres
WATER_DEPTH: 32
DEPTH_DATUM: Depth below instantaneous sea level (no correction)
DEPTH_SOURCE: Null
TERMINAL_DEPTH: Null
DEPTH_TOP: 0
DEPTH_BASE: 0
ANALYSIS_SOURCE: Legacy particle size analysis of the gravel, sand and mud fractions of offshore samples, these include folk analysis, phi and half-phi sand analysis and carbonate analysis based on folk fractions and are primarily derived from handwritten sample station data sheets. For a small proportion of the dataset, there is an unresolved issue with weight measurements containing a mixture of grams/percent where only grams should be stored. BGS data input methodologies used in the past between northern and southern parts of BGS vary. The underlying PHI data values are sound except where human error may have occurred. Where the sand PHI weight analysed was a split/fraction of the total sand component of the sample the northern and southern parts of BGS adopted differing data recording methods. The northern part of BGS generally recorded the sand PHI weight for each PHI interval for the actual volume of sample analysed. The southern part of BGS generally took the sand PHI weight for each PHI interval then calculated the percentage of each PHI sand interval and used these values to back calculate the PHI sand weight representative of the total sand which was then recorded in the database.
FOLK_CLASS: S
FOLK: Sand (Sea bed sediment, based on Folk)
WEIGHT: 71.42
WEIGHT_UNITS: grams
GRAV: 0.14
SAND: 95.41
MUD: 4.45
GSM_UNITS: percent
TGRAV: 0.1
CGRAV: 100



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

TSAND: Null
CSAND: 3.3
TMUD: Null
CMUD: 5.1
CTOT: 3.52
CARBONATE_UNITS: percent
PHI_MI_6_5: Null
PHI_MI_6_0: Null
PHI_MI_5_5: Null
PHI_MI_5_0: Null
PHI_MI_5: Null
PHI_MI_4_5: Null
PHI_MI_4_0: Null
PHI_MI_4: Null
PHI_MI_3_5: Null
PHI_MI_3_0: Null
PHI_MI_3: Null
PHI_MI_2_5: Null
PHI_MI_2_0: Null
PHI_MI_2: Null
PHI_MI_1_5: Null
PHI_MI_1_0: Null
PHI_MI_1: Null
PHI_MI_0_5: Null
PHI_MI_0_25: Null
PHI_0: Null
PHI_0_0: Null
PHI_0_5: Null
PHI_1: Null
PHI_1_0: Null
PHI_1_5: Null
PHI_2: Null
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PHI_2_5: Null
PHI_3: Null
PHI_3_0: Null
PHI_3_5: Null
PHI_3_75: Null
PHI_4: Null
PHI_4_0: Null
PHI_4_5: Null
PHI_5: Null
PHI_5_0: Null
PHI_5_5: Null
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PHI_11_5: Null
PHI_12: Null
PHI_12_0: Null
PHI_12_5: Null
PHI_13: Null
PHI_UNITS: Null
ADDITIONAL_INFO: Null
CONFIDENTIALITY: unclassified (open file)
ACCESSUSE_RESTRICT: unrestricted use, copyright acknowledgement
SHAPE_WGS84: Point

