

## **Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), Regulation 22 - EIA Consent Decision**

**Title:** Marine aggregate extraction Area 392/393, known as Hilbre Swash

**Regulatory Approval:** Marine Works (Environmental Impact Assessment) Regulations 2007  
(as amended)

**Operators:**

Lafarge Tarmac Marine Limited\*  
Portland House Bickenhall Lane  
Solihull  
Birmingham  
England  
B37 7BQ

Norwest Sand & Ballast Company Limited  
Millfield Road  
Ettingshall  
Wolverhampton  
United Kingdom  
WV4 6JP

Company No. 02105370      Company No. 01895470

**Report No:** Ref: MM004/10/EIACD

**Location:** Area 392/393, known as Hilbre Swash and located in Liverpool Bay approximately  
12km north of Prestatyn on the north Wales coast.

*\* Company number 02105370 Lafarge Tarmac Marine Limited was previously named Tarmac  
Marine Dredging Limited at the time of application.*

## **Introduction**

Marine aggregate extraction Area 392/393, known as Hilbre Swash and located in Liverpool Bay north of the Flintshire coast, is currently licensed to Lafarge Tarmac Marine Ltd (LTM) and Norwest Sand & Ballast (NSB) Company Ltd (the latter a joint venture between CEMEX Investments Ltd and Tarmac Ltd). Aggregate dredging by these companies has taken place in the current licence area and previously in an area immediately to the south for over 50 years but to continue dredging at Area 392/393 an application for a Marine Licence was submitted for approval by Government regulators.

## **Project Description**

The current licence area straddles both Welsh and English waters. However LTM and NSB applied for a Marine Licence to dredge only the Welsh part of the current licence area and therefore the new application was submitted only to the Welsh Government (WG) for deliberation by Welsh Ministers. The responsibility for determining the application transferred from Welsh Government to Natural Resources Wales (NRW) on the 1<sup>st</sup> April 2013. The existing licence area covers an area of approximately 28.76 km<sup>2</sup> while the new application area is to be reduced by over 24% to approximately 21.76 km<sup>2</sup>.

LTM and NSB applied for a new licence to extract up to 12 million tonnes of aggregate (mainly sand) over 15 years at a maximum annual rate of 1.6 million tonnes and an average annual rate of up to 0.8 million tonnes, split equally between the two companies. LTM owns four purpose built aggregate dredgers which operate on over 20 licensed extraction areas in UK waters. From Hilbre Swash, LTM supplies sand aggregate to wharves in Merseyside and in North Wales. NSB owns a wharf on the Mersey in Liverpool and supplies sand to the region's construction industry, as well as having a licence for dredging at Hilbre Swash.

## **The Environmental Statement (ES)**

**Natural Resources Wales Marine Licensing Team considers the ES to be thorough and well-structured and we are content with the mitigation measures proposed.**

Environmental Sensitivities:

### **Physical Oceanography**

The Coastal Impact Study (CIS) found that over some parts of the study area, close to Area 392/393, lowering of the seabed is predicted to result in some changes to wave conditions, however, there would not be any significant changes in wave conditions farther afield, for example close to the coastline. Alterations to waves as a result of the project are not expected to cause any adverse effect on sandbanks or the coastline. The CIS also showed no impact on the oil and gas pipelines or wind farm infrastructure in Liverpool Bay. The changes caused to physical oceanographic features are considered to be small in magnitude as they will occur over a limited spatial area and will be small scale. Overall the proposed dredging activities will have only impacts of small magnitude on physical oceanographic features.

### **Marine Geology, Geomorphology and Superficial Sediments**

The primary impacts of the dredging work will be the removal of up to 12 million tonnes of sands and gravels, over a period of 15 years. Beyond the dredging area there will be potential effects on localised sediment transport as a result of changes to tidal currents and

waves. Impacts on geology, geomorphology and sediments are predicted to be small to medium magnitude as they will occur over a limited spatial area, mainly within the footprint of the licence area, with lesser impacts extending beyond the footprint due to localised effects on sediment bed load transport processes. Shallow depressions will be created by the removal of sediment during dredging. These localised depressions in the seabed are predicted to become permanent features after dredging ceases. In addition, the CIS predicted that the extent of changes to tidal currents outside of the application area would be very limited, resulting in similarly limited changes to sediment transport that these currents cause. It was concluded that the proposals will not intercept any transport towards the coastlines of Liverpool Bay. The overall evaluation is that dredging activities are likely to have impacts on geology, geomorphology and superficial sediments of minor significance.

### **Coastline**

There is the potential that changes in the morphology of the seabed could have a range of impacts on the coastline. These include potential changes to scour and deposition and sediment transport, beach drawdown, wave height and currents. Stretches of the coastline of Liverpool Bay are considered to be important in regard to a number of functions including coastal protection, amenity use and nature conservation including nationally or internationally protected sites. Those areas not protected by hard defences and which comprise coastal dunes would be sensitive to coastal impacts. The CIS found that effects of the proposed dredging at Area 392/393 would be generally localised to the dredge site, therefore, the overall impacts of the proposed dredging on the coastline is not significant.

### **Sediment and Water Quality**

Coarse sediments, particularly those in exposed offshore locations such as Area 392/393, are not generally associated with contaminants which, if pollutant inputs are present, are more likely to be found in areas with high proportions of silts and clays. Overlying surficial sediments which could potentially contain anthropogenic contaminants has previously been dredged and the surficial sediments removed, and remaining sediments are therefore unlikely to contain anthropogenic contaminants. As a result, the impact on chemical sediment and water quality as a result of the dredging operations is not significant. The chemical water quality at Area 392/393 is classified under the Water Framework Directive River Basin Management Plan Western Wales as „good“ with a predicted chemical quality status for 2015 of „good“. The nearest designated bathing water to the site is Prestatyn on the North Wales coast. The bathing water there is described by the Environment Agency as typically achieving a higher water quality standard i.e. exceeding the required level of compliance.

The proposed dredging activities will temporarily increase suspended sediment levels in some areas but this is not expected to affect water quality classification compliance as elevated suspended sediment or turbidity parameters are not water quality classification criteria. Given the distances offshore no impacts on the aesthetic character of Bathing Waters are predicted. The magnitude of impacts on water quality as a result of dredge plumes and elevated suspended sediment are considered to be negligible (i.e. within the ranges of normal natural fluctuations) and unlikely to breach any water quality standards or classifications. As a result the potential impact has been assessed as being not significant.

### **Air Quality**

Carbon dioxide emissions from dredgers in Area 392/393 are a minor contributor to UK carbon dioxide emissions (approximately 0.0025% of the UK's annual CO2 emissions at maximum annual extraction); in 2009 the UK released approximately 473 million tonnes of



CO2 to the atmosphere. The total Greenhouse Gas (GHG) emissions released per year by dredging Area 392/393 over 15 years is low due to the low yearly fuel consumption. The potential impacts that may arise are considered to be a short-term reduction in local air quality, however, emissions are likely to quickly disperse in the generally windy offshore environment. Therefore, the magnitude of impact to air quality is expected to be negligible. The significance of impacts from emissions to air is assessed as not significant. It is worth noting that aggregates operators plan their operations with a view of minimising fuel use and therefore CO2 emissions.

## **BIOLOGICAL ENVIRONMENT**

### **Plankton**

Phytoplankton are an important part of the marine ecosystem as primary producers and zooplankton provide an important function in nutrient transfer from phytoplankton to higher animals. These organisms, however, are highly adaptable to relatively dynamic environmental conditions. Relatively high concentrations of phytoplankton are common in Liverpool Bay, with the highest production values occurring inshore in areas affected by nutrient-rich waters from nearby rivers and coastal discharges such as the Dee Estuary. The overall impact on plankton is considered not significant due to the negligible magnitude of this impact and recoverability of plankton populations to dredging impacts.

### **Benthic Ecology**

Potential impacts on benthic ecology can result from seabed removal, suspended sediment plume and increased turbidity and seabed erosion/deposition, fine sand dispersion and flux. Given the relatively small spatial extent of the dredged area in relation to the extent of the identified benthic biotopes regionally and the medium-term duration of the impact, the magnitude of the impact of seabed removal is considered to be small. Given the medium quality and importance of benthic habitats and species in the area, the impact of sediment removal was considered to result in impacts of minor significance. Fine sand dispersion from the draghead and screening processes could result in changes in sediment particle size of benthic habitats. The magnitude of this impact is considered to be small. Given the medium quality/importance of habitats and species in the area affected, this impact was assessed to be of minor significance.

An increase in suspended sediment concentrations caused by the creation of sediment plumes at the seabed/water interface as a result of aggregate dredging can damage or block respiratory and feeding organs of benthic organisms. The magnitude of the increase in suspended sediment concentrations are negligible and within the range of natural levels occurring in the vicinity of Area 392/393. The main biotopes present within and in the vicinity of Area 392/393 are not considered to be sensitive to suspended sediment plumes and therefore the impact is assessed as not significant.

### **Fish and Shellfish Ecology**

The potential impacts on fish and shellfish from the effects of marine aggregate extraction include loss of suitable habitat for spawning or nursery, direct uptake and damage of individuals and damage or behavioural response to noise and vibrations. None of the species recorded from the application area are protected under UK legislation. The





application area lies in a region considered to be important as a spawning area for flounder and sole, for a number of ray species and potentially for sandeel. Diadromous <sup>(1)</sup> migratory species such as Atlantic salmon and sea lamprey which are protected under the Habitats Directive may pass through the area, however there is no evidence that the application area is important for these species. The assessment of impacts of the proposed dredging activities on fish ecology concluded that long term effects on fish ecology, including species of commercial importance, were not significant.

(1) Species which move between freshwater and the sea at different stages of their lifecycle

### **Marine Mammals**

Compared with other parts of the UK Continental Shelf, Liverpool Bay holds relatively few species of cetaceans. The only species that is regularly sighted throughout the bay is the harbour porpoise which is widespread at low densities. Liverpool Bay supports both common and grey seals, with an important grey seal haul out located on Hilbre Island off the mouth of the Dee Estuary. Potential causes of impacts to marine mammals include injury or death caused by collisions, disturbance and induced behavioural change as a result of increased noise levels and changes to the availability and distribution of food resources.

Given the relatively small area affected compared to the available suitable habitat, the intermittent nature of the impact and the historical use of the site by marine mammals despite ongoing dredging operations it is predicted that the effects of disturbance will be of minor significance for grey seal and not significant for other marine mammal species. As a result of the small likelihood of collisions occurring, the effect of collision impacts is assessed as not significant.

