



NOTICE TO MARINERS

PROJECT: Preesall Underground Gas Storage Facility (brine discharge pipeline)

**SURVEY VESSELS: Aquadynamic
Eagle
Voe Jarl**

**ACTIVITIES: Benthic Survey
UXO Survey
Geotechnical/Archaeological Survey**

DATE: 17 November 2017

ISSUE NO: 01

Notice to Mariners

NIRAS - Scientific Drop Down Camera, Grab and Trawl Survey Operations

Please be advised that NIRAS Consulting Ltd (NIRAS) will be undertaking a seabed survey for scientific monitoring purposes off the Fylde Peninsula to west of Rossall. The survey is being undertaken to provide information on baseline conditions ahead of the planned installation of a 2.3km long pipeline in 2018.

A map of the survey area and positional coordinates are provided below.

Survey operations are planned to take place **from 20th November**. There will be **approximately seven days** at sea, weather dependent. Survey days may not necessarily be consecutive.

BIBBY HYDROMAP - Geophysical Unexploded Ordnance Survey Operations

Please be advised that Bibby Hydromap is undertaking a magnetometer survey (G882 cesium magnetometer) along the proposed pipeline route to acquire a sidescan sonar and multibeam echo sounder data.

Geophysical survey works are planned to commence on **20th November 2017** for a period of **3 days** at sea, weather dependant.

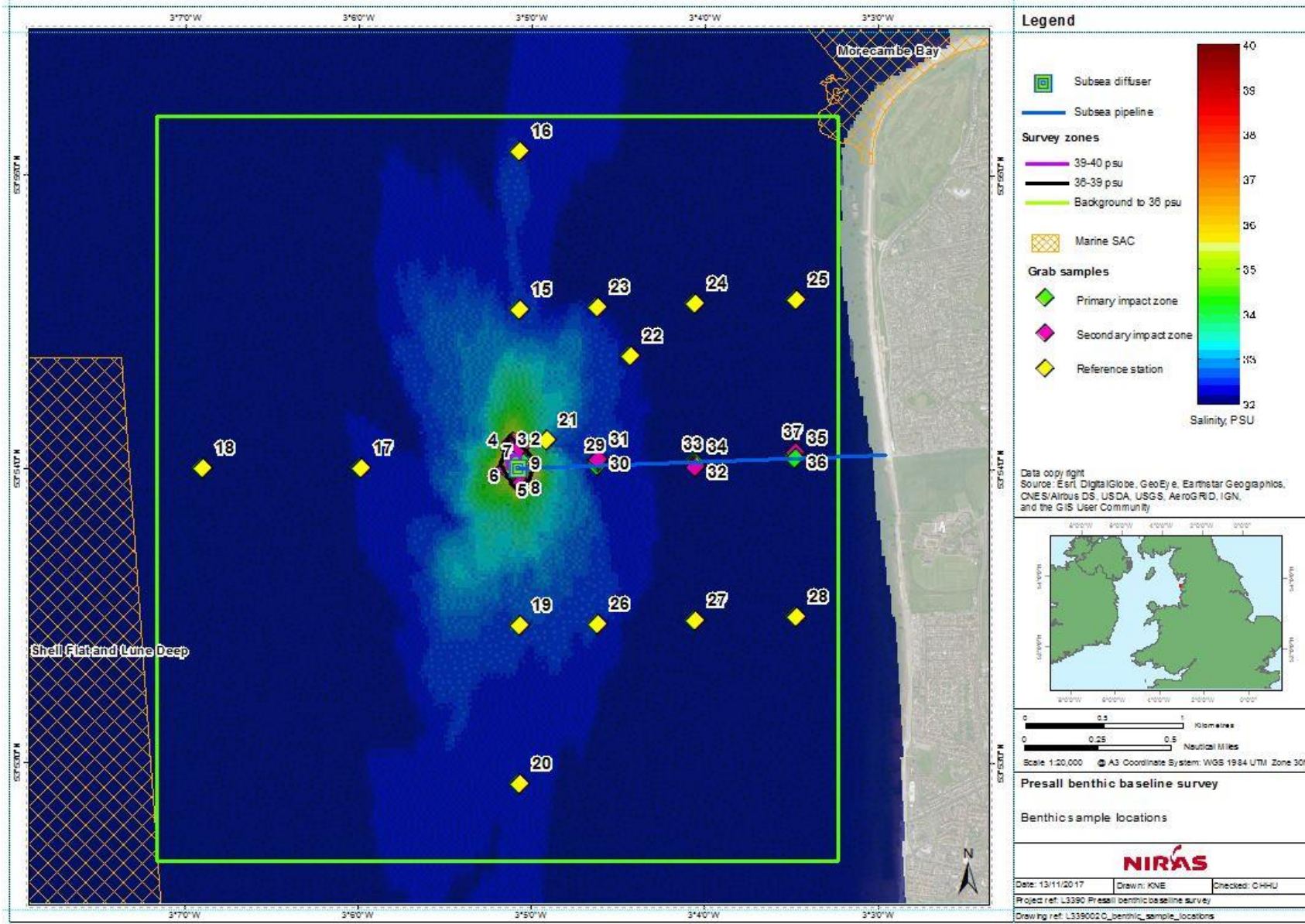
FUGRO – Geotechnical and Archaeological Survey Operations

