

## FINDING OF NO SIGNIFICANT IMPACT

### **Issuance of a Negotiated Agreement for Use of Outer Continental Shelf Sand from Unnamed Shoal in the Wallops Island, Virginia Post-Hurricane Sandy Shoreline Repair**

Pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508) and Department of the Interior (DOI) regulations implementing NEPA (43 CFR 46), the National Aeronautics and Space Administration (NASA) Wallops Flight Facility, in coordination with the Bureau of Ocean Energy Management (BOEM), prepared an environmental assessment (EA) to determine whether authorizing the use of Outer Continental Shelf (OCS) sand from Unnamed Shoal A in the Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program (SRIPP) would have a significant effect on the human environment and whether an environmental impact statement (EIS) should be prepared. The EA tiers from the Final Programmatic Environmental Impact Statement (PEIS) prepared by the National Aeronautics and Space Administration (NASA).

BOEM's proposed action is the issuance of a negotiated agreement, and its purpose is to authorize use of an OCS borrow area, Unnamed Shoal A (sub-areas A-1 and A-2), so that NASA can obtain the necessary sand resources to undertake the beach nourishment project. The project is needed to address shoreline erosion and protect valuable property along the Wallops Island Flight Facility shoreline. This renourishment effort is presently being constructed using funding provided through Disaster Relief Appropriations Act of 2013 to address impacts from Hurricane Sandy.

Pursuant to NEPA, NASA described the affected environment, evaluated potential environmental impacts resulting from the proposed action, and developed and described alternatives to the proposed action in its *Final Programmatic Environmental Impact Statement Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program (Final PEIS)*. (NASA 2010; [http://sites.wff.nasa.gov/code250/final\\_sripp\\_peis\\_document.html](http://sites.wff.nasa.gov/code250/final_sripp_peis_document.html)). In March 2011, BOEM, as a cooperating agency, adopted the Final PEIS and issued a Record of Decision authorizing use of OCS sand in the initial construction of the Wallops Flight Facility SRIPP. This EA incorporates by reference the effects analyses in these previous environmental documents that have been determined to still be valid and augments a subset of analyses in light of new information.

NASA and BOEM identified and reviewed new information to determine if any resources should be re-evaluated, or if the new information would result in significantly different effects. New information was identified that further supports or elaborates on the analyses or information presented in existing NEPA documents, but it did not change the conclusions of any of those analyses. Based on the analyses in the EA, no new significant impacts were identified that were not already adequately addressed, nor was it necessary to change the conclusions of the types, levels, or locations of impacts described in those documents

## **Alternatives to the Proposed Action**

The 2010 EIS considered in detail a range of potential shore protection alternatives, including the extension of the seawall combined with beach fill and the extension of the seawall combined with beach fill and sand retention structure (either groin or breakwater). These alternatives were evaluated in more detail and their components (i.e., location of sand retention structure, length and width of beach fill, renourishment frequency) were combined into 54 different potential alternatives. Based upon a combination of economic, engineering, and environmental factors, NASA selected beach nourishment combined with a seawall extension as the alternative that would best meet its needs for the Wallops Flight Facility SRIPP. The project was initially constructed in 2012. NASA's most recent monitoring effort, conducted in November 2012 following Hurricane Sandy (which made landfall in late October 2012), identified the need to repair the southern two-thirds of the recently nourished beach and a section of the seawall. Subsequent to NASA identifying this need, Public Law 113-2, Disaster Relief Appropriations Act, 2013, was signed into law on January 29, 2013. There is a provision within the bill for NASA to repair its facilities that sustained damages during Hurricane Sandy. Accordingly, NASA (with BOEM as a cooperating agency) has prepared this EA to consider this maintenance cycle in order to return the Wallops shoreline to the condition described in the 2010 EIS preferred alternative.