### **Ornithology**

The southern half of Liverpool Bay supports nationally and internationally important populations of a number of seabird species. In particular, Liverpool Bay has been designated as a Special Protection Area due to the internationally important wintering populations of red-throated diver and common scoter it supports.

However the licence area lies out with the main areas of known concentrations for most seabird species within Liverpool Bay, and the wider Liverpool Bay contains abundant alternative foraging habitat to that within the application area. In the context of the ongoing dredging activity, the small area involved in the proposed dredging and the low level of vessel activity compared to other sources of vessel activity within Liverpool Bay, the overall effects to the regional populations of seabirds including red-throated diver, common scoter, auks, gulls and terns were considered to be not significant.

### **Designated Sites**

Within Liverpool Bay and its surrounding coastline there are a number of sites designated for their nature conservation importance including Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar Sites, Sites of Special Scientific Interest (SSSI) and recommended Marine Conservation Zones (rMCZ). The CIS found that there will be no direct impacts to the coastline as a result of the proposed dredging activity and therefore no direct effects on coastal designated sites are predicted. No significant effects are predicted to qualifying interest features of designated sites out with the site boundaries (e.g. foraging seabirds) and therefore overall the effects on coastal designated sites are considered to be

not significant. The application area is sited partly within the Liverpool Bay SPA, however due to the relatively small area affected, the abundance of other suitable habitat, and in the



context of the existing dredging activity, the effects are predicted to be not significant. A Habitats Regulations Assessment (HRA) screening exercise was undertaken in line with the Conservation of Habitats and Species Regulations, 2010 (known as the Habitats Regulations) to determine if proposed dredging at Area 392/393 could have a likely significant effect to the integrity of sites of European importance for nature conservation. As Area 392/393 is sited partly within Liverpool Bay SPA, the HRA considered potential effects to this site, as well as to coastal European sites. The HRA screening exercise concluded that there will not be any likely significant effects to any European sites as a result of the proposed dredging activities at Area 392/393. The findings of the HRA screening process suggest that a full Appropriate Assessment is not required for any of the designated sites considered.

## **HUMAN ENVIRONMENT**

### **Commercial Fisheries**

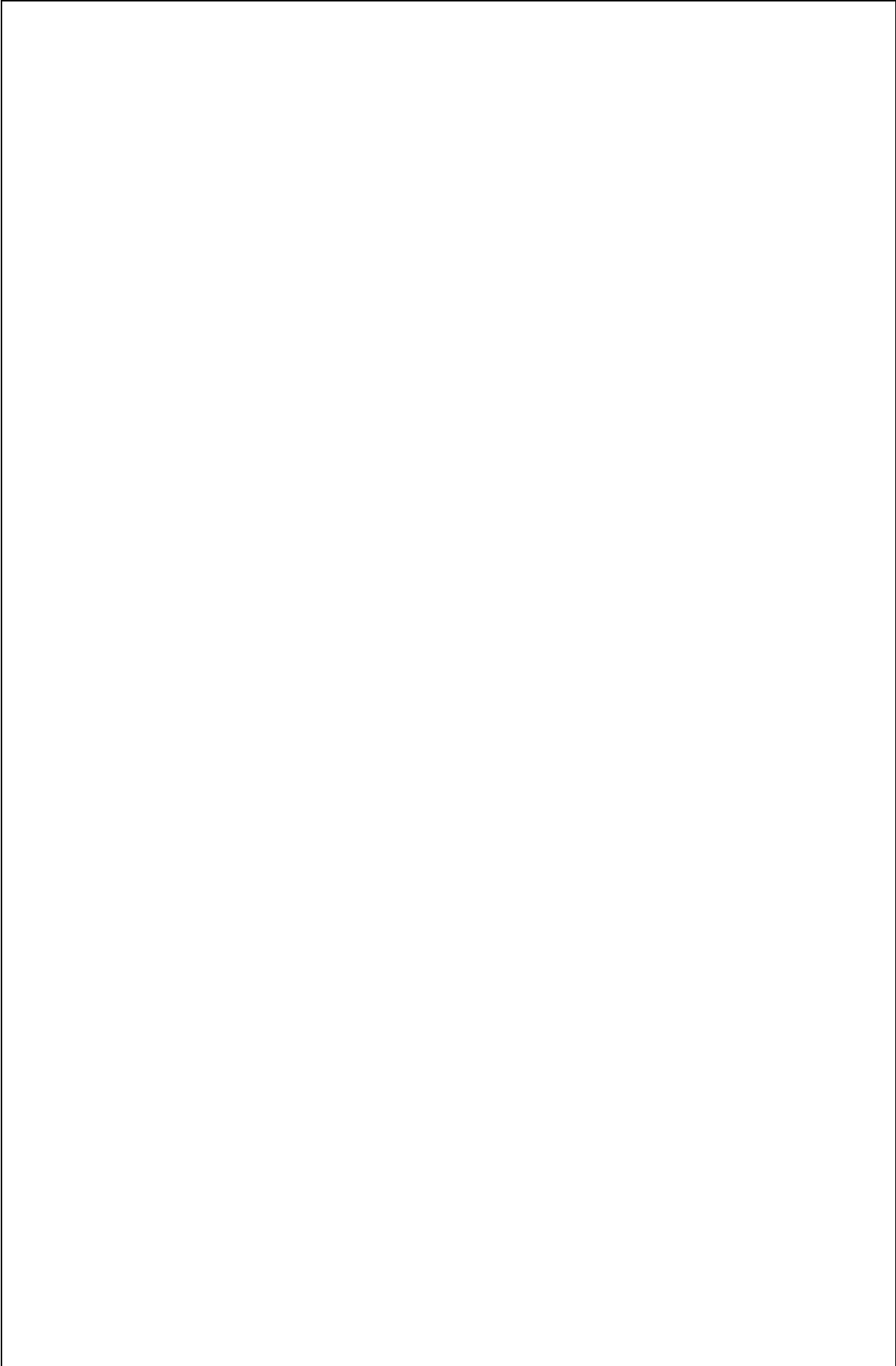
A number of UK and international fleets operate within the UK waters in the vicinity of Area 392/393. Dredging activity may potentially displace these fleets from fishing in their preferred areas. The Area 392/393 proposed licence area is 21.76 km<sup>2</sup> in size and within this area dredging activity will take place intermittently. Dredging activities have previously been undertaken in the area and the dredging and fishing industries have co-existed over that time. The license area will reduce the area available to fishing activities; however exclusion will be limited to the periods when the dredger is operating on site and only to the previously notified active dredging zones. The level of fishing effort in the proposed licence area is relatively low and intermittent exclusion of fishermen from the active dredge zones within the reduced licence area is considered to result in effects that are not significant.

### **Recreational Fisheries**

Liverpool Bay supports a relatively small but regular recreational fishery. Sea angling charters tend to target Liverpool Bay in the summer months when weather conditions are better, with boats targeting the Mersey Estuary during the winter. Much of Liverpool Bay is commercially fished and wreck sites can be particularly important for recreational anglers as these are not targeted by commercial fishing vessels. Dredging activities have the potential to impact recreational fishing by reducing access to recreational fishing grounds and/or by causing changes to fish distribution and the availability of target species. Dredging operations within Area 392/393 will only have an effect over a small and relatively low importance part of a larger area used for recreational fishing. The overall magnitude of the impact of loss of access will therefore be very small and the impact of loss of fishing access on the recreational fishing fleet is considered to be not significant.

### **Infrastructure and Other Developments**

Marine infrastructure and other developments in the region include commercial ports, military ports, offshore windfarms, oil and gas exploration and development, cables and pipelines and disposal sites. Due to the distances to identified receptors, no potential impacts are predicted to disposal sites or commercial ports and harbours and military areas. Potential impacts to windfarm developments and pipelines and cables are predicted to be limited to potential changes to wave heights and tidal currents which could in turn result in increased scouring of turbine foundations, cables or pipelines. The area of potential impacts to wave heights and tidal flows are limited to the application area, and therefore no effects from changes to tidal currents are predicted to affect any other infrastructure. The effects of the proposed dredging activities on infrastructure or other developments are assessed as being not significant.



## **Marine Recreation**

The North Wales coast is a relatively popular area for recreational sailing, supporting a number of designated sailing routes, marinas, slipways and harbours. There is only one route which passes through the application area which is a light-use route from Anglesey/Bangor to a navigation point to the east of the application area with vessels then entering the Queens Channel to the Mersey. Two medium-use routes pass to the north and south of the application area. The Shipping and Navigation Review undertaken by Anatec Ltd considered impacts to recreational vessel activity and concluded that impacts on the routing or activity of recreational vessels will be not significant.

There are several recreational diving sites in Liverpool Bay, predominantly consisting of wreck sites as well as a small number of reef and coastal sites. The proposed application area is not considered to be important for recreational diving. There is only one possible wreck within the application area, and this is not considered to be a regular diving site. Current diving activity in Liverpool Bay is undertaken within the context of the ongoing dredging activity and the impact of continuation of dredging on recreational diving sites is predicted to be not significant.

## **Navigation and Shipping**

The likely impacts on navigation and shipping of future dredging activity are centred on collision risks and hazards (i.e. associated risks to life, pollution to the environment and emergency dumping of cargo). No hazards were identified to be unacceptable. Only one hazard, the dredger colliding with a fishing vessel, was assessed to be in the "tolerable region" requiring that appropriate control measures are in place and that the residual risks are as low as is reasonably practicable (ALARP) based on a worst case outcome. Given this assessment, the effects from dredging on navigation features, recreational vessel activity, anchoring activity and potential collisions with most vessels is considered to be not significant. However the potential impacts to fishing activity is considered to be of minor significance due to the likely presence of tolerable risks to the fishing vessels operating in the vicinity of the licence area. Additional designated anchorages to the east of Area 392/393 for the Port of Liverpool have been consulted on, however standard risk reduction measures will be agreed with the Port and additional risks to navigation are not predicted.

## **Marine Archaeology and Cultural Heritage**

Known and potential cultural heritage resources within the licence area include prehistoric archaeology, maritime archaeology and aviation archaeology. Effects from ongoing dredging at Area 392/393 that could impact cultural resources include seabed removal, bathymetric changes and sediment flux. All archaeological receptors are finite and nonrenewable and the effects of any negative impacts from aggregate dredging are thus likely to be permanent and irreversible.

A number of effects to archaeology or cultural heritage receptors have been identified which without mitigation measures could potentially be subject to effects of moderate to major significance. However, assuming the adoption of standard mitigation measures included within the licence conditions, the residual impacts to all archaeology and cultural heritage receptors was considered to be not significant.



