LESSONS LEARNED

These "Lessons Learned" are alerts and bulletins usually received from sources outside the Company that are not normally documented alerts in the GEMS System. These may or may not relate to your operation, and are provided for information purposes only, but should be posted for everyone's use. In those cases where it may be deemed that a rig in our fleet may encounter similar circumstances, a list of action items for everyone to address will be included for addition to CAPA.

LL# 344
Bureau of Safety and Environmental Enforcement (BSEE)
16 March 2017
Mud/Gas Separator Cleaning Results in Death

BSEE has issued Safety Bulletin No.003 as a result of a 10 March 2016 fatal incident during cleaning of a Mud/Gas separator. BSEE also provided the Panel Report on the Incident as well as the Acting Director's memo on review of the Panel Report. The fatal accident occurred when an Assistant Driller (AD) placed his head and an arm into a platform drilling rig's vertical Mud/Gas Separator (MGS) through its inspection hatch, while performing the assigned, but non-routine task of removing built up and hardened material from inside the MGS.

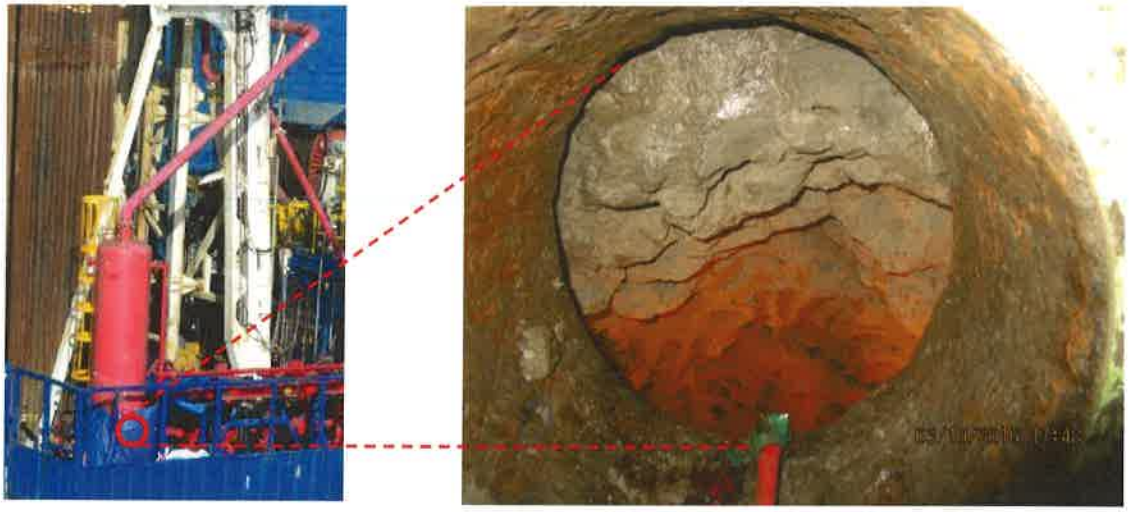
SAFETY BULLETIN

Safety Bulletin No. 003
March 8, 2017

Contact: Andrew Black
Phone: 202-513-0633
Email: Andrew.Black@bsee.gov

Mud/Gas Separator Cleaning Results in Death

A fatal incident occurred when an Assistant Driller (AD) placed his head and an arm into a platform drilling rig's vertical Mud/Gas Separator (MGS) through its inspection hatch, while performing the assigned, but non-routine task of removing built up and hardened material from inside the MGS.



A BSEE Panel investigation identified a number of established Safe Work Practices (SWPs) that, if followed, should have prevented the task from proceeding in the manner in which it occurred. The contaminating material, believed to be cement, had already begun to cure and harden inside the MGS when it was discovered. The decision was made to attempt to remove the material, and supervisors authorized the task without understanding of the extent of the buildup.

As the task progressed, the tools and work environment changed, but the Job Safety Analysis (JSA) was not revised or updated to reflect the impacts and potential hazards associated with those changes. On this second day of the task, during the morning safety meeting, multiple supervisors advised personnel not to place any parts of their bodies into the MGS because the cement could fall. The tools provided to the work crew were not suitable for completion of the task without placing parts of their bodies into the MGS. The supervisors and their work crew deviated from the verbal work instructions by placing their head and/or arm(s) into the MGS throughout the morning and into the afternoon. As the work progressed, some crew members assumed that the amount of material built up inside the MGS was enough to reach the height of its (MGS') internal baffles. This led to the belief that the baffles would support and prevent

the overhead material from falling. Despite some of the workers having expressed individual concerns about the task conditions, stop work authority was not invoked. Personnel were not provided a stopping point short of total task completion. The AD was working with the provided equipment, and with a portion of his upper body inside the MGS, when material broke free and/or dislodged and entrapped him causing the traumatic injury that ultimately resulted in his death.

Although the verbal directive issued not to physically enter into the MGS on this second day of the task should have superseded any interpretation of the Confined Space Entry (CSE) work practices, some of the personnel involved with the task expressed uncertainties regarding the topic of CSE, when interviewed post-incident. A comparative review of both the operator and contractor's CSE work practices highlighted two factors that may have contributed to the apparent confusion. (1) There were differences between the SWP definitions for what "confined space" means; and (2) No definition was included within the SWPs for what would constitute "entry" into a confined space.

When requesting emergency assistance, personnel involved with coordinating the emergency response realized that a "mandatory" form had to be completed and submitted, prior to the emergency service provider activating its resources. At the time of the medical evacuation resource-activation, about one hour had elapsed from the time of the incident.

BSEE recommends that companies operating on the U.S. Outer Continental Shelf:

- Ensure that authorizing personnel take an active role in task planning and verify that all required task authorization documents are complete, accurate and meaningful.
- Ensure that hazard analyses are updated or revised to reflect all impactful changes in task conditions, and/or the working environment.
- Ensure that equipment approved and made available for each assigned task is adequate to perform the task-work safely and in accordance with safe work practices and work instructions.
- Clarify through initial and/or recurrent training how "confined space" and "entry" are defined.
- Evaluate emergency response plans and supporting response organization agreements to ensure everything is adequately in place to support your emergency response plans and strategies.