As an alternative to the proposed action, BOEM considered not authorizing use of the Unnamed Shoal A (sub-areas A-1 and A-2) borrow area. The project proponents could either (a) re-evaluate the project to choose another alternative method or sand source to restore the Wallops Flight Facility SRIPP, or (b) locate an onshore source of comparable high-quality sand. Option A may be viable if another sand source, such as Unnamed Shoal B, is considered. The borrow area at Unnamed Shoal B is approximately 5 miles further from the placement site than Unnamed Shoal A. The extra transportation distance would lead to increased impacts to air quality, increased potential for ship strike of endangered species and marine mammals and an additional financial burden. Option B is not considered to be viable as sources of approved onshore sand are limited. Even if a sufficient amount of high-quality sand is located onshore, Option B is likely to result in increased environmental disruption/effect from the onshore excavation of and overland transport. Alternatively, NASA could not undertake the project at this time. In the case of the no project option, coastal erosion would continue, sea turtle and shorebird nesting habitat would deteriorate, and there is the potential for damage to critical NASA infrastructure including some of NASA and the Commonwealth of Virginia's most critical launch assets, including Launch Complex 0 and multiple sounding rocket pads.

## **Environmental Effects**

The EA evaluates potential environmental effects resulting from the issuance of a negotiated agreement. The connected actions of conveyance and placement of the sand are considered. The EA and FONSI identify all mitigation, monitoring, and reporting requirements necessary to avoid, minimize, and/or reduce and track any foreseeable adverse impacts that may result from all phases of construction. A subset of mitigation, monitoring, and reporting requirements, specific to activities under BOEM jurisdiction, will be incorporated into the negotiated agreement to avoid, minimize, and/or reduce and track any foreseeable adverse impacts (Attachment 1).

### *Significance Review*

Pursuant to 40 CFR 1508.27, BOEM evaluated the significance of potential environmental effects considering both CEQ context and intensity factors. The potential significance of environmental effects has been analyzed in both spatial and temporal context. Potential effects are generally considered reversible because they will be minor to moderate, localized, and short-lived. The ten intensity factors were considered in the EA and are specifically addressed below:

#### *1. Impacts that may be both beneficial and adverse.*

Potential adverse effects to the physical environment, biological resources, cultural resources, and socioeconomic resources have been considered. Adverse effects to benthic habitat and communities in the borrow area are expected to be reversible. Short-term and local effects on fish habitat and fishes are expected within the dredged area due to reduction of benthic habitat and prey, as well as changes in shoal morphology and burial of existing benthic habitat in the fill area. Dredging operations will be performed to avoid the creation of deep pits in the borrow area. Potential effects to sea turtles, marine mammals, and Atlantic sturgeon in the vicinity of operations have been reduced through tested mitigation, such as sea turtle deflector use, sea turtle monitoring and protected species observers. Temporary displacement of or behavior modification of birds near the borrow areas or beach placement could occur. Overall, impacts would be short-term, localized and temporary and should have no lasting effects on bird populations in the area. Temporary reduction of water quality is expected due to turbidity during dredging and placement operations. Best management practices for erosion and turbidity controls will be used pursuant to the requirements of the Virginia Water Protection Permit. Small, localized, temporary increases in concentrations of air pollutant emissions are expected, but the short-term impact by emissions from the dredge or the tugs would not affect the overall air quality of the area. A temporary increase in noise level and a temporary reduction in the aesthetic value offshore during construction in the vicinity of the dredging would occur. For safety reasons, navigational and recreational resources located in the vicinity of the dredging operation would temporarily be unavailable for use. There would also be beneficial impacts from increased storm protection for valuable infrastructure and newly created shorebird and sea turtle nesting habitat.

#### *2. The degree to which the proposed action affects public health or safety.*

The proposed activities are not expected to significantly affect public health. Construction noise will temporarily increase ambient noise levels and equipment emissions would decrease air quality in the immediate vicinity of placement activities. Dredging operations will be performed in accordance with an environmental protection plan, addressing marine pollution, waste disposal, and air pollution. The public is typically prevented from entering the segment of beach under construction, so recreational activities will not be occurring in close proximity to operations.

