



Slurry Pipeline Density & Velocity Accuracy Evaluation for MVN

ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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Response Summary:

The New Orleans District (MVN) was developing contract specifications for a new type of dredge to deal with the unique dredging requirement in the Atchafalaya River lower bar channel. Successful implementation of this innovative dredging methodology depended on a comprehensive set of contract specifications that adequately described the equipment and performance requirements, and quality assurance and control (QA/QC) measures to meet MVN dredging mission objectives. ERDC support was requested to work with MVN to develop these specifications. In particular, this support was in the form of more information about state-of-practice slurry density and flow measurement technology used on pipeline dredges; specifically the accuracy, reliability, calibration requirements, and QA/QC practices related to the latest models, and recommendations on specific units, QA/QC measures, performance requirements that fit MVN's contract specifications.

Period of Performance:

3 March – 15 May 2018

Benefits of the Response to the USACE Dredging/Navigation Program:

In the past MVN has conducted numerous activities in order to optimize management of fluid mud shoaling on the Atchafalaya Bar Channel including Value Engineering Studies, sedimentation field data collections, numerical modeling, demonstrating different types of dredges, and channel structure modifications to achieve a safe, efficient, reliable, and effective lower bar channel. But these attempts have provided limited success. At present MVN is encouraging the dredging industry to build a new type of dredge that would combine agitation dredging and sediment conditioning as a potential solution to more effectively manage fluid mud in the lower bar channel to increase the duration of its navigable depth. Properly specified slurry pipeline density and velocity technical requirements are critical to the successful implementation of a dredging contract to achieve that objective.



Deliverable:

ERDC conducted a technical literature search to compile performance metrics on both nuclear and non-nuclear density gages and slurry flow meters and supported MVN in the development of a comprehensive set of contract specifications to adequately describe the equipment and performance requirements, and quality assurance and control (QA/QC) measures to meet MVN's dredging mission in the lower Atchafalaya River Bar channel.



Providing environmental and engineering technical support to the U.S. Army Corps of Engineers
Operations and Maintenance navigation and dredging missions

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