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Mr Stephen Eades
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SN14 6LN

Our Ref: J/1/06/0786/JXL/20

Your Ref: /

29th July 2005

Please reply to: Jonny Lewis

Tel: 01489 860061

Dear Mr Eades,

Application for a Government View: Area 401/2 (Great Yarmouth) Licence Renewal

In February 2005 the Environmental Statement (ES) produced by Emu Ltd in relation to an application by Hanson Aggregates Marine Limited (HAML) to renew the dredging licence currently held for Area 401/2 off Great Yarmouth was issued for public consultation.

The formal consultation process for this application ran from the 11th February to 21st April 2005, and allowed 12 weeks for responses from consultees, as required by the Government View Procedure (GVP). Adverts were placed in the Fishing News, Lowestoft Journal, Great Yarmouth Mercury and Eastern Daily Press to announce the application and during the consultation period a full set of the supporting documents were lodged at Great Yarmouth Borough Council, Suffolk Coastal District Council, Norfolk County Council and Waveney District Council. In total, 231 responses were received in response to the ES.

Please find below a response to your comments and recommendations. We have also provided copies of the Technical Notes (TN) describing aspects of the application that were identified as a cause for concern by consultees. These Technical Notes expand on specific issues raised by consultees and provide further details of proposed monitoring and management of future activities in Area 401/2.

The content of the technical notes is referred to throughout this letter and we would ask you to review all material provided.

The following sections correspond to the sections of your original letter.



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Need for the Resource

Please refer to TN2 which provides a review of information regarding the sustainability of continued extraction from Area 401/2.

The Applicants have reviewed recent planning guidance as shown in TN2 for the South East and East of England, and London, make reference to continued need for a variety of primary aggregate minerals to supply the construction industry. The South East and London guidance specifies a continued requirement for similar levels of supply of marine aggregates for the foreseeable future (to 2016 under the terms of ODPM Minerals Planning Guidance 6 and amendments). Volumetric supply of primary minerals to the South East, East and London regions is also likely to increase slightly in light of recent regional development plans.

Area 401/2 exists as a proven sand and gravel resource. The area has been worked since 1996 and a significant body of monitoring exists that has been reviewed during the application for re-licensing. The findings of the review are contained in the ES and Technical Notes. It has been concluded that the available evidence shows that impacts of extraction at area 401/2:

- Have virtually undetectable impacts on the physical and sedimentary processes immediately outside of the licence boundaries and therefore no perceivable impact on the offshore banks or coastline of Norfolk or Suffolk.
- Have had detectable impacts on the benthic communities of the area dredged but recovery has occurred in agreement with commonly accepted theories. Due to the nature of the seabed in the area many of the communities are resistant to disturbance and are capable of relatively rapid recovery.

Therefore the present understanding of impacts occurring at Area 401/2 means that a measured assessment of the likely impacts of continued extraction can be undertaken. This basis for future management would allow a more informed management strategy to ensure continuation of supply of a proven resource, to existing markets.

Alternatives to the resource extracted from area 401/2 are available. However, their availability is constrained both by supply and demand factors. Often, supply is restricted to areas close to the source and demand for alternatives is limited by the quality of the material available. Despite significant recent increases in utilisation of material previously considered waste, the amount of marine aggregates used has not changed significantly. This shows that replacement of marine sand and gravel by other resources is not necessarily possible and that use of alternatives for low specification end uses already accounts for a significant proportion of total aggregate supply.

Therefore, at present there is:

- A proven and probably increasing need for the resource based on regional planning guidance.
- A proven source of aggregate with capability of supplying established markets.
- A body of monitoring evidence that confirms the forecasts of modelling and environmental assessments of dredging, undertaken across the region for more than 15 years.
- An improving understanding of the scale and extent of impacts on the benthic environment and the rate of recovery of sites post dredging.
- A clear understanding of the nature of the resource, its place within the sedimentary environment and the insignificant impact extraction of the resource has on the natural sediment transport processes of the region.
- An established time series assessment of the cumulative nature of physical impacts across the Yarmouth Block as a whole (undertaken as part of the CIS).

- An established method of working in the Area to minimise interference between extraction operations and other seabed users as shown by fisheries continuing to target the larger 401/2 area outside the active extraction zone for a proportion of the year.