#### *3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

No prime or unique farmland, park lands, designated Wild and Scenic reaches, or wetlands would be impacted by implementation of this project. No critical habitat for the listed species is located within the project area. Unnamed Shoal A has been designated as Essential Fish Habitat

(EFH) for 26 federally managed species. Dredging may affect feeding success of EFH species due to turbidity, habitat perturbation, and loss of benthic prey. Impacts to EFH would occur on Unnamed Shoal A, but the limited spatial and temporal extent of dredging will not adversely affect EFH on a broad scale. NASA has agreed to implement, pursuant to 305(b)(4)(A) of the MSA, the National Marine Fisheries Service (NMFS) EFH conservation recommendations. Cultural resources are described in more detail below.

*4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

No effects are expected that are scientifically controversial. Effects from beach nourishment projects, including dredging on the OCS, are generally well studied. The effects analyses in the EA has relied on the best available scientific information, including information collected from previous dredging and nourishment activities in and adjacent to the project area. Numerous studies and/or monitoring efforts have been undertaken in the vicinity of Unnamed Shoal A evaluating the effects of dredging and beach nourishment on shoreline change, habitat condition, benthic communities, and fish.

*5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

Beach nourishment is a common solution to coastal erosion problems along the mid-Atlantic coast. Beach nourishment along the Wallops Flight Facility SRIPP previously occurred in 2012. The project design is typical of beach nourishment operations. Mitigation and monitoring efforts are similar to that undertaken for past projects and have been demonstrated to be effective. The effects of the proposed action are not expected to be highly uncertain, and the proposed activities do not involve any unique or unknown risks. No significant adverse effects were documented during or as a result of the past operation. The potential impacts on sea turtles, Atlantic sturgeon, North Atlantic right whales, blue whales, sperm whales, and fin whales were previously coordinated with the National Marine Fisheries Service (NMFS). On March 21, 2013, NMFS notified NASA that the scope of the Proposed Action would be within that already considered in its August 3, 2012 biological opinion (BO) and that the new information did not warrant re-initiation of formal Endangered Species Act (ESA) consultation (see EA Appendix A). On March 20, 2013, US Fish and Wildlife Service (USFWS) notified NASA that the scope of the Proposed Action would be within that already considered in its July 30, 2010 programmatic BO (see EA Appendix A). In developing the BOs, NMFS and USFWS provided mandatory terms and conditions that NASA must follow to reduce potential effects to listed species. NASA and USACE (partnering with NASA to complete the construction) will ensure that their contractors implement these measures on their behalf. Mitigation and monitoring efforts are similar to that undertaken for past projects and have been demonstrated to be effective. The effects of the proposed action are not expected to be highly uncertain, and the proposed activities do not involve any unique or unknown risks.

*6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

No precedent for future action or decision in principle for future consideration is being made in BOEM's decision to authorize re-use of the Unnamed Shoal A for this construction cycle. BOEM considers each use of a borrow area on the OCS as a new federal action. The Bureau's

authorization of the use of the borrow area does not dictate the outcome of future leasing decisions. Future actions will also be subject to the requirements of NEPA and other applicable environmental laws.

*7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*

Significance may exist if it is reasonable to anticipate cumulatively significant impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The EA identifies those actions and potential impacts related to underlying activities. The EA concludes that the activities related to the proposed action are not reasonably anticipated to incrementally add to the effects of other activities to the extent of producing significant effects. Because the seafloor is expected to equilibrate, sand moving alongshore and will slowly accumulate offshore, the proposed project provides an incremental, but localized effect on the reduction of offshore sand resources. Although there will be a short-term and local decline in benthic habitat and populations, both are expected to recover within a few years. No significant cumulative impacts to benthic or fish habitat and associated communities are expected from the continued use of the borrow area, although NMFS Habitat Conservation Division has expressed some concern over the repetitive use if dredging will re-occur at intervals more frequent than the expected time recovery of benthic communities.