Please be advised that Fugro is undertaking a geotechnical and archaeological survey along the proposed pipeline route. The scope of works comprises 11no cone penetration tests, 9no vibrocores for archaeological purposed and 4no vibrocores for geotechnical purposes.

Geotechnical and archaeological works are planned to commence in **December 2017** for a period of **6 days** at sea, weather dependant.

Positions defining outer limits of Survey Area

Green Line Survey Area	X WGS84 UTM30N	Y WGS84 UTM30N
NW	492161	5974624
NE	496464	5974624
SW	492161	5969920
SE	496464	5969920



Vessel and Operational Details

NIRAS - Aquadynamic

Aquadyynamic is a 12 meter purpose built survey vessel with a white cabin and black hull. The vessel will operate on a daily basis from Glasson Dock.



Survey operations will involve drop down camera, trawl and grab sampling. A wide berth is requested at all times as the vessel will be restricted in her ability to manoeuvre whilst survey equipment is deployed. The skipper will monitor channel 16 throughout survey work.

The vessel will remain on each survey station location for a period of approximately 15 minutes in order to obtain all required samples. Umbilical cable may potentially trail from the vessel by up to 25m during deployment, depending on tidal conditions. All survey equipment will be recovered by the survey vessel prior to departing the survey location.

Survey work will be predominantly in daylight hours.

Bibby Hydromap – Eagle



Eagle is an 8.9 metre purpose built shallow drafted survey vessel with a draft of 0.50m capable of drying out and hence tailored to shallow water survey works. The catamaran is powered by jet propulsion allowing a high level of manoeuvrability and slow speed control. Safety equipment on board complies with the Maritime Coastguard Agency code of practice for small work boats. The vessel will operate from Fleetwood Marina. Entry and exit is limited to 2 hours before and after high water; transit time to the survey area is estimated at 25 minutes.

A GNSS antennae fixed to the mast allows precise positioning of the vessel during survey works and data provided is integrated into side scan sonar and multibeam echo sounder returns.

The survey will comprise 15no main lines spaced at 4m in an east to west direction parallel to the proposed pipeline route. The survey area will therefore be 60m wide and extend a distance of 350m from the seawall to 2300m from the seawall. Perpendicular cross lines will be acquired to intercept proposed geotechnical locations.

Fugro – Voe Jarl



Voe Jarl is a Damen Multicat 2611 vessel measuring 26m by 11.5m and a draft of 2.3m complying with Maritime Coastguard Agency Workboat Class 1. The vessel will operate from Heysham and survey works will take place on a 12-hour shift basis (0700 – 1900) quayside to quayside.

Operations will continue whilst weather and sea state are within operable limits as defined by the Vessel Master and the Operator. The following conditions are likely to stop operations:

- Wind >20 knots
- Wave height / swell >0.8m
- Currents >1.0 knots.
- Water depths <3.5m

The cone penetration tests will be completed using a Seacalf unit which is lowered into position and operated remotely from the control container on deck. Prior to any testing the unit will be checked to ensure that the equipment is within tolerances. The unit uses friction wheels to push the cone and rod assembly into the seabed at a rate of 20mm per second at a thrust of 50kN.

Vibrocores will be obtained by a Standard Vibrocore (SVC) with barrel lengths of 6m and nominal diameter of 84.1mm. At the sample location, the vessel will complete a holding test to determine if the vessel is stable and then the SVC is lowered to the seabed. Operated from the vessel, a core is taken and the unit is recovered. On deck the sample will be extracted, cut into metre lengths ahead of logging, labelling and storage.



Contact Details

NIRAS

Contact	Details
Vessel	
Aquadynamic	Call Sign: MERC4
NIRAS	
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BIBBY HYDROMAP

Contact	Details
Vessel	
Eagle	Call Sign: VQEZ2
BIBBY HYDROMAP	
Daniel Jenkins Project Manager	0151 3281120 0783 3296126 daniel.jenkins@bibbyhydromap.com

FUGRO

Contact	Details
Vessel	
Voe Jarl	Call Sign: MSBB3
FUGRO	
TBC	TBC