## **Consultation**

### **Public Notices**

The public notice was advertised in the Rhyl Journal on the 30<sup>th</sup> January 2013 and the 6<sup>th</sup> February 2013, and in Fishing News on the 1<sup>st</sup> and 8<sup>th</sup> February 2013 to notify interested parties of the proposed works and to give interested parties an opportunity to make representation on the application as necessary.

In response to the consultation points clarification was sought on a number of points detailed below. The clarification of these points did not result in any material change to the conclusions of the ES.

### **Representations Received**

As a result of the formal consultations and the public notice, representations were received from the following:

### **Countryside Council for Wales (CCW) now Natural Resources Wales comments:**

#### **The Physical Environment**

In our initial response to the draft ES we raised concerns regarding the modelling approach undertaken for the Coastal Impact Study and Plume Dispersion Study. Although we stand by our recommendations in terms of optimum model run times and validation, we accept the applicant's comment that confidence in the approach used is increased due to studies undertaken elsewhere (e.g. MAREAs) and the safety factor that has been applied. We agree that the impacts identified in the above studies will be localised.

In terms of survey requirements (see chapter 10: Proposed Licence Conditions and Monitoring) we recommend that a complete Area 392/393 plus 500m buffer multibeam bathymetric survey is undertaken before commencement of the 15 year licence and again at the five and ten year review stage. We advise that this is also a requirement for the postdredge monitoring programme. We note that the last full area survey was completed in 2004, nearly ten years ago. Where possible the accuracy of both the depth and position of soundings should meet IHO S44 Order 1 requirements. Ideally, the density of the data should be such that the minimum target sizes stated in IHO S44 Order 1 are always detected. Information regarding how the data was gathered and processed should be documented.

**Applicant's Response to Comments: To meet these requirements while enabling dredging to continue uninterrupted under any new licence, LTM and NWSB propose to confine dredging to the current footprint until a survey of the whole application area takes place in 2014, that is during year one of the new licence. After this survey has been carried out, the previously undredged parts of the licence area would become available for dredging and would be monitored at intervals as set out in the licence conditions.**



**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

Every two years we recommend that a multibeam bathymetric survey of the active dredge area plus 500m buffer is undertaken and compared to previous survey campaigns, in addition to the latest complete area 392/393 bathymetric survey. In year ten an active dredge zone survey would not be required as a full area 392/393 survey is recommended (see above), although a comparison between the active dredge zone and the previous surveys would still be necessary.

**Applicant's Response to Comments: Agreed.**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

We advise against using previous licence surveys (1992-present) for comparison purposes. Techniques in seabed surveying have improved and thus the method of survey should make use of the increased accuracy and confidence levels available. The applicant states that previous methods of single line bathymetry have an accuracy of +/- 0.5m; employment of multibeam bathymetry techniques will significantly reduce this. Given the difficulty in accurately measuring sediment thickness we advise that more than 0.5m of sediment should remain on the seabed and recommend an alternative threshold of 2m.

**Applicant's Response to Comments: The applicants cannot accept the threshold of 2 m sediment thickness and maintain that this is unnecessarily restrictive given the high level of accuracy and resolution of the survey data we have acquired to inform the ES and monitoring. In addition, discussions with MMO and WG over the years have led to an agreement with the companies in the marine aggregates industry that an average of 0.5 m of aggregate should be left after dredging ceases. We see no reason why this should not also apply at Hilbre Swash.**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

Careful attention should be paid to the particle size fraction review of the seabed composition in years 5 and 10. With regard to the discard of oversize particles (gravel and shell fragments) back to the seabed, we recommend that there is a condition in place such that the particle size fraction of the licence area does not change in its broad-scale composition.

**Applicant's Response to Comments: The standard condition now used for MMO licences is: „The licence holder must ensure that upon cessation of dredging the substrate must continue to be sediment of a similar grade to the conditions that existed before dredging commenced with due allowance made for natural sediment movements.“ Welsh Government has adopted a similar condition: „The Permission Holder shall ensure that an average of 0.5m of aggregate resource remains as substrate in those parts of the Permission Area from which material has been dredged, due allowance being made for natural sediment movements.“**

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**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

Benthic Ecology

We are largely in agreement with the conclusions reached in the ES. CCW also provided comments pertaining to the resource thickness and particle size fraction analysis. This will be taken account of in licence conditions.

#### Marine Mammals and Fish

West Hoyle sandbank / Hilbre Island is the largest grey seal haul out in North Wales. Recent literature suggests that there is a developing trend of corkscrew patterned seal injuries in the UK, thought to be caused by ducted propeller vessels (Bexton et al., 2012). Information has not been provided regarding whether the dredging vessels used in the application area have ducted propeller capabilities. Current Statutory Nature Conservation Authority guidance states, however, that mitigation for grey seals is only required if a SAC designated for the species is within 4nm of the development. This advice may change in future as further information becomes available.

It would be useful given the potential scale of future development in the vicinity (e.g. Burbo Bank Extension and Rhiannon wind farms) if the applicant could consider recording and reporting incidental sightings of marine mammals during dredging operations in order to gain a better understanding of how they use the area. This could be undertaken by existing ship personnel using a simple identification sheet and reported periodically.

**Applicant's Response to Comments: Noted. The current dredging vessel primarily used on the licence, the City of Cardiff, has open propellers, not ducted ones. The licence area is over 4nm from the Hilbre Island group (at least 9 km), known to support a colony of the grey seal, however the Dee Estuary SAC which includes the Hilbre Island group is not designated for grey seal. As such no restriction should be placed on the type of propeller permitted for vessels operating as part of the Area 392/393 licence.**

**Natural Resources Wales, Marine Licensing Team Comments: We will not place any restrictions, at this time, on the type of propeller permitted for vessels operating as part of the Area 392/292 licence.**

It would be useful given the potential scale of future development in the vicinity (e.g. Burbo Bank Extension and Rhiannon wind farms) if the applicant could consider recording and reporting incidental sightings of marine mammals during dredging operations in order to gain a better understanding of how they use the area. This could be undertaken by existing ship personnel using a simple identification sheet and reported periodically.

**Applicant's Response to Comments: The applicants are willing to consider this request if proforma identification sheets could be provided for the vessel crew to use.**

**Natural Resources Wales, Marine Licensing Team Comments: We will arrange for proforma to be provided to the applicants. This will not be a condition of the licence.**

#### Ornithology

As a minor point, on page 162 the ES states that gannet forage over large areas, however, it is not mentioned that the same is true for Manx shearwater which has a mean maximum foraging range of 330km compared with the gannet's 229 km. Additionally, the section on page 179 which discusses cormorant does not acknowledge that the species is part of the

assemblage feature of the Dee Estuary SPA.

These comments aside, we can agree with the assessment undertaken in this chapter which concludes no significant impact to red-throated diver, common scoter, gulls, terns and auks. The assessment covers both direct impacts as a result of the dredging activity and disturbance from vessels transiting back and forth from the dredging area.

#### Designated Sites

Several designated site features are listed incorrectly in table 6.10 (see page 194). For example, Creigiau Rhiwledyn / Little Ormes Head SSSI is designated for its breeding cormorant, as is Ynys Seiriol / Puffin Island SPA and SSSI. Pen y Gogarth / Great Ormes Head SSSI is designated for its breeding kittiwake, guillemot and razorbill. Nevertheless we can agree with the conclusion presented in this chapter that impacts to the designated sites listed are predicted to be „not significant“.

#### Conservation of Habitats and Species Regulations 2010 (as amended)

The application area lies partly within the Liverpool Bay / Bae Lerpwl SPA and the likely vessel transit routes pass through or close to a number of other designated conservation sites of European importance. We therefore advise that you must consider the proposal under regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended).

Chapter 8 of the ES details the Habitat Regulations Assessment screening exercise undertaken by the applicant. We agree with conclusions presented in the Physical Environment chapter of the ES in that any impacts arising from the dredging activity will be localised. We consider therefore that there is no mechanism for likely significant effects on the habitat features of the coastal SAC sites outlined in table 8.1 of the ES. We also agree that salmon and lamprey are not likely to occur within the application area in any important numbers and can therefore conclude no likely significant effect on the designated fish features of the Dee Estuary / Aber Dyfrdwy and River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SACs.

In terms of ornithological interest we advise that the proposal is unlikely to significantly affect the integrity of Welsh or English SPAs as outlined in table 8.1. In providing this advice we have considered impacts resulting from the dredging activity and potential disturbance from vessels based on the transiting routes depicted in figure 8.1.

#### Natural Environment and Rural Communities Act 2006 (NERC)

In our initial response to the draft ES we highlighted that grab surveys undertaken as part of the benthic characterisation work had picked up an area of muddy gravely sand in the south / centre of the proposed aggregate extraction area, which may be indicative of the subtidal mixed muddy sediments Section 42 NERC habitat of principle importance. We note the applicant's comments that this biotope is present despite being in an area subject to relatively high levels of historical extraction and as such have no further comment to make on this issue.

To conclude, CCW does not object to the proposal provided that the recommendations outlined above in the Physical Environment section pertaining to proposed licence

conditions and monitoring are adopted. We would be happy to further discuss our recommendations with the applicant if necessary.

**Comments on the Proposed Mitigation and Monitoring have also been provided by CCW now Natural Resources Wales:**

That Anchor dredging is not used in areas with a sediment thickness of less than 2m. We understand that the applicant would use Trailer Suction Hopper Dredgers in areas of thinner resource and look to Marine Licensing Team and the applicant to propose a workable condition.

**Applicant's Response to Comments: Anchor dredging will not be employed in areas with a pre-dredge sediment thickness of less than 2m. Trailer suction hopper dredgers will be used in such areas.**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

As already agreed we advise that a multibeam bathymetric survey of the active dredge zones plus a 500m buffer is undertaken every two years.

**Applicant's Response to Comments: Agreed**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

In addition, using the bathymetric data, we recommend that an analysis of resource thickness is made using methods already established by industry/MMO/CEFAS to ensure that a minimum of 0.5m resource thickness is present across the licence area.

**Applicant's Response to Comments: An average of a least 0.5 m resource thickness will be left across the dredged areas in the licence area using the method established by industry/MMO/Cefas (the recently Cefas-approved version is attached for your convenience).**

An example of this approach being used elsewhere is for MMO licence L/2012/00278/1 for Area 395 east of the Isle of Wight. The relevant condition reads:

“The licence holder must ensure that an average depth of 0.5 m of aggregate resource remains as substrate in those parts of the licence area from which material has been dredged. This will be measured over 250m by 250m squares arranged on 125m centres.”

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

If areas are identified where coverage of resource is approaching 0.5m (this may need to be defined more clearly), or is 0.5m or less, exclusion zones should be established to prevent any further extraction in these areas. Again, we understand that this approach has been used elsewhere and that industry/MMO/CEFAS have developed some appropriate wording which could be used in terms of a specific condition.