*8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*

The proposed action is not expected to adversely affect historic resources. Seafloor-disturbing activities (e.g., dredging, anchoring, pipeline emplacement and relocation) may occur during proposed construction activities. NASA conducted remote sensing surveys of Unnamed Shoal A in 2009 in order to meet compliance with the National Historic Preservation Act (NHPA) and the Abandoned Shipwreck Act. No significant submerged cultural resources were identified at either shoal studied. NASA coordinated with the Virginia Department of Historic Resources (DHR). BOEM will work with DHR should shipwreck remains be unexpectedly discovered (30 CFR 250.194 and 30 CFR 250.1010). NASA also coordinated with the Catawba Indian Nation the Lenape Indian Tribe of Delaware, and the Pocomoke Indian Nation. No significant impacts to cultural resources in the project area (borrow, placement or pump-out areas), as result of the proposed action, are anticipated with implementation of the measures to cease work if an unexpected discovery occurs, and immediate notification to DHR so they can determine if the resource is significant or not and make the determination of the best means to protect the resource. All of these activities have been completed in accordance with the NHPA as amended; the Archeological and Historic Preservation Act (AHPA), as amended; and Executive Order 11593.

*9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

Nesting and swimming sea turtles, Atlantic sturgeon, piping plovers, and red knot may be present in the project area during and after construction operations and may be adversely affected if present. However, no take of any of these species has been documented during past construction cycles. NASA will comply with all requirements of biological opinions and

concurrences associated with this project provided under the ESA from both USFWS and NMFS to minimize effects. USFWS and NMFS have determined that the proposed action will not jeopardize these species' continued existence.

If a hopper dredge is used for dredging operations, potential impacts to sea turtles could occur. To minimize the risk to sea turtles, standard sea turtle protection conditions will be implemented such as the use of a state-of-the-art rigid deflector draghead, screening and/or observers, and/or novel monitoring techniques. The full scope of monitoring will depend on the dredge plant and screening being used. The full scope of mitigation measures is detailed in NMFS' biological opinion. Monitoring for nesting sea turtles will also occur during beach construction operations. Construction operations will be modified and protective measures implemented if sea turtle nests or crawls are observed.

The potential exists for plover and red knot nesting activity to occur within the proposed project site, and accordingly, NASA would employ a biological monitor to survey the project site on a daily basis should work occur between the months of April and September.

Humpback whales, Fin whales, and North Atlantic right whales occur only rarely in the project area, and therefore, the likelihood of adverse impacts are very low and the chances of the proposed action affecting them are discountable. Seabeach amaranth is not expected to be in the project area.

*10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

NASA and the USACE must comply with all applicable Federal, State, and local laws and requirements. The dredging contractor is required to provide an environmental protection plan that verifies this compliance. NASA has undertaken the necessary consultations with NMFS, USFWS, and other state agencies. The Virginia Department of Environmental Quality (VDEQ) concurred with the consistency determination prepared by NASA (EA Appendix A). NASA also consulted with VDEQ regarding the applicability of its previous water protection permit waiver to the Proposed Action. VDEQ confirmed that the previous waiver would apply to the project. A Virginia Marine Resources Commission Permit and modification was obtained by NASA. The proposed action is in compliance with the Marine Mammal Protection Act. Marine mammals are not likely to be adversely affected by the project and incorporation of safeguards to protect threatened and endangered species during project construction would also protect marine mammals.

