

## **Office of Emerging Technology Program Briefing Paper**

**Project Start Date:** 9/23/2015

**Subject:** Decommissioning Methodology and Cost Evaluation for Alaska OCS Region Offshore Oil and Gas Gravel Island Facilities

**System Evaluation:** E15PD00165

**Project Completion:** 9/22/2016

**Contractor:** Bratslavsky Consulting Engineers, Inc. (Prime); Solsten-XP (Sub)

### **Purpose:**

Provide the Alaska OCS Region with research and cost estimating regarding decommissioning of a typical arctic gravel island-based, oil and gas exploration/production facility. The work considered standard industry practice, available technology, current regulations (e.g. 30 CFR 250 Subpart Q) and market conditions.

### **Scope of Work:**

Evaluate and report on industry-standard techniques and methodologies for decommissioning a typical arctic gravel island-based, oil and gas exploration/production facility, including determining the associated costs of decommissioning. This study is for a typical or hypothetical installation. However, the cost information is to be presented with sufficient line-item detail and justification/backup to be used for any future project-specific cost estimates BSEE may undertake.

### **Project Findings and Recommendations:**

The main deliverables for this contracted study included a review and gap analysis, final report, and an estimating tool for the decommissioning of man-made gravel islands used in the exploration and production of hydrocarbons in the US Arctic OCS.

The gap analysis report compared 30CFR250, Subpart Q-Decommissioning Activities, to State of Alaska, and international regulations and standards. The report provided numerous recommendations on how BSEE could improve the flow, clarity, and presentation of information to the reader/operator. Additionally, the report identified outdated references in the decommissioning section of 30CFR250 that should be updated to reflect the new nomenclature. The report also provided recommendations for information that should be included in future updates to 30CFR250, Subpart Q, including a clear definition of the term “paying quantity,” and procedures to specifically address the decommissioning of man-made gravel islands.

The recommendations from this report are currently being reviewed and considered for inclusion in the on-going 30CFR250 gap analysis activity being conducted by the BSEE Alaska Region.

The final report serves two functions. The first being a summary of the work completed under this contract. The second function is as a supporting document for the decommissioning

estimating tool. The report focuses on gravel-island decommissioning efforts in the US Beaufort Sea. Due to water depth and proximity to land-based support facilities, BSEE anticipates that future gravel-island construction will be focused within the Beaufort Sea program area. The report provides typical procedures for Arctic facilities decommissioning, well plug and abandonment, and reasonable worst-case scenario assumptions for use in the cost model. This report represents BSEE's most thorough review of gravel-island decommissioning procedures to date.

The gravel-island decommissioning estimating tool provides a quantitative estimate of the cost to decommission a gravel-founded off-shore island built in the US Beaufort Sea. The tool addresses the cost associated with returning a foreseeable off-shore island back to conditions similar to a natural island. The tool provides an overall estimate for the decommissioning of a gravel-island as well as providing an estimates for each sub-area of the decommissioning effort including: initial engineering and project design; well and pipeline abandonment; facility removal; removing island armoring and obstructions; labor, equipment construction and material costs; and insurance.

While no tool can account for every eventuality, the decommissioning estimating tool, along with the provided support documentation, provides the BSEE Alaska Region with a defensible method for estimating the ultimate decommissioning cost for a gravel-island. The tool is designed to provide BSEE with a level of functionality that addresses every foreseeable factor in the decommissioning process while providing the flexibility to adjust the calculations as changes in technology, regulatory requirements, and industry trends occur.