**Applicant's Response to Comments: Where resource thickness remaining reaches an average of 0.5 m during dredging operations over the term of the licence, then exclusion zones will be established. Again, an example of this approach being**

used elsewhere is for MMO licence L/2012/00278/1 for Area 395 east of the Isle of Wight. The relevant condition reads:

**“Resource Assessments: the licence holder must assess remaining sediment thickness using baseline resource data and bathymetric data in conjunction with bathymetric monitoring data in Years 4 and 9, confirming the depth and extent of sand and gravel resource remaining. Reference must be made to the baseline resource data. The data shall be interpreted to produce updated resource information for the marine licence area. Charts must be produced clearly indicating any areas where the coverage of resource is 0.5m or less, averaged over a grid of 250m by 250m arranged on 125m centres. EZs must be established around these areas and the limits of the EZ will be shown on a chart and co-ordinates provided.”**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

Finally, for completeness we recommend that a condition is included in the licence to ensure that upon cessation of dredging the sea bed substrate is of a similar grade to conditions which existed before dredging commenced, and, that a minimum of 0.5m aggregate resource remains.

**Applicant’s Response to Comments: Agreed. Once more, an example of a condition relevant to this point applies to Area 395, as follows:**

**The licence holder must ensure that upon cessation of dredging the substrate must be sediment of a similar grade to the conditions that existed before dredging commenced with due allowance being made for natural sediment movements. A specification as to how this will be demonstrated must be agreed with the MMO prior to any surveys.”**

Cefas is currently developing a specification for precisely how this will be demonstrated, using numbers of grab samples from pre-determined seabed localities, and discussions are ongoing.

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

**Cefas Key Comments:** Cefas provided comments on the following areas:

#### **Benthic Ecology Observations**

The ES has been significantly improved since the pre-application version and the applicants have fully addressed the comments made at that time, improving both the methodology and scope of the analysis. They have undertaken a data mining exercise to complement the data collected by their own surveys, reanalysed their own data and performed further suitable analyses on the wider data set. For the most part, the impact assessments are fair and reasonable.

The ES states that granulometric and faunal analysis of benthic grabs has been undertaken by laboratories that participate in the NMBAQC (National Marine Biological



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Analytical Quality Control) scheme, which is sufficient for the purpose of an ES on benthic communities and habitats.

Standard practices have been used, as per the guidelines relevant at the time of survey (Boyd, S.E., 2002. Guidelines for the conduct of benthic studies at aggregate dredging

sites). Standard and appropriate statistical analyses have been used, via the statistical package PREIMER v6.

The timeliness of the data is appropriate for an ES. The survey data was collected in 2011 and the faunal data obtained by data mining (Gwynt Y Mor wind farm) dates back to 2003.

The analysis has considered the licence area itself and the area around this equivalent to one tidal excursion beyond the license area. The cumulative impact work has considered the presence of both local and distant activities (wind farms, gas platforms and other dredge areas).

We agree with the conclusions presented in this chapter for the likely severity of impacts, however, the ES has downplayed a significant point made repeatedly in the Benthic Ecology Study (Appendix D) concerning a change to the substrate and infauna at Stations 19 & 20 which fall in the heavily impacted area from previous dredging. Rather than openly explore the possibility that this may be due to dredging, the ES makes a statement on p 627 saying “There is evidence from vibrocores of naturally occurring layers of muddy gravelly sand within the predominantly sandy gravel and gravelly sand sediments in the application area, which is likely to be the source of the more muddy sediments recorded at Stations 19 and 20”, citing a personal communication with the applicant as the source. As no documentary evidence is presented for this I consider the statement to be unsupported. As the prior dredging has removed 7 m depth of substrate at this location, it is feasible that the increase in fines (% mud) and change in fauna is actually a direct result of dredging activity, either through the accumulation of fines in the dredge pits, or by the dredge operation removing all of the original surficial sediment to expose a significantly muddier sediment underneath. In the latter case such evidence would suggest that the prior dredging operation had not complied with the license requirement to leave a 0.5 m depth of „similar“ sediment. Consequently I recommend that the existing statement about vibrocores should fully support the conclusions made.

**Applicant’s Response to Comments: The ES refers to the survey data evidence from seismic profiles and core samples. The reason vibrocore evidence was cited is because this is the factual basis on which this topic was assessed. To further support the statement in the ES about layers of muddy sediment naturally occurring as part of the aggregate resource, a summary of the percentage fines content of each of the subsamples taken for PSD analysis from the 2010 vibrocores is presented in Annex Table 1. Figure 1 shows the resource isopachs and the 2010 vibrocore locations. The spreadsheet indicates the depth below seabed at which each subsample was taken and shows the large degree of natural variation in fines contents with depth and between locations, some cores demonstrating less silty sediments at the base of the core than at intervals above and some showing the reverse. Vibrocores 14 to 17, all close to stations 19 and 20, clearly demonstrate this variability. This stratification is common in the relict fluvial deposits which form the resources in the application area and also in other dredging licence areas off the UK. The proportion of fines in stations 19 and 20 of the ecological survey was 12% and 13%, forming part of “gravelly muddy sand” sediment at those stations. The 2010 vibrocores (see Annex Table 1) demonstrate that layers of similar fines contents are common as lenses throughout the sediment. The seismic and sample evidence indicates that dredging will not expose uniformly muddier sediments but will leave a variety of poorly sorted but sand dominated sediments conspicuously similar to those naturally present in the licence area in undredged localities.**

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**

Coastal Processes Observations

The description of the environment and potential impacts are accurate. I agree with the conclusions that the proposed dredging will have an impact on waves and tidal currents, and consequent sediment transport, will be limited to the Licence Area and immediate surroundings and will not extend as far as to affect the coastline.

A seismic survey was undertaken in 2010 (Section 5.3.1, page 5.6) and side scan sonar and sub-bottom profiler data were collected in 2004. PSD analysis of sediments in vibrocores (Appendix G) were carried out following BS 1377, part 2, 1990, clause 9.2 for the PSD test method for soil, BS 410 for the sieve aperture, BS EN 933-1 for determination of particle size distribution - sieving method. The last one is part of the European Standard Tests for aggregates (BGS web site „Planning4Minerals“), and I believe the previous two standards to be appropriate for the tests. No quality standards have been provided for bathymetry and side scan sonar surveys undertaken in 2010, but specifications for those would be included in the related monitoring report.

With regards to the table of consultation responses Point 29: Amendments have been made to the ES, but a chart with the average thickness of remaining resource has not been presented and should be to provide a „baseline“ chart as a reference. The Active Dredging Zones (ADZ) 1 & 2 seem to cover the heavily dredged area, where the potential dredging effect outlined in paragraph 18 above has been observed, and there may be reason to limit or exclude operations in ADZ 1 & 2, or consider them as damaged and „sacrificial“ in the light of the extent of similar habitat occurring in Liverpool Bay as a whole.

**Applicant's Response to Comments: A chart is attached below (*Figure 2*) showing the latest isopachs plotted in 2012 from the 2012 bathymetry data, 2004 bathymetry (*ES Figure 4.4*) and 2004 seismic profiles the chart was included in the 2012 monitoring report for the current licence, submitted to Welsh Government on 22nd August 2012. This shows that there is ample resource remaining in that part of the application area where dredging has occurred so far. Resource thicknesses will continue to be reviewed and reported each time bathymetric monitoring data is acquired. A baseline sediment thickness chart for any new Marine Licence will be produced if a new licence is granted.**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

According to Section 10.4, there is an existing multibeam bathymetric survey from ongoing monitoring of the previous licence that the applicants suggest using as a baseline for the new licence. As far as Cefas is aware all the bathymetric data received as part of the ongoing monitoring were obtained with single beam techniques, as also confirmed by the email from CCW to the Marine Consents Unit of the 6th December 2012. If multibeam bathymetric data has been collected for this site this data should be presented in the ES as part of the historical monitoring.

**Applicant's Response to Comments: Figure 4.4 of the ES is based on 2004 multibeam data and the coverage is shown in the attached Figure 3 - full coverage in the current dredging area and near full coverage elsewhere. Although the survey did not have full coverage of the licence area, the output was considered to be an**

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excellent data set to allow interpretation of changes to the bathymetry within the

licence area. Over the undredged areas of the site where the seabed is relatively flat, extrapolations between survey lines are reliable, since depths change only gradually and are relatively constant.

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**

A new multibeam bathymetry survey of the whole licence area should be taken in 2014 and presented as part of the baseline. This will be important for monitoring the impact of dredge activity on the seabed; full coverage of the area enables better interpretation of changes to bathymetry and therefore helps to attribute whether any observed changes are due to dredging or natural processes.

**Applicant's Response to Comments: The requirement in 2014 for a full coverage multibeam survey of the whole licence area is accepted. This will be presented as part of the baseline.**

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document.**

In general standard practices have been employed to prepare and gather evidence. Bathymetric and surface geological data have been acquired using single-beam echosounder (Figure 4.4, page 4-8), and sidescan sonar systems (Archaeology report, Appendix f). Seismic surveys were undertaken to determine the sub-surface geology (Figure 5.3, page 5-7) and the resource extent and depth (Figure 4.7, page 4-11). The use of single-beam echosounder has been standard practice for this dredging licence in the past, and we recommend that multibeam techniques are used as standard within the licence area and surroundings for the new 15-year licence as these techniques produce typical errors of around +/-0.25 m, thus increasing confidence in understanding seabed changes.

The methodologies used to gather information and evidence for the ES are robust. However, as pointed out in the previous advice for the CIS and Plume Dispersion Study, the tidal flow modelling would have provided more robust data if the calibration had been undertaken with measured tidal data (ADCP) instead of data derived by tidal diamonds.

Most of the data used are timely: geophysical data were gathered in 2004 and 2010 and metocean data up to 2006 were input for the CIS and PDS modelling. However the seabed sediment chart provided in Figures 6.1, page 6-5, was derived by data gathered in 2004 and would have been better informed with more recent data (2010). An updated version of the seabed features chart should be included in the pre-dredge monitoring to provide a comparable set of data as a baseline for monitoring.

With regards to the table of consultation responses Point 32 – transport of silt: The impact footprints on waves and tidal currents are assessed separately and are mainly limited to the boundaries of the licence area (and in case of waves do not extend very far beyond those boundary). We assume from this that the combined effects of waves and tides on sediment transport would not extend much further than the footprint of changes on wave heights, but modelling of sediment transport due to waves and combined waves and currents would have better informed such an assumption.