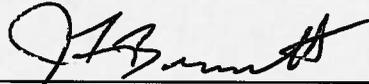
### **Consultations and Public Involvement**

NASA, serving as the lead Federal agency, and BOEM, in a consulting role, has coordinated with the USACE, USFWS, NMFS, VDEQ, VMRC and the Virginia DHR in support of this leasing decision. Pertinent correspondence with Federal and state agencies are provided in Appendix A of the EA. After signature of this Finding of No Significant Impact (FONSI), a Notice of Availability of the FONSI and EA will be prepared and published by BOEM in the Federal Register or by other appropriate means. The EA and FONSI will be posted to BOEM web site [<http://www.boem.gov/Non-Energy-Minerals/Marine-Minerals-Program.aspx>].

**Conclusion**

BOEM has considered the consequences of issuing a negotiated agreement to authorize use of OCS sand from Unnamed Shoal A in the Wallops Flight Facility SRIPP. BOEM independently reviewed the attached EA (Attachment 2) and finds that it complies with the relevant provisions of the CEQ regulations implementing NEPA, DOI regulations implementing NEPA, and other Marine Mineral Program requirements. Based on the NEPA and consultation process, appropriate terms and conditions enforceable by BOEM will be incorporated into the negotiated agreement to avoid, minimize, and/or mitigate any foreseeable adverse impacts.

Based on the evaluation of potential impacts and mitigating measures discussed in the EA, BOEM finds that entering into a negotiated agreement, with the implementation of the mitigating measures, does not constitute a major Federal action significantly affecting the quality of the human environment, in the sense of NEPA Section 102(2)(C), and will not require preparation of an EIS.



---

James F. Bennett  
Chief, Division of Environmental Assessment

July 5, 2013

---

Date

## **Attachment 1**

### **Mitigation, Monitoring, and Reporting Requirements**

The following mitigation measures, monitoring requirements, and reporting requirements are proposed by BOEM to avoid, minimize, reduce, or eliminate environmental impacts associated with the Proposed Action (herein referred to as the "Project"). Mitigation measures, monitoring requirements, and reporting requirements in the form of terms and conditions are added to the negotiated agreement and are considered enforceable as part of the agreement.

### **Plans and Performance Requirements**

NASA and the USACE will provide the BOEM with a copy of the Project's "Construction Solicitation and Specifications Plan" prior to construction (herein referred to as the "Plan"). The BOEM will review the Plan within two (2) weeks of receiving it. No activity or operation authorized by this MOA at Unnamed Shoal A shall be carried out until the BOEM has had an opportunity to review the Plan, thus ensuring that each activity or operation is conducted in a manner that is in compliance with the provisions and requirements of the MOA. NASA and the USACE will ensure that all operations at Unnamed Shoal A are conducted in accordance with the final approved Plan and all terms and conditions in this MOA, as well as all applicable regulations, orders, guidelines, and directives specified or referenced herein are met.

The preferred method of obtaining and conveying sediment from the Unnamed Shoal A involves the use of a hopper dredge. NASA and the USACE will allow the BOEM to review and comment on modifications to the Plan, including the use of a cutterhead dredge and/or submerged or floated pipelines to convey sediment that may affect the project area, before implementation of the modification. Said comments shall be delivered in a timely fashion in order to not delay the USACE's construction contract or schedule.

NASA and the USACE, at the request of the BOEM, shall allow access at the site of any operation subject to safety regulations, to any authorized Federal inspector and shall provide the BOEM with any documents and records that are pertinent to occupational or public health, safety, or environmental protection as may be requested.

### **Environmental Responsibilities and Environmental Compliance**

NASA is the lead agency on behalf of the Federal government to ensure the Project complies with applicable environmental laws, including but not limited to the ESA, MSA, MMPA, MBTA, NHPA, and CZMA. NASA or the USACE, as designated, is responsible for compliance with the specific conditions of state permits, such as those administered by the Virginia Marine Resources Commission (VMRC) and Virginia Department of Environmental Quality (VDEQ).