Sediment: Folk Classification SAMPLE 5

PSA_DATA_ID: 65220685
ACTIVITY_ID: 1954869
SAMPLE_NAME: +56-003/541/GS/1
TERMS_OF_USE: Available under the Open Government Licence subject to the following acknowledgement accompanying the reproduced BGS materials "Contains British Geological Survey materials ©UKRI [year]"
TERMS_OF_USE_URL: [Read](#)
SAMPLE_ALIAS: FA 782
SAMPLE_SOURCE: Cruise: 1973/WH/12
CLIENT: British Geological Survey
CONTRACTOR: George Wimpey and Co Ltd
EQUIPMENT_TYPE: Grab: Shipek
EQUIPMENT_START_DATE: 13/06/1973 04:33:00
EPSG_CODE: 4230
EPSG: ED50
X: -2.61192
Y: 56.37363
XY_SOURCE: Main Chain Decca
X_ED50: -2.61192
Y_ED50: 56.37363
X_WGS84: -2.61355
Y_WGS84: 56.3729
X_BNG: 362202
Y_BNG: 720235
DEPTH_UNITS: metres
WATER_DEPTH: Null
DEPTH_DATUM: Null
DEPTH_SOURCE: Null
TERMINAL_DEPTH: Null
DEPTH_TOP: 0
DEPTH_BASE: 0
ANALYSIS_SOURCE: Legacy particle size analysis of the gravel, sand and mud fractions of offshore samples, these include folk analysis, phi and half-phi sand analysis and carbonate analysis based on folk fractions and are primarily derived from handwritten sample station data sheets. For a small proportion of the dataset, there is an unresolved issue with weight measurements containing a mixture of grams/percent where only grams should be stored. BGS data input methodologies used in the past between northern and southern parts of BGS vary. The underlying PHI data values are sound except where human error may have occurred. Where the sand PHI weight analysed was a split/fraction of the total sand component of the sample the northern and southern parts of BGS adopted differing data recording methods. The northern part of BGS generally recorded the sand PHI weight for each PHI interval for the actual volume of sample analysed. The southern part of BGS generally took the sand PHI weight for each PHI interval then calculated the percentage of each PHI sand interval and used these values to back calculate the PHI sand weight representative of the total sand which was then recorded in the database.
FOLK_CLASS: S
FOLK: Sand (Sea bed sediment, based on Folk)
WEIGHT: 45.95
WEIGHT_UNITS: grams
GRAV: 0.11
SAND: 97.17
MUD: 2.72



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

GSM_UNITS: percent

TGRAV: 0.05

CGRAV: 100

TSAND: Null

CSAND: 3.7

TMUD: Null

CMUD: 3.9

CTOT: 3.81

CARBONATE_UNITS: percent

PHI_MI_6_5: Null

PHI_MI_6_0: Null

PHI_MI_5_5: Null

PHI_MI_5_0: Null

PHI_MI_5: Null

PHI_MI_4_5: Null

PHI_MI_4_0: Null

PHI_MI_4: Null

PHI_MI_3_5: Null

PHI_MI_3_0: Null

PHI_MI_3: Null

PHI_MI_2_5: Null

PHI_MI_2_0: Null

PHI_MI_2: Null

PHI_MI_1_5: Null

PHI_MI_1_0: Null

PHI_MI_1: Null

PHI_MI_0_5: Null

PHI_MI_0_25: Null

PHI_0: Null

PHI_0_0: Null

PHI_0_5: Null

PHI_1: Null

PHI_1_0: Null

PHI_1_5: Null

PHI_2: Null

PHI_2_0: Null

PHI_2_5: Null

PHI_3: Null

PHI_3_0: Null

PHI_3_5: Null

PHI_3_75: Null

PHI_4: Null

PHI_4_0: Null

PHI_4_5: Null

PHI_5: Null

PHI_5_0: Null

PHI_5_5: Null

PHI_6: Null

PHI_6_0: Null

PHI_6_5: Null

PHI_7: Null

PHI_7_0: Null

PHI_7_5: Null

PHI_8: Null

PHI_8_0: Null

PHI_8_5: Null

PHI_9: Null

PHI_9_0: Null

PHI_9_5: Null

PHI_10: Null

PHI_10_0: Null



GEOTECHNICAL INVESTIGATION FOR MARA SEAWEED

PHI_10_5: Null

PHI_11: Null

PHI_11_0: Null

PHI_11_5: Null

PHI_12: Null

PHI_12_0: Null

PHI_12_5: Null

PHI_13: Null

PHI_UNITS: Null

ADDITIONAL_INFO: Null

CONFIDENTIALITY: unclassified (open file)

ACCESSUSE_RESTRICT: unrestricted use, copyright acknowledgement

SHAPE