Fisheries



### Observations

Generally the ES provides an adequate description of the marine community in and around the application area. No site specific survey has been carried out, however, this is a previously dredged site and a baseline would be now difficult to obtain. Good use has been made of data available from surrounding activities and projects and also from general surveys carried out in the area. When interpreting data using different survey methodology any limitations of methodologies should be highlighted. Most impacts have been identified but there are still issues concerning cumulative assessments, which are discussed below.

We endorse and encourage the liaison and consultation proposed with the fishing community and IFCA, and we hope this will be maintained throughout the lifetime of the licence.

With regards to the table of consultation responses Point 51 - Sandeels have been identified as part of the fish community but the potential impacts don't appear to have been adequately addressed. Sandeels are an important prey species for other fish, birds and marine mammals and as part of their life cycle is in the seabed (night time and during their hibernation period through the winter months), the potential impacts will be different to other fish species and should therefore merit further consideration. The survey methods used in Annex D, would not have adequately sampled sandeel, and cannot be used to describe sandeel distribution and abundance. Suitable seabed habitat in the application area could be used to describe the proportion of area suitable for them in Area 392/393. As such, I suggest a condition is put on the licence to ensure the relevant sandeel work is undertaken prior to dredging taking place at the site.

**Applicant's Response to Comments: The key life stage of sandeel which could be affected by dredging is loss of spawning habitat, therefore an analysis of the sandeel spawning habitat available in the vicinity of Area 392/393 has been undertaken. The approach is described below and the results are presented in Figure 4.**

**The main areas of potential sandeel spawning habitat were mapped using the sandeel „high intensity spawning grounds“ dataset provided in Ellis et al (2012). It is noted that previous work by Coull et al (1998) did not identify any sandeel spawning habitat within Liverpool Bay and therefore could not be used.**

**The combined active dredge zones and 500 m buffer areas within Area 392/393 where potential dredging effects may occur have been calculated from Figure 4 to cover approximately 0.38% of the area identified as „high intensity sandeel spawning habitat“ by Ellis et al (2012). It is noted that sandeel occur much more widely than in their main spawning grounds and will occupy a much larger area of the Irish Sea over their life cycles.**

**The optimal sandeel spawning habitat within the areas of „high intensity spawning grounds“ was then mapped using British Geological Survey (BGS) sediment type data. The optimal sandeel spawning habitat was defined as being sediment with a high percentage of medium-coarse grained sand (particle size 0.25-2mm) and containing <10% silt (particle size <0.063 mm) (Wright et al 2000). This is equivalent to the „SAND“ classification based on the Folk (1954) scale as modified by BGS. The areas identified as SAND on the broadscale BGS 1:250,000 sediments map using the Folk (1954) scale have been presented on Figure 4. The mapping shows that Area**



**392/393 does not overlap with any areas classified by the BGS data and Folk (1954)**



scale as „SAND“ which may support optimal sandeel spawning habitat. We consider that the data presented here validates the assessment presented in the ES that there will be no significant impacts on sandeels and that no further assessment work is required.

**Natural Resources Wales, Marine Licensing Team Comments:** We consider that this issue has been adequately addressed.

With regards to the table consultation responses Point 52 - In section 6.8.4 the cumulative impacts are discussed. Given the conservation importance of the area and the number and proximity of projects, the cumulative impact assessment needs to look at the combined effect of these factors on receptors. The timelines of surrounding projects should also be discussed in regard to the seasonal variation of species i.e. migrations and spawning. Even though this is a previously dredged area, the number/size of developments/activities in the area has increased; hence the assessment needs to take this into account.

**Applicant's Response to Comments:** The assessment of cumulative impacts to fish already takes into account the different temporal impacts of other developments where these have been reported ie for the Gwynt y Mor and North Hoyle Offshore Windfarms (Section 6.8.4 p 6-107). The impacts predicted for all of the projects assessed cumulatively with Area 392/3 are either Not Significant or Minor Temporary Significant impacts, and combined with the negligible magnitude impacts predicted for Area 392/3 No Significant cumulative impacts are predicted (p 6-107).

The assessment of impacts to fish from activities at Area 392/3 predicted negligible magnitude impacts to fish, taking into account their use of the area (ie from Loss of Suitable Habitat for Spawning or Nursery or Direct Update and Damage of Individuals (including migratory species) Section 6.4.4 p 6-50). As a result of the negligible magnitude impacts predicted, it is predicted to be unlikely that there will be any cumulative impacts with the Not Significant or Minor Temporary Significant impacts reported for other nearby developments, as reported on p6-107.

The „optimal“ sandeel habitat as based on the Folk scale (1954), has yet to be agreed by other members of the scientific community, so it would be helpful if this were acknowledged in the ES.

**Applicant's Response to Comments:** We are happy to acknowledge here that the optimal sandeel habitat has yet to be agreed by other members of the scientific community. We suggest that adding into the ES an acknowledgment of this specific point is unnecessary at this stage, given that the already published ES's conclusions would remain unchanged.

**Natural Resources Wales, Marine Licensing Team Comments:** We consider that this issue has been adequately addressed.

In reference to Point 56 of the consultation table - On page 6-44 and in Annex D, a statement is made that „Salmon entering from rivers into the Irish Sea will migrate as far as the west coast of Ireland in their first year but may travel further in subsequent years“. Migration is generally towards the Faroes and the conclusion that smolts migrate as far as

the west coast of Ireland in their first year needs to be supported by references. In addition, „the majority of salmon are believed to follow the north coast of Wales when returning to the



Dee", p6-51 need to be put into context. Whilst it is thought that this is the case it has not been proven that all returning salmon do this. Again a reference is required to support this information. Further, statements such as; „salmon are unlikely to pass through the application area", are unsubstantiated by the evidence provided.

**Applicant's Response to Comments: Noted.**

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**

In relation to point 57 of the consultation responses table - In the HRA, page 8-10, in Impacts to Qualifying Interest Fish Species – This section discusses lampreys and salmon and states „However they are not believed to occur within the application area in any numbers and have not been recorded from any of the or grab samples from the area (see Annex D)". Whilst it is unlikely that these species will occur in any numbers in the application area because of their transient nature, the survey and grab methods used would not have sampled these species and it is misleading to use in support of this statement.

**Applicant's Response to Comments: Noted.**

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**

On page 82, it is discussed that no fish were caught above MLS, i.e. plaice, sole, cod. The survey method used will only adequately sample small bodied and juvenile demersal fish, and therefore the majority of commercial species sampled will be juveniles and will not be representative of the adult population in the area. On page 93, discussions regarding the fish communities should explain that the commercial fish sampled are mostly juveniles and do not represent the adult communities. The methodology used will also not adequately sample shellfish and this should be taken into account when discussing the data.

**Applicant's Response to Comments: We acknowledge that the commercial fish sampled are mostly juveniles and do not represent the adult communities. In addition we acknowledge that the survey method used will not adequately sample shellfish. Our view is that these observations will not materially affect the conclusions of the ES in regard to affects on the marine environment associated with aggregate dredging from Hilbre Swash area 392/3.**

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**

Table 6.6 should include Eel (listed on ICUN Red lists as critically endangered), Allis shad and Sea trout. Also, listings for some species in the table are not included, i.e. herring are listed on the ICUN Red list as least concern. The listings should be checked.

**Applicant's Response to Comments: Noted. Please see errata table. The updated listings do not materially change the outcomes of the ES.**

**Natural Resources Wales, Marine Licensing Team Comments: We consider that this issue has been adequately addressed.**





Comments on the Proposed Mitigation and Monitoring have also been provided by Cefas.

While reviewing the ES we have compared the Licence conditions and monitoring included in the ES, chapter 10, with the recommendations included in the CIS (section 9.2, page 34) and our previous advice and have the following comments to make.

The CIS recommends a final swathe bathymetric survey of the existing Licence is to be provided after the Licence expires. The CIS (section 9.2 page 34) recommends that the multibeam bathymetry should be carried out with full coverage and a zone of 1 km outside the licence boundaries. This is to provide a clear picture of the seabed final state and a basis for monitoring the impacts of future dredging. The area to be monitored for the baseline (proposed in the CIS) is 500 m larger than that proposed in the ES (Section 10.4 – 2, page 10-2). This seems to be reasonable as this extra coverage will provide a better picture of the state of the seabed around the proposed Licence Area.

In Table 10.3 the applicants suggest a swathe bathymetry survey will be undertaken with full coverage within the areas dredged obtained with 250 m spacing. Given previous advice on 2010 bathymetric survey (L. Howe, 2011) and the discussions undertaken in the CIS industry meeting, swathe bathymetries (baseline and operational) should be carried out on 125 m spaced centres.

The multi-beam bathymetry should be provided as separate files (including the xyz bathy files) so that independent analysis can be carried out. It would be helpful if seabed relief charts from multibeam backscatter were provided together with bathymetric charts and bathymetric difference plots.

The monitoring programme should include bathymetric surveys of the areas newly dredged that are exposed to extraction to monitor the initial pattern of response (CIS, section 9.2, page 35); The surveys should be undertaken in the following year and the coverage of the data should extend at least 500 m outside the limits of the extraction areas, as shown in the EMS data.

As stated in our review of the draft ES, we recommend a review of the fisheries data and information (for example, every five years at the substantive review) to give an indication of any changes in the fisheries in the regions and any potential relation to impacts from dredging (see point 53 of the consultation table).

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be addressed through licence conditions as detailed under the „Conditions“ section of this document**

Conclusions

As detailed in the points above including a chart with the average thickness of remaining resource and presentation and analysis of multibeam bathymetric data (if it exists) is required.

We welcome the opportunity to comment on the draft licence conditions and have only provided limited comments on mitigation and monitoring at this time.

Applicant's Response to Comments: Isopachyte chart provided 26<sup>th</sup> July 2013.

**Natural Resources Wales, Marine Licensing Team Comments: This issue will be**



**addressed through licence conditions as detailed under the „Conditions“ section of this document**

**Environment Agency Wales (EAW) now Natural Resources Wales comments:**

This site lies within the designated area Liverpool Bay Special Protection Area and the works should not in any way affect the integrity of this designation. Further information about designated sites can be sought from Countryside Council for Wales or Natural England as appropriate.

The works should also in no way impact or affect the integrity of the coastal designated sites; Dee Estuary, Gronant Dunes and Talacre Warren and the North Wirral Forshore SSSI"s. The Dee Estuary is also designated as a SAC, SPA and Ramsar Site.

There are also the Hilbre Islands and the Gronant Dunes Local Nature Reserves, which must not be impacted in any way.

The estuary and some of the coast are also designated as Bathing Waters and Shellfish Waters, these designations must also not be affected in anyway.