NASA is serving as the lead Federal agency for ESA Section 7 consultation concerning protected species under the purview of the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). NASA and USACE will instruct its contractor(s) to implement the mitigation terms, conditions, and measures required by the USFWS, NMFS, VMRC, VDEQ and the BOEM pursuant to applicable Federal and state laws and regulations prior to commencement of activities authorized under this MOA, including extraction, transportation, and placement of sand from Unnamed Shoal A. The required mitigation terms, conditions, and measures are

reflected in the Biological Opinions, Conservation Recommendations, and Consistency Determination ( see Attachment 2). Copies of all relevant non-privileged correspondence, monitoring data, and reports related to the activities covered by this MOA will be provided to the BOEM at [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov) electronically within 14 days of issuance (including observer and dredging reports).

### **Pre-Construction Notification of Activity in or near the Borrow Area**

NASA and the USACE will invite BOEM to attend a pre-construction meeting that describes the NASA's and/or its contractors' or agents' plan and schedule to construct the Project.

NASA and the USACE will notify BOEM electronically at least 72 hours prior to the commencement, and within 24 hours after termination, of operations at Unnamed Shoal A. BOEM will electronically notify NASA and the USACE in a timely manner of any OCS activity within the jurisdiction of the DOI that may adversely affect NASA's ability to use OCS sand for the Project.

### **Dredge Positioning**

During all phases of the Project, NASA and USACE will ensure that the dredge and any bottom-disturbing equipment is outfitted with an onboard global positioning system (GPS) capable of maintaining and recording location within an accuracy range of no more than plus or minus 3 meters. The GPS must be installed as close to the dredge as is practicable or must use appropriate instrumentation to accurately represent the position of the dredge. During dredging operations, NASA and USACE will immediately notify the BOEM electronically at [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov) if dredging occurs outside of the approved borrow area. Such notification will be made as soon as possible after the time USACE becomes aware of dredging outside of the approved borrow area. If the internet service is not working, notify the Chief, Leasing Division at (703) 787-1215.

Anchoring, spudding, or other bottom-disturbing activity is to be avoided outside the authorized borrow area on the OCS, except for immediate concerns of safety, navigation risks, or emergency situations.

NASA and USACE will provide the BOEM all appropriate Dredging Quality Management (DQM) data acquired during the Project using procedures jointly developed by the USACE's National DQM Data Program Support Center and BOEM. NASA and USACE will submit the DQM data, including draghead depth, electronically biweekly. A summary DQM dataset will be submitted within 45 days of completion of the Project. If available, the USACE will also submit Automatic Identification System (AIS) data for vessels qualifying under the International Maritime Organization's (IMO) International Convention for the Safety of Life at Sea.

## **Dredge Operation**

Dredging will occur preferentially in naturally accreting areas (subarea A-1 in Unnamed Shoal A) and dredging will be avoided in erosional areas of the shoal to the extent possible. Dredging will be performed so that the hopper dredge excavates material using relatively shallow, uniform passes with a maximum overall cut depth of 2-3 meters. USACE's contract will include the use of the contour method to maintain the relative profile and shape of the sand ridge. Longitudinal passes along the entire length of the sand ridge are prohibited to minimize effects on natural shoal maintenance. NASA and USACE will notify the BOEM if dredging must occur in subarea A-2 in Unnamed Shoal A in order to obtain the necessary volume.

## **Submittal of Production and Volume Information**

NASA and USACE, in cooperation with the dredge operator, must submit to BOEM a summary of the dredge track lines, outlining any deviations from the original Plan, on a biweekly basis. A color-coded plot of the cutterhead or drag arms will be submitted, showing any horizontal or vertical dredge violations. The dredge track lines must show dredge status: hotelling, dredging, transiting, or unloading. This map will be provided in PDF format.

NASA and USACE will provide at least a biweekly report electronically of the construction progress, including estimated volumetric production rates to the BOEM. The biweekly deliverables will be provided electronically to [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov). The project completion report, as described below, will also include production and volume information, including Daily Operational Reports.