Bearing in mind the above it is concluded that 401/2 provides an established and sustainable resource that is produced for established markets requiring continued supply up to at least 2016.

The applicants agree that a more coherent monitoring and management framework would aid review of the impacts of extraction. TN6 is provided outlining the proposed monitoring and mitigation for a continued licence to extract.

Your recommendation for Government View

No re-licensing should occur until the need for Area 401/2 to be re-licensed in order to meet the aggregate needs of the South East region has been clearly established.

Conclusion of the Review of Available Information

If viable alternatives to resources from 401/2 existed then they would already be being utilised by the construction industry. Despite the availability of recycled and secondary they cannot readily be considered as alternatives to the sand and gravel extracted from Area 401/2. A continued need is forecast based on central government and regional planning guidance and forecast developments in the South East of England and London.

Physical Nature of the Seabed

Please refer to TN1 which provides a review of information regarding the sustainability of continued extraction from Area 401/2.

The physical nature of the seabed within the extraction area has been clearly established by the applicant company. This assessment is undertaken throughout the lifetime of the licence to extract as its findings inform the day to day management of the extraction operation. Companies maintain a store of resource information but supply of this information to the wider public is not possible as it is commercially sensitive. What is supplied during the environmental assessment process is a general description of the morphology and character of the seabed, the type of resource being targeted and also a description of any sediments that move across the seabed. Vibrocores are used to determine the depth of resources within the area and companies target resources of a sufficient depth.

The data gathered in support of extraction activities are considerable however not all of the data are available for public release.

Your recommendation for Government View

No relicensing can be determined until the basic information as to the physical nature of the seabed has been provided by the applicant.

Conclusion of Review of Available Information

Some data regarding the available resource is commercially sensitive and not available for review.

All available data related to the nature of the seabed and marine environment at Area 401/2 has been reviewed. The results of this review are provided in the Environmental Statement.

The available data provides a description of both:

- The nature of seabed and its habitats and species
- The physical effects of aggregate extraction on the nature of the seabed

The value of monitoring data in assessing the scale of impacts from aggregate extraction in Area 401/2 has been confirmed. It is therefore recommended that a continued programme of monitoring and management is undertaken during any extension of the licence.

A proposed monitoring and mitigation plan is provided in TN6.

Coastal Impact Study

Please refer to TN2 which provides a review of information regarding the sustainability of continued extraction from Area 401/2.

The coastal impact study is the culmination of approximately 30 years of focussed study of the coastline, banks and offshore areas of the Southern North Sea. IIR Wallingford are independent consultants who have developed world leading techniques for providing a precautionary assessment of the likely effects of extraction proposals. The CIS in support of the re-licensing process not only considered localised effects of extraction in Area 401/2 but also considered the cumulative impacts of extraction across the Yarmouth block and specifically addresses the potential impacts of extraction on the offshore banks.

The coastal impact study and review of monitoring data provided in TN6 concluded that any influence of extraction on physical processes is confined to the immediate area of activities and that no significant impact on the offshore banks or coastline are anticipated.

Monitoring has been proposed to continue to provide information that will allow ongoing review of this issue.

Your recommendation for Government View

- i) The applicant undertakes a full assessment of the impact of dredging on the offshore sandbanks and has properly assessed whether the changes in the nature of these sandbanks is leading to an alteration in the height and velocity of waves arriving on the coastline, and**
- ii) The UK Government has applied the EU Strategic Environmental Assessment Directive to the East Coast (Great Yarmouth) block of licences.**

Conclusion of Review of Available Information

- i) An assessment of the impact of extraction on the offshore sandbanks has been undertaken (CIS) and this has been reviewed in light of the available monitoring data (TN1)
- ii) The UK Government has applied the EU Strategic Environmental Assessment Directive to the East Coast (Great Yarmouth) block of licences

Plume Study

The plume study for Area 401/2 was based on modelling of plume behaviour in Area 254. The 401/2 plume study assumed that, the tidal currents and likely volume and character of sediments released by extraction operations, as modelled for the 254 study, were similar to those conditions in Area 401/2. On this basis an assessment of the likely impact of plumes generated by extraction operations was undertaken considering the volumes of fine sediment likely to be released by extraction over the period of the licence.