The changes in geomorphology predicted in the assessments show that a change in the sea bed as will occur could potentially impact upon the coast through changes in wave climate, currents and sediment transport. In granting any consent, the consenting authority should apply a precautionary principle with regards European sites to ensure that these changes do not in any way affect the integrity and conservation status of designated areas e.g. through significantly reduced sediment supply. An appropriate assessment should be completed.

Protected species which may inhabit/use these areas:

Data shows the presence of the Leatherback Turtle within close proximity to the site and every effort should be made to ensure this endangered and protected species is in no way impacted by the works, although direct impacts are thoughts to be unlikely given that presence is transient.

Tremendous care should be taken whilst works are underway to avoid injury or death to any cetacean species which are protected under the habitats directive as well as being BAP species.

Should any protected species be found within the works area whilst works are ongoing all works should stop and advice should be sought CCW / NE as appropriate.

For the trailer dredging the predicted increases in depth-averaged suspended sediment concentration of more than 10 mg/l are confined to within 1 km of the point of dredging and at this distance predicted increases in depth-averaged suspended sediment concentration are less than 5 mg/l for 95% of the time."

There should be no impact to bathing waters on the North Wales coast. Including increased turbidity resulting in higher bacti levels from reduced natural UV penetration of seawater.

Suitable safeguards should be in place to prevent pollution from vessels during the landing of aggregates on shore.

**Natural Resources Wales, Marine Licensing Team Comments: We agree with the conclusions within the ES, and the view of our statutory nature conservation advisor that of no likely significant affect on designated sites as a result of the activities at**



**Marine aggregate extraction Area 392/393, known as Hilbre Swash. A habitats directive appropriate assessment has therefore not been carried out.**

**We have also consulted our statutory nature conservation advisor in regard to stopping works should an EPS be found within the works area and agreed that we would not implement this as a condition.**

**The requirements to prevent pollution from vessels during the landing of aggregates on shore has not been conditioned as this is covered by the MARPOL Convention 1973 as modified by the 1978 and 1997 protocols which in UK waters the MCA has legal powers to prosecute offenders.**

**CADW:** Proposed monitoring requirements which will be taken account of by the marine licence.

**MCA:** Proposed conditions relating to navigational safety which will be taken account of by the marine licence.

**TH:** Trinity House have no objections to the proposals for aggregate extraction from Hilbre Swash and confirm any vessels used to exhibit signals as per collregs.

#### **Welsh Government Marine Enforcement Officers: Marine environment**

##### Works Interference with other users of the sea

The works fall within an area which is used by both commercial and charter fishermen. The activity in the area is relatively low and whilst there will be some impact on these fisheries it has been considered in the environmental statement and been assessed as negligible. There will also be other marine traffic in the area which should not be significantly affected by the works.

##### Navigation

The applicant has considered the navigational impacts of the work and stipulated the necessary measures and requirements that it will take to avoid any issues.

##### Fish/Shellfish Stocks and Seasonality

The environmental statement has highlighted that this area is a nursery and spawning ground for a number fish species. Whilst it has noted that these species are not classified as at risk many are of commercial importance to the area. There has been little mention of scallops in the environmental statement which are commercially fished in this region and I suspect that the activity will impact on this fishery in the close vicinity to the dredging. However I agree that the impact of the works on these species is likely to be negligible.

There is a designated Shellfish beds within the Dee estuary in the close vicinity however I do not believe these will be impacted by the works.

##### Conditions

Following consideration of all relevant information, including the ES and the outcome of the consultations, the MCU considers that the following conditions must be included in any licence granted for this project:





**Regulatory Evaluation and EIA consent decision**

**SCHEDULE of CONDITIONS**

**1. General**

1.1 All conditions herein relate to Area 392/393, known as Hilbre Swash and located in Liverpool Bay approximately 12km north of Prestatyn on the north Wales coast.

**2. Location of Dredging**

2.1 Dredging operations must only take place within the Licence Area (Restricted Dredge Zone) defined by the following WGS84 coordinates, and as shown in the charts in Appendix 1 prior to the approval of condition 6.2 by NRW acting on behalf of the Licensing Authority.

**Latitude (N) Longitude (W)**

53°27.3376	03°24.9725
53°27.1673	03°24.9669
53°27.1243	03°24.8398
53°27.0003	03°24.8357
53°26.9587	03°24.4630
53°26.8585	03°24.4597
53°26.8558	03°24.6864
53°26.5901	03°24.6776
53°26.5307	03°24.8359
53°26.5276	03°25.0976
53°26.4267	03°25.3540
53°26.7850	03°25.7561
53°26.9783	03°25.7436
53°27.0120	03°26.0114
53°27.1295	03°26.1430
53°27.1328	03°25.8657
53°27.3269	03°25.8722

2.2 Dredging operations can only take place within the Licence Area defined by the following WGS84 coordinates, and as shown in the charts in Appendix 2 upon the approval of condition 6.2 by NRW acting on behalf of the Licensing Authority.

**Latitude (N) Longitude (W)**

53 25.7606	3 26.3910
53 26.7084	3 26.7053
53 29.5135	3 31.6063
53 29 5135	3 28.5796
53 29.4788	3 28.4662
53 27.1303	3 24.5798
53 26.6781	3 23.6801
53 26.0472	3 23.6800

3. Quantity

3.1 The total quantity of material to be extracted over the duration of this Licence, from the date of commencement of dredging within the Licence Area, must not exceed **6 million tonnes**.

#### **4. Extraction Rate**

4.1 Subject to the restriction on the total quantity of material to be extracted as specified in condition 3.1, the amount of material extracted must not exceed **0.8 million tonnes** in any calendar year.

4.2 The Licence Holder is not permitted to roll over un-dredged capacity between years.

#### **5. Working Arrangements**

5.1 Dredging operations must only take place within the Restricted Dredge Zone (RDZ), as defined by the coordinates presented in section 2.1 of this licence, until otherwise approved by NRW acting on behalf of the Licensing Authority.

5.2 All dredging operations within the Licence Area must be carried out by anchor or trailer suction hopper dredging.

5.3 The Licence Holder must ensure that anchor dredging is not carried out where sediment thickness is less than 2m

5.4 The Licence Holder is permitted to carry out on-board screening, however where practicable, cargoes will be loaded without screening.

5.5 The Licence Holder is permitted to undertake „hopper washing“, where necessary, to remove small amounts of residual material (less than 50m<sup>3</sup>) that remain in the hopper prior to vessel maintenance or extraction of a different grade of cargo.

5.6 Hopper washing must not take place within any Exclusion Zones (EZs) implemented to protect archaeological or nature conservation features and the release of any material and/or residues is only permitted within the Licence Area.

5.7 The Licence Holder is permitted to carry out core sampling and grab sampling for the purposes of resource assessment within the Licence Area.

5.8 The Licence Holder must ensure all dredging vessels operating under the terms of this Licence, in the Licence Area, are fitted with an Electronic Monitoring System (EMS) approved by The Crown Estate and NRW acting on behalf of the Licensing Authority.

5.9 The Licence Holder must ensure the data recorded by the EMS system is provided to The Crown Estate's agent within **18 days** of the end of the calendar month.

5.10 The Licence Holder must ensure that an average depth of 0.5 metres or less of aggregate resource, measured over 250m by 250m squares arranged on 125m centres, remains as substrate in those parts of the Licence Area from which material has been dredged, due allowance being made for natural sediment movements.

5.11 The Licence Holder must ensure that if any areas of resource thickness of an average depth of 0.5 metres or less, measured over 250m by 250m squares arranged on 125m centres, become apparent prior to or during dredging, EZ"s must be established around these areas and around cables, features of archaeological interest and nature conservation features and the coordinates of the areas notified to NRW acting on behalf of the Licensing Authority and The Crown Estate Commissioners and acknowledged by them in writing before being implemented.

5.12 The Licence Holder must ensure that NRW acting on behalf of the Licensing Authority, The Crown Estate and the local fishing industry are notified of the intentions to move zones, no later than 1 month before work outside of the RDZ is scheduled to begin.

5.13 The Licence Holder must notify NRW acting on behalf of the Licensing Authority and The Crown Estate in writing of the date on which dredging operations cease within the permitted area within **5 working days** of them ceasing should operations cease before expiry of this licence.

5.14 All dredging operations permitted under this licence MM004/10/LTM & MM004/10/NSB must cease by 1<sup>st</sup> January 2029.

## **6. Baseline Monitoring**

6.1 The Licence Holder must ensure that:

6.11 A specification of the baseline monitoring survey is submitted for approval in writing by, NRW acting on behalf of the Licensing Authority at least **6 weeks** prior to the onset of dredging outside of the RDZ under this licence;

6.12 Unless otherwise stated, all of the reports from the operational stage monitoring programme must provide comparison with the baseline monitoring data and any available and relevant historical data.

- 6.2 No dredging is permitted outside of the RDZ until:
- 6.21 Isopachyte charts, detailing the location of any areas where the resource thickness is 0.5 metres or less are provided to NRW acting on behalf of the Licensing Authority and The Crown Estate, and acknowledged by them in writing. EZ"s must be established around these areas, the co-ordinates of which must be provided to NRW acting on behalf of the Licensing Authority and The Crown Estate and acknowledged by them in writing and;
  - 6.22 Multibeam bathymetric and side scan sonar data have been presented and analysed.
- 6.3 A benthic ecology survey including sediment sampling with PSA must be undertaken within one year of dredging commencing. The results of the surveys, together with the information contained within the ES, will act as the environmental baseline against which future impacts of dredging will be assessed.

- 6.4 Where baseline surveys are required, the Licence Holder must ensure that:
- 6.41 The baseline survey is completed to a specification agreed by NRW acting on behalf of the Licensing Authority, prior to the onset of dredging outside of the RDZ under this licence;
  - 6.42 An interim baseline survey report is prepared and submitted to NRW acting on behalf of the Licensing Authority highlighting any significant seabed features of conservation and heritage interest before the commencement of dredging outside of the RDZ;
  - 6.43 A full baseline survey report is prepared by independent experts in the appropriate fields and provided to NRW acting on behalf of the Licensing Authority within **9 months** of the completion of the baseline survey;
  - 6.44 All future monitoring reports should be compared to the baseline survey report.
- 6.5 The surveys required in year 1 are:
- 6.51 Bathymetry;
  - 6.52 Seabed character and configuration (including identification of obstacles and wrecks);

6.53 Benthic survey and analysis;

6.54 Analysis of all data to identify exclusion zones;

6.55 Detailed description of the baseline environment against which future monitoring can be compared.

## **7. Operational Monitoring**

7.1 The Licence Holder must submit the reports of the multibeam bathymetric and side scan sonar surveys to NRW acting on behalf of the Licensing Authority within **9 months** of the surveys being undertaken and also confirm in the report compliance with Conditions 5.10 and 5.11

7.2 The Licence Holder must ensure that:

7.2.1 A specification for an operational stage monitoring programme is drawn up in consultation with NRW acting on behalf of the Licensing Authority. The specification must include a timetable for the individual monitoring surveys, which are to be undertaken during the first 5 years from the commencement of dredging within the Marine Licence area;

7.2.2 Subsequent specifications must be drawn up after the completion of the substantive reviews as required by condition 8;

7.2.3 The operational stage monitoring programme is implemented in accordance with the approved specification. The programme must be maintained

throughout the period in which dredging is carried out.