## **Local Notice to Mariners**

NASA and USACE will require its contractor(s) for the Project to place a notice in the U.S. Coast Guard Local Notice to Mariners regarding the timeframe and location of dredging and construction operations in advance of commencement of dredging.

## **Marine Pollution Control and Contingency Plan**

NASA and USACE will require its contractor(s) and subcontractor(s) to prepare for and take all necessary precautions to prevent discharges of oil and releases of waste or hazardous materials that may impair water quality. In the event of such an occurrence, notification and response will be in accordance with applicable requirements of 40 C.F.R. 300. All dredging and support operations must be compliant with U.S. Coast Guard regulations and the U.S. Environmental Protection Agency's Vessel General Permit, as applicable. NASA will notify the BOEM of any noncompliant discharges and remedial actions and provide copies of reports of the incident and resultant actions electronically at [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov).

## **Encounter of Ordnance**

If any ordnance is encountered while conducting dredging activities at Unnamed Shoal A, NASA and the USACE will report the discovery within 24 hours to: Chief, BOEM Leasing Division, at (703) 787-1215 and [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov).

## **Bathymetric Surveys**

NASA and USACE will provide the BOEM with pre- and post-dredging bathymetric surveys of Unnamed Shoal A. The pre-dredging survey will be conducted within 30 days prior to dredging. The post-dredging survey will be conducted within 30 days after the completion of dredging. NASA and USACE will provide any future bathymetric surveys of Unnamed Shoal A completed by the USACE or NASA (over the next 1 to 3 years) to BOEM. Hydrographic surveys will be performed in accordance with the USACE Hydrographic Surveying Manual EM 1110-2-1003, unless specified otherwise, providing one hundred percent seamless coverage using interferometric swath or multibeam bathymetry data. All bathymetric data will be roll, pitch, heave, and tide corrected using accepted practices. Survey lines of the specific dredge area, within Unnamed Shoal A, will be established at no greater than 50-m intervals perpendicular to a baseline. Three equidistant cross-tie lines will be established parallel to the same baseline. All survey lines will extend at least 50 m beyond the edge of the dredge areas. All data will be collected in such a manner that post-dredging bathymetry surveys are compatible with the pre-dredging bathymetric survey data to enable the latter to be subtracted from the former to calculate the volume of sand removed, the shape of the excavation, and nature of post-dredging bathymetric change.

Copies of pre-dredging and post-dredging hydrographic data will be submitted to the BOEM electronically via dredgeinfo@boem.gov within thirty (30) days after each survey is completed. The delivery format for data submission is an ASCII file containing corrected x, y, z data. The horizontal data will be provided in the North American Datum of 1983 (NAD '83) Virginia State Plane, U.S. survey feet unless otherwise specified. Vertical data will be provided in the North American Vertical Datum of 1988 (NAVD '88), U.S. survey feet unless otherwise specified. A full 24-by-36-inch plan view plot of the pre- and post-construction data will be provided showing the individual survey points and/or vessel track lines, as well as contour lines at appropriate elevation intervals. These plots will be provided in PDF format. Survey metadata will also be provided.

## **Archaeological Resources**

### *Onshore Prehistoric or Historic Resources*

If NASA, the USACE, or its contractor discovers any previously unknown historic or archeological resources while accomplishing the Project on Wallops Island, NASA and USACE will notify the BOEM of any finding. As Lead Agency, NASA will initiate the Federal and state coordination required to determine if the resources warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

### *Offshore Prehistoric or Historic Resources*

In the event that the dredge operators discover any archaeological resources prior to dredging operations in the SABA or in the vicinity of pump-out operations, NASA will report the discovery electronically to BOEM in a timely manner. The USACE and NASA will coordinate with BOEM on the measures needed to evaluate, avoid, protect, and, if needed, mitigate adverse impacts from an unanticipated discovery. If investigations determine that the resource is

significant, the parties will together determine how best to protect the resource. If the parties and/or dredge operators discover any archaeological resources while conducting dredging operations, NASA will require that dredge and/or pump-out operations be halted immediately within 305 m (1,000 ft) of the area of discovery. NASA will then immediately report the discovery electronically to the Chief, Division of Environmental Assessment. The USACE and NASA will coordinate with BOEM on the measures needed to evaluate, avoid, protect, and, if needed, mitigate adverse impacts from an unanticipated discovery. If investigations determine that the resource is significant, the parties will together determine how best to protect the resource.