Your recommendation for Government View

No new licences should be granted until the plume dispersion model has been empirically tested and validated.

Conclusion of Review of Available Information

There is concern that there has been no empirical confirmation of the plume data and that impacts of the plume have not been adequately assessed. Whilst it is accepted that no field data specific to the plume has been gathered, the results of the benthic monitoring survey and seabed sediment survey conclude that the impacts of extraction beyond the licence boundaries were limited.

Active dredging has only taken place in the northern part of Area 401/2 since 1996. In these areas, species diversity, abundance and biomass have decreased, as would be expected, and the community has changed from one characterised by *Ophiura* brittlestar assemblages to one dominated by polychaetes. However, in areas away from active dredging, i.e. to the south of active dredged areas but still within the boundary of Area 401/2, the benthic community is still characterised by brittlestars, bivalves, polychaetes and echinoderms, as existed before dredging began. It is accepted that in these areas to the south of the active dredged areas, the abundance and diversity is less than recorded in the 1993 pre-dredge survey, but the characteristic community that existed pre-dredge is still present.

This indicates that although screening has taken place in the north of the site, it does not appear to have resulted in a significant change in community composition to the south of the dredge area, as would be expected if large amounts of screened sediment had been deposited on the seabed in this area. These data from the ecological survey appear to confirm the findings of the plume study that stated that the majority of coarse material (sand) will be deposited within 50-100m of the dredger and.

However, there would be some value in reviewing the monitoring data during a permitted re-licensing period in order to monitor any development of significant impacts beyond the licence area due to plume effects. A suggestion to undertake such a review is included in TN6.

The Biological and Ecological Impact

A number of issues are raised under this heading. Responses to these concerns, and the recommendations of the Government View, are provided below.

Assumption that the 2004 benthic survey should act as a baseline for the re-licensing procedure

It is accepted that the 1993 survey will act as a baseline for any re-licensing of Area 401/2. Unfortunately, the 1993 survey only comprised 8 survey stations over the then 3 licence areas (401/1, 401/2 and 401/3) and as such, does not provide a particularly robust baseline against which to assess future effects. Therefore, reference will also continue to be made to the 2004 survey as this contains stations where dredging has not yet taken place and as such, still represent pre-dredge conditions.

At present the 2004 Emu report does not provide an adequate portrait or record of the 1993 and 1995 surveys

Both these reports were reviewed as part of the EIA process and the key findings summarised in the main ES. Actual data from these surveys was also used in a multivariate data analysis exercise presented in the 2004 benthic ecology report.

Your recommendation for Government View

- (i) Licence should not be granted until the baseline benthic survey undertaken in 1993 and 1995 has been clearly recorded in the ES and the benthic survey undertaken by the applicant in 2004 has been referenced against this baseline
- (ii) Re-licensing should not be permitted until the applicant has formulated a management policy to govern aggregate extraction in Area 401/2 based on the ecosystem approach.
- (iii) No re-licensing should occur until impacts on *Sabellaria spinulosa*, *Ophiura*, meiofauna and phytoplankton communities and the fishery in Area 401/2 have been properly addressed.

Conclusion of Review of Available Information

- (i) A baseline benthic survey was undertaken in 1993, followed by a further ecological survey in 1995 to describe potential areas of *Sabellaria spinulosa* reef. A subsequent benthic monitoring survey was undertaken in 2000 and a further survey, undertaken as part of the recent EIA process, was completed in July 2004.

The findings of each of these surveys were summarised in the recent ES in Section 7.1.4. Details of previous *S. spinulosa* surveys were also recorded in Section 8.8

In terms of reference between the 2004 survey and previous surveys, the benthic ecology report produced by Emu in 2004 included a section comparing data from 1993, 2000 and 2004. Investigation of these three faunal datasets was undertaken using multivariate techniques, including Bray Curtis similarity and SIMPER analysis to identify and characterise any temporal changes in community structures since dredging began. Therefore, the 2004 survey has already been referenced against the 1993 baseline.

- (ii) In order to provide information as to how the renewed licence would provide a management regime that would maintain the health of the ecosystem alongside appropriate human use, a series of relevant technical notes have been prepared. TN3 (Nature Conservation) provides details on a 6-stage approach to managing any areas of *S. spinulosa* reef in Area 401/2 whilst TN6 (Mitigation & Monitoring) provides a preliminary plan of mitigation and monitoring for the site for the period 2006 to 2013.