- 7.3 The operational stage monitoring programme must cover the marine licence area and the same reference sites / surrounding areas used for the pre-dredge surveys. Unless otherwise stated, reports of the operational stage monitoring will be submitted to NRW acting on behalf of the Licensing Authority within **9 months** of completion of monitoring surveys. The programme must initially include the following:

#### 7.3.1 Bathymetry and Seabed Features

High resolution multibeam bathymetry and full coverage sidescan sonar surveys covering the ADZ(s) dredged in the previous two years and extending for a distance of 500m beyond the ADZ on all boundaries should be undertaken during years 2 and 4 of the licence term. This may be subject to further review dependant on the findings of the reports. The Licence Holder must submit the reports of the bathymetric surveys to the Licensing Authority within **9 months** of the surveys being undertaken. XYZ files should be provided with all reports.

#### 7.3.2 Resource Assessments

Pre-dredge resource data and bathymetric data should be used in conjunction with bathymetric monitoring data to confirm the depth, substrate type, and extent of resource remaining. Reference must be made to the baseline resource data. The data shall be interpreted to produce updated resource information for the marine licence area. Charts must be produced in years 2 and 4 clearly indicating any areas where the coverage of resource is 0.5m or less, averaged over a grid of 250m by 250m with 125m centres. A resource thickness chart without grid averaging must also be provided. EZ"s should be established around these areas and the limits of the EZ should be shown on a chart and co-ordinates provided (as per condition 5.11).

#### 7.3.3 Benthic Ecology

Surveys, including sediment sampling with PSA, should be undertaken in Year 4. The specification and scope of the surveys must be agreed with NRW acting on behalf of the Licensing Authority in advance and must be based on the area dredged since the last survey as indicated by EMS data.

#### 7.3.4 Fisheries

At this 5 year substantive review the Licence Holder must also produce:

- (a) Evidence that fisheries consultation has been undertaken.



- 7.4 The surveys outlined in (7.3.1) to (7.3.4) should be presented at the 5 and 10 year substantive review in order to determine the frequency and scope of surveys for the rest of the licence term.

## **8. Annual Compliance and Substantive Review**

- 8.1 The Licence Holder must produce an annual report on compliance with the conditions to which this marine licence is subject. The report must include a summary of the monitoring undertaken during the previous year. The Licence Holder must submit copies of the compliance report to NRW acting on behalf of the Licensing Authority within **3 months** of the end of each **12 month period** following the date of commencement of dredging.
- 8.2 Within **9 months** of the start of the 5th and 10th years following the date of commencement of dredging within the marine licence area, the Licence Holder must submit to NRW acting on behalf of the Licensing Authority a substantive review of the dredging operations within the marine licence area. The report will summarise the results of the monitoring undertaken to date and detail:
- 8.2.1 Whether dredging should be allowed to continue;
  - 8.2.2 the spatial extent of direct and indirect impacts associated with dredging activities within the marine licence area;
  - 8.2.3 The effectiveness of the conditions imposed on the dredging operations, recommending any variations to the dredging operations as may be necessary to protect the environment;

8.2.4 Any recommendations of variations to the monitoring programme as may be necessary to ensure that effective environmental monitoring of the dredging is maintained.

8.3 The Licence Holder may continue to dredge while the substantive reviews are being considered unless:

8.3.1 The data collected or analysis undertaken to inform the substantive review fails to conform to the agreed specifications which as a consequence results in insufficient evidence to determine whether or not unacceptable impacts have occurred; and/or

8.3.2 NRW acting on behalf of the Licensing Authority have outstanding concerns during the substantive review process that unacceptable effects on the environment have occurred that were not originally predicted in the ES; and/or

8.3.3 NRW acting on behalf of the Licensing Authority confirms in writing to the Licence Holder that unacceptable environmental damage has occurred as a result of aggregate dredging.

## **9. Post-Dredge Monitoring**

9.1 The Licence Holder must ensure that a post-dredge monitoring programme is approved by NRW acting on behalf of the Licensing Authority and implemented within **12 months** of the cessation of dredging within the marine licence area. Survey specifications should be submitted to NRW acting on behalf of the Licensing

Authority and approved in writing before the surveys are due to commence.

- 9.2 9.2.1 st dredge monitoring programme must include the following surveys to cover the licence area and reference sites:

**Bathymetry and seabed features survey**

High resolution multibeam bathymetry and full coverage sidescan sonar surveys covering the licence area and extending for a distance of 1 km beyond the Licence Area on all boundaries should be undertaken, with reference to EMS data. XYZ files must be provided with all reports;

9.2.2 **Resource Assessment**

A final resource survey of the marine licence area must be carried out. Charts must be produced to show resource coverage averaged over a grid of 250m by 250m with 125m centres. A resource thickness chart without grid averaging must also be provided.

9.2.3 **Benthic ecology and seabed sediment surveys**

A final benthic ecology and seabed sediment surveys, including PSA analysis, should be undertaken at the same time, the details of which should be agreed with the Licensing Authority prior to the survey being undertaken.

9.2.4 **Fisheries**

The Licence Holder must produce;

- (a) Evidence that fisheries consultation has been undertaken

9.2.5 **Cessation of Dredging**

The Licence Holder must ensure that upon cessation of dredging the substrate must be sediment of a similar grade to the conditions that existed before dredging commenced with due allowance being made for natural sediment movements. A specification as to how this will be demonstrated must be agreed with NRW acting on behalf the Licensing Authority prior to any surveys.

9.3 A post-dredge monitoring report of (9.2.1) to (9.2.4) inclusive should be provided to NRW acting on behalf of the Licensing Authority within **9 months** of the surveys being undertaken. This should include:

9.3.1 Post-dredge survey results and analysis;

9.3.2 An assessment of the need for further post-dredge monitoring of the marine licence area;

9.3.3 Recommendations as to what remedial action, if any, should be taken to ensure that the seabed is left in a condition similar to that which existed before dredging commenced.

9.4 Should further monitoring or remedial action be identified in the post-dredge report, this work must be carried out by the licence holder at their expense and within a timetable agreed by NRW acting on behalf of the Licensing Authority.

## **10. Archaeology, War Graves and Wrecks**

10.1 The Licence Holder must comply with the Guidance Note, Marine Aggregate Dredging and the Historic Environment, issued by BMAPA and EH in April 2003, the related protocol for reporting Finds of Archaeological Interest, issued in August 2005 and any subsequent replacements of those documents. Should any object of archaeological interest be discovered during dredging or during the course of landing aggregate the Licence Holder must notify Cadw. The Licence Holder must ensure reports and returns as required by the Protocol (page 2) are submitted to: Cadw, Unit 5/7 Cefn Coed, Parc Nantgarw, Cardiff, CF15 7QQ.

10.2 The Licence Holder must comply with the Merchant Shipping Act 1995 in respect of reporting recovered „wreck“ material to the Receiver of the Wreck and the Protection of Military Remains Act 1986 in respect of the declaration of „protected place“ status to identified sites and any enactment of the Protection of Wrecks Act 1973 that may occur. Any items of archaeological and/or military interest identified and retrieved from the dredged material as it is processed ashore must be recorded and reported under the formal protocol referred to above. Cadw must be notified of these finds through the protocols implementation services or the Licence Holder.

10.3 The Licence Holder must submit a WSI (Written Scheme of Investigation) to be approved by NRW acting on behalf of the Licensing Authority prior to the commencement of dredging outside of the RDZ. The WSI must clarify the configuration of dredging EZ"s around any identified anomalies, the extent of the multibeam bathymetric survey and how these monitoring surveys will be designed/configured to produce the high quality data that will be needed to determine whether any archaeological material is stable.

**11. Navigation**

11.1 The Licence Holder must ensure all dredging vessels maintain a listening watch on VHF Channel 16.

11.2 The Licence Holder must ensure Masters of all dredgers „call up“ on Channel 16 when approaching a dredging area at a distance of no less than 10 miles, then change to another inter-ship channel to provide full details, if required. Masters must give their estimated time of arrival in the area, position and details of the gear being worked. Once communications have been established, liaison can take place to allow time for the removal of fishing gear as may be necessary. Dredging must only commence clear of fishing gear, until it has been removed.

11.3 The Licence Holder must ensure all vessels used during the dredging operations (including transiting to and from the Licence Area) exhibit sounds and signals in accordance with the International Regulations for the Prevention of Collision at Sea 1972 (as amended).

- 11.4 The Licence Holder must ensure a notice of operations is issued, at least **5 days** prior to dredging commencing, to inform mariners and fishermen's organisations of the date when dredging operations are to commence under this Licence.
- 11.5 The Licence Holder must notify the UK Hydrographic Office of the timetable of dredging operations, within **10 days** of the commencement of dredging, to permit the promulgation of maritime safety information and updating of nautical charts and publications where necessary.
- 11.6 The Licence Holder must ensure data relating to underwater obstructions for the purpose of identification is obtained.
- 11.7 The Licence Holder must comply at all times to the Guide to Good Practice for ensuring Navigation Safety during Dredging Operations that has been formalised between BMAPA, Maritime Coastguard Agency and Trinity House Lighthouse Services.
- 11.8 If, in the opinion of NRW acting on behalf of the Licensing Authority the assistance of a Government Department, including the broadcast of navigational warnings, is required in connection with the works or to deal with any emergency arising from the failure to mark and light the works as required by this letter, or to maintain the works in good order or from the drifting or wreck of the works, the owner of the works shall be liable for any expense incurred in securing such assistance.

## **12. Monitoring Fees**

- 12.1 The Licence Holder must pay annual fees to NRW acting on behalf of the Licensing Authority in respect of our consideration of the baseline monitoring, operational monitoring reports and the post-dredge report, if applicable. The first annual fee, which will be £3,250 is payable when the first annual monitoring report is due in accordance with Condition 6. The fee must then be paid annually on that day until the last operational monitoring report is submitted, or the post-dredge report is submitted if applicable, or otherwise as agreed by NRW acting on behalf of the Licensing Authority.