## **12. Responsibilities**

BOEM does not warrant that the OCS sand resources used in this project are suitable for the purpose for which they are intended by NASA and the USACE. BOEM's responsibility under this Project is limited to the authorization of access to OCS sand resources from Unnamed Shoal A and therefore BOEM disclaims any and all responsibility for the physical and financial activities undertaken by other Parties in pursuit of the Project.

## **13. Project Completion Report**

A project completion report will be submitted by NASA and USACE to the BOEM within 120 days following completion of the activities authorized under the MOA. This report and supporting materials should be sent in writing and electronically to the Chief, BOEMRE Leasing Division, 381 Elden Street, MS 4010, Herndon, Virginia 20170 and [dredgeinfo@boem.gov](mailto:dredgeinfo@boem.gov).

The report will contain, at a minimum, the following information:

- the names and titles of the project managers overseeing the effort (for the USACE, the engineering firm (if applicable), and the contractor), including contact information (phone numbers, mailing addresses, and email addresses);
- the location and description of the project, including the final total volume of material extracted from the borrow area and the volume of material actually placed on the beach or shoreline (including a description of the volume calculation method used to determine these volumes);
- DQM data, in ASCII files, containing the x, y, z and time stamp of the cutterhead or drag arm locations;
- a narrative describing the final, as-built features, boundaries, and acreage, including the restored beach width and length;
- a narrative discussing the construction sequences and activities, and, if applicable, any problems encountered and solutions;
- a list and description of any construction change orders issued, if applicable;
- a list and description of any safety-related issues or accidents reported during the life of the project;
- a narrative and any appropriate tables describing any environmental surveys or efforts associated with the project and costs associated with these surveys or efforts;

- a table, an example of which is illustrated below, showing the various key project cost elements;

	Cost Incurred as of Construction Completion (\$)
Construction	
Engineering and Design	
Pre- and Post-Dredging Bathymetric Surveys	
Compilation of Project Completion Report	
Total	

- a table showing the various phases of the project construction, the types of construction equipment used, the nature of their use;
- a table listing significant construction dates beginning with bid opening and ending with final acceptance of the project by the USACE;
- digital appendices containing the as-built surveys, beach-fill cross-sections, and survey data; and
- any additional pertinent comments.
- a table, an example of which is illustrated below, showing the various items of work construction, final quantities, and monetary amounts;

Item No.	Item	Estimated Quantity	Unit	Unit Price	Estimated Amount	Final Quantity	Bid Unit Price	Final Amount	% Over/ Under
1	Mobilization and Demobilization								
2	Beach Fill								
3	Any beach or offshore hard structure placed or removed								

- a listing of construction and construction oversight information, including the prime and subcontractors, contract costs, etc.;
- a list of all major equipment used to construct the project;
- a narrative discussing the construction sequences and activities, and, if applicable, any problems encountered and solutions;
- a list and description of any construction change orders issued, if applicable;
- a list and description of any safety-related issues or accidents reported during the life of the project;
- a narrative and any appropriate tables describing any environmental surveys or efforts associated with the project and costs associated with these surveys or efforts;

- a table listing significant construction dates beginning with bid opening and ending with final acceptance of the project by NASA and/or the USACE; digital appendices containing the as-built drawings, beach-fill cross-sections, and survey data; and any additional pertinent comments.

**Attachment 2**

**Final Environmental Assessment with Appendices**