Within these TN's environmental objectives have been set, for example, there is a stated commitment from the Applicants to avoid known areas of *S. spinulosa* reef by enforcing a 1km exclusion zone around such areas. There are also clear objectives set out in relation to the proposed monitoring within TN6.

In terms of future development of any mitigation and monitoring plan for the site, it is expected that a formal monitoring plan will be agreed following consultation between the applicants and Defra/CEFAS/JNCC and other relevant stakeholders. We will keep you informed of the development of this monitoring plan.

- (iii) *Impacts upon S. spinulosa*

Details on the potential impacts of the proposed dredging on *S. Spinulosa* reef are provided in TN3.

Impacts upon brittlestars

Details on the potential impacts of the proposed dredging on *S. Spiculosa* reef are provided in TN3.

Impacts upon the meiofauna and phytoplankton

The consultee notes that there is no mention within the baseline ecology report of the role of meiofauna and phytoplankton and, as such, the ES is incapable of making any credible assertion about the impact of aggregate dredging on the benthos of the area.

It should be recognised that under the current guidelines for undertaking FIA's related to marine aggregate extraction (MMG1), there is no stated requirement to sample meiofaunal communities or phytoplankton. Rather, current advice states that macrobenthic data should be collected and assessed in order to describe baseline ecological conditions and also to detect any changes following dredging. It is also important to note that the survey design for the 2004 survey was approved by CEFAS prior to undertaking this work and they did not feel that any specific meiofaunal data collection was required.

Whilst we recognise that the meiofauna and phytoplankton play an important role in ecosystem function, we also feel that data provided from the macrobenthos is currently suitable to describe baseline conditions and to detect dredging effects. This has been proven over the course of the 1993, 2000 and 2004 macrobenthic surveys undertaken at Area 401/2, the data from which has indicated a change in community composition in areas subject to active dredging.

Further, in their response to the ES produced for this application Defra state that the Benthic Ecology report produced by Emu "*allows a comprehensive analysis of the effects produced by dredging activity*".

Therefore, although we accept that analysis of meiofaunal and phytoplankton may have provided extra information on dredging effects on the ecosystem in Area 401/2, we do not accept that the ES has failed to acknowledge the basic principles of ecosystems and how they function. Neither do we accept that our "failure" to study the impact on meiofauna invalidates the assertion in the ES that the significance of impacts on the benthos will be Low.

Impacts upon the fishery

Further details of the potential impacts of the proposed dredging on fish and fisheries are provided in TN4.

Conclusion

We would like to take this opportunity to thank you for providing comments on this application on behalf of Marinet. We hope that the information provided in this letter and the supplementary information goes some way to reducing some of the concerns noted in your response. We also note that you have particular concerns over the proposed scope of monitoring for Area 401/2. It should be noted that the mitigation and monitoring plan provided (TN6) will act as the starting point for future discussions with relevant regulatory bodies about future monitoring at Area 401/2. We will keep you informed about progress with this monitoring plan, as and when appropriate.

The Next Stage

Following our response to your comments, you now have a further opportunity to comment on the additional information provided. **Any further responses should be sent to Emu Ltd by Friday 9th September 2005.**

Subsequent to this, a summary of the application thus far will be sent to the Office of the Deputy Prime Minister (ODPM), to mark the Confirmation Stage of the GVP. The ODPM will then contact you further to determine if you are satisfied with the process. This will aid them in forming their Assessment of the Application. Following this, the final stage of the process will be the Determination and Decision stage, whereby a Government View will be issued. If this is positive, it will be accompanied by a list of monitoring and mitigation, agreed between the Applicants (HAML) and the regulatory authorities, which are bound by law to the licence.

Thank you for taking the time to respond to the application.

Yours sincerely,



Jonathan Lewis
Project Manager
Emu Ltd

Enclosed:

TN1	Physical Processes	✓
TN2	Sustainability Issues	✓
TN3	Nature Conservation	✓
TN4	Fish and Fisheries	✓
TN5	Cumulative Effects	✓
TN6	Mitigation and Monitoring	✓