## **13. Distribution of Copies of this Licence**

- 13.1 The Licence Holder is required to ensure that a copy of this Licence and attached Schedule, any special conditions and any subsequent revisions or amendments thereto is given to:
- 13.1.1. All Agent(s), Contractor(s) and Masters of all vessels responsible for undertaking dredging operations.
- 13.2 Copies of this Licence shall also be available at the following locations;
- 13.2.1 At the address of the Licence Holder;
- 13.2.2 On board each vessel employed to carry out dredging operations

13.3 All Agent(s), Contractor(s) and Master(s) of all vessels employed to carry out dredging operations permitted by this Licence must adhere, at all times, to the terms and conditions of this Licence and any subsequent revisions or amendments.

#### **14. Inspection of the Operation**

14.1 The documents referred to in paragraph 13 shall be available at all reasonable times for inspection by authorised Marine Enforcement Officers at the locations stated in that paragraph.

14.2 The Licence Holder must allow officers of the Maritime and Coastguard Agency, Marine Enforcement Officer or any other person authorised by NRW acting on behalf of the Licensing Authority to inspect the works at any reasonable time.

#### **15. Returns to be made to NRW acting on behalf of the**

##### **Licensing Authority**

15.1 The Licence Holder must notify NRW acting on behalf of the Licensing Authority and Marine Enforcement Officers in writing of the date on which dredging operations commenced within **10 days** of the commencement of dredging.

15.2 The Licence Holder must notify NRW acting on behalf of the Licensing Authority and Marine Enforcement Officers in writing of the date on which dredging operations cease within **7 days** of the cessation of dredging.

15.3 The Licence Holder must provide quarterly returns to NRW acting on behalf of the Licensing Authority, in writing, on the amount of material landed from Area 392 and 393 in both tonnes and m<sup>3</sup> (wet weight/as dredged).

#### **16. Contacts**

16.1 Except where otherwise indicated, the primary point of contact with NRW acting on behalf of the Licensing Authority and the address for returns and correspondence shall be:-

**Marine Licensing Team  
Natural Resources Wales  
Cardiff Permitting Centre  
29 Newport Road  
Cambria House  
Cardiff  
CF24 0TP  
Email: [marinelicensing@naturalresourceswales.gov.uk](mailto:marinelicensing@naturalresourceswales.gov.uk)**

16.2 For the purposes of this Licence any references to the Marine Enforcement Officers shall mean the relevant officers located at:-

**Welsh Government  
Suite 3  
Cedar Court**





**SA73 3LS**

**Tel: 01646 693412**

**Email: [milfordhavenfisheryoffice@wales.gsi.gov.uk](mailto:milfordhavenfisheryoffice@wales.gsi.gov.uk)**

**17. Force Majeure**

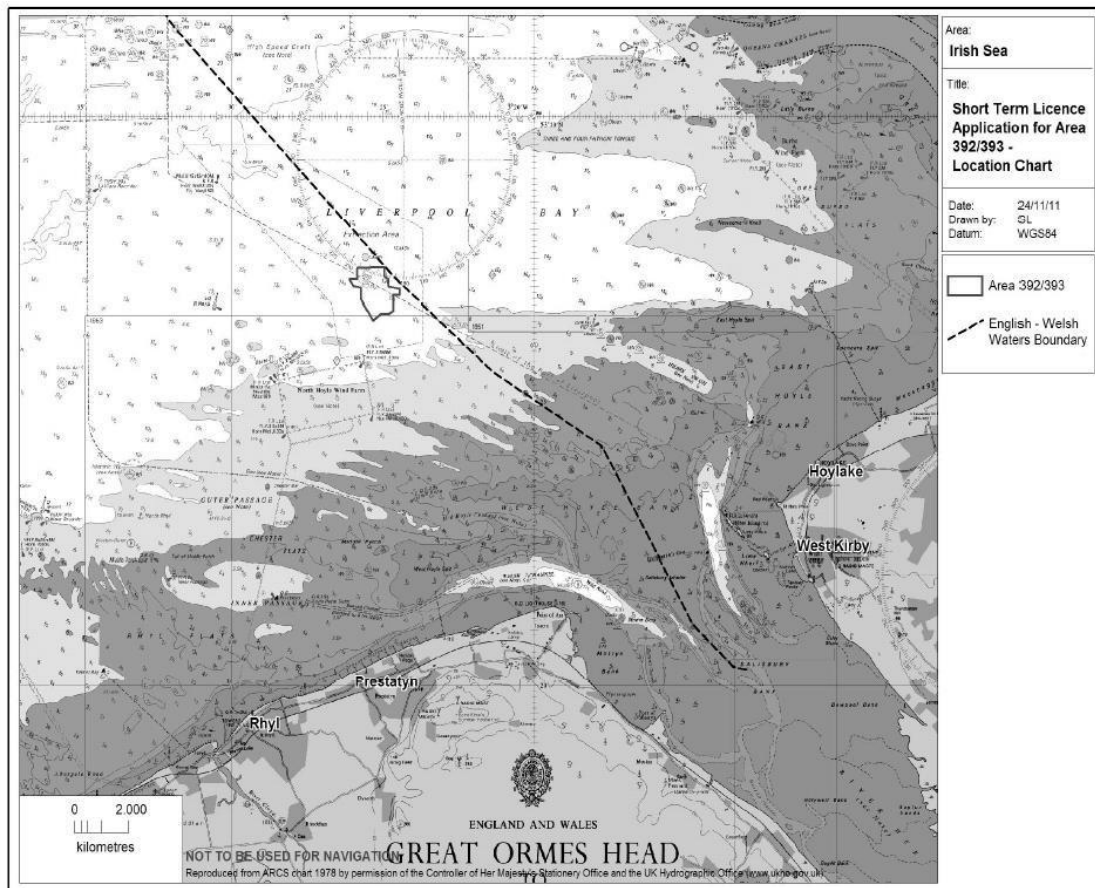
- 17.1 If, by reason of "force majeure" deposits are made as a result of the dredging operations full details of the circumstances shall be notified to the Licensing Authority within **48 hours** of the incident occurring.

"Force majeure" may be deemed to apply when, due to stress of weather or any other cause, the master of a vessel determines that it is necessary to deposit the substances or articles because the safety of human life and/or of the vessel is threatened.

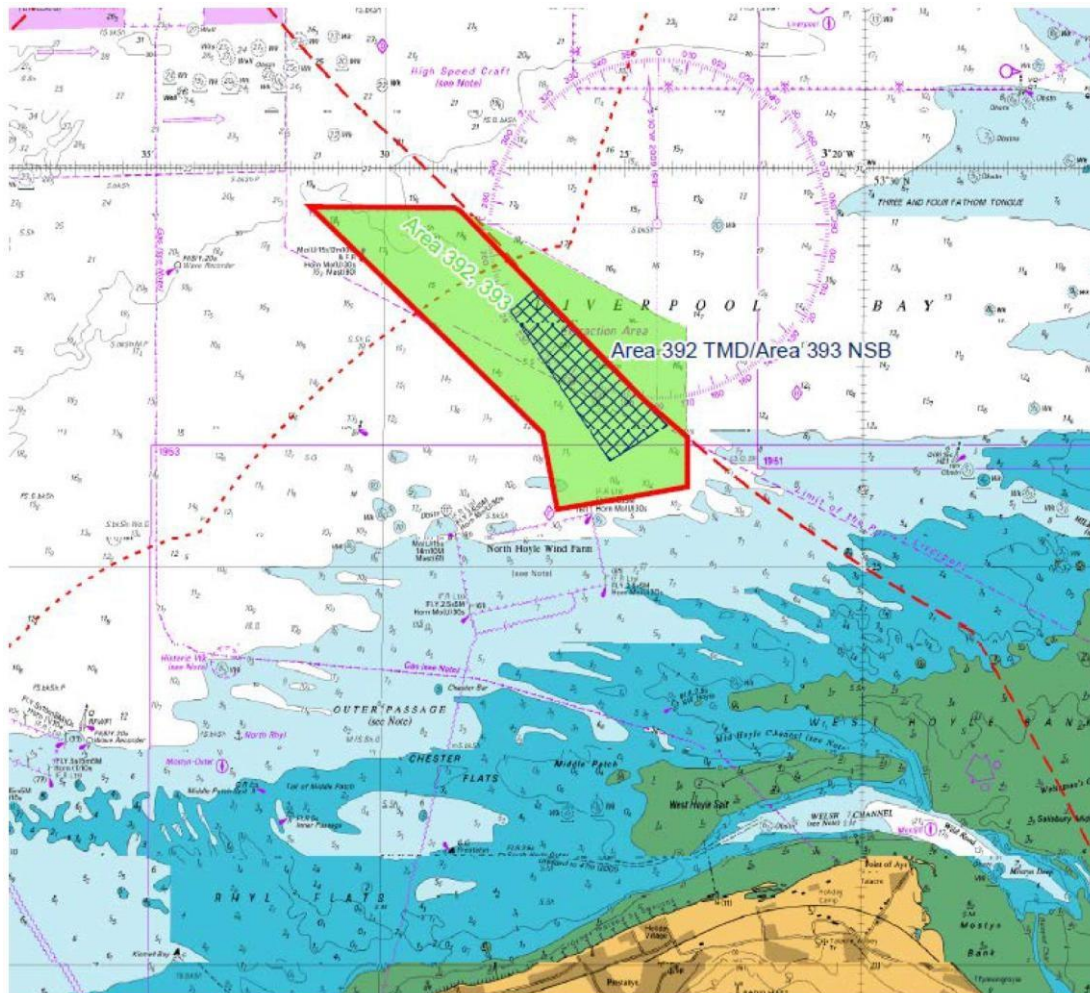
**18. Changes to this Licence**

- 18.1 In the event of the Licence Holder becoming aware that any of the information on which the granting of this Licence was based has changed or is likely to change, he/she shall notify NRW acting on behalf of the Licensing Authority at the earliest opportunity of the details.
- 18.2 Similarly in the event that the Licence Holder wishes any of the particulars set down in the Schedule to be altered he/she shall inform NRW acting on behalf of the Licensing Authority at the earliest opportunity before taking any further action.

Hilbre Swash Licence Area (Dredging area 392/393) – Restricted Dredge Zone



Hilbre Swash Licence Area (Dredging area 392/393 outlined in red)




**Sign off**

**Produced by:** Scott Leighton – Marine Licensing Team

**Signed:** 

**Date:** 27<sup>th</sup> November 2013

**Approved by:** Eleanor Smart – Marine Licensing Manager

**Signed:** 

**Date:** 27<sup>th</sup> November 2013

