



## **FINDINGS OF CONCERN**

### **Marine Safety Unit Lake Charles**

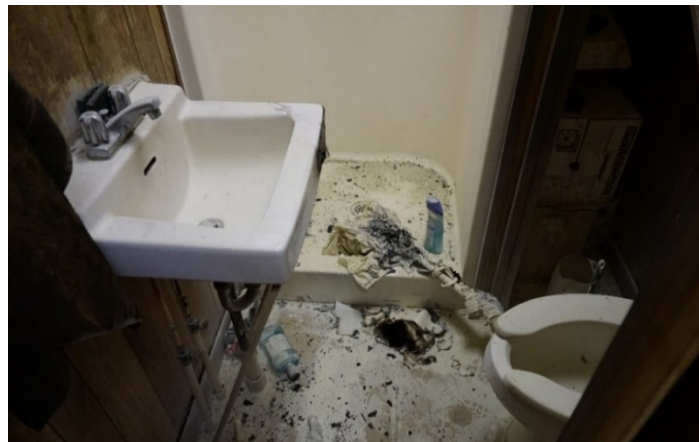
November 17, 2020  
Lake Charles, LA

Findings of Concern 009 - 20

## **DEGASSING ON DREDGE VESSELS INCREASES RISK OF EXPLOSION**

Purpose. The U.S. Coast Guard issues findings of concern to disseminate information related to unsafe conditions that were identified as causal factors in a casualty and could contribute to future incidents. Findings of concern are intended to educate the public, state, or local agencies about the conditions discovered so they may address the findings with an appropriate voluntary action or highlight existing applicable company policies or state/local regulations.

The Incident. On April 29, 2020, an explosion occurred on board a non-self-propelled uninspected dredge vessel on the Calcasieu River in Lake Charles, LA. As a result, a crewmember on board the vessel sustained 2<sup>nd</sup> degree and 3<sup>rd</sup> degree burns to approximately 30% of his body. Upon investigating the incident, the U.S. Coast Guard determined the fuel source for the explosion derived from a degassing pipeline connected to the dredge cutter unit near the bow of the vessel. Degassing lines on dredge vessels can release natural flammable gases with high concentrations of methane.



One of the two crew restrooms that were impacted by the explosion which originated in the adjacent restroom. Melted plastics and burnt paper products were found in these spaces. The shared greywater piping system allowed flames to travel into other rooms once the gases were ignited.

Contributing Factors and Analysis. At the time of the incident, the degassing line was located next to a greywater vent, which allowed natural gases to travel up through the greywater piping system and into the accommodation spaces of the dredge vessel. A steel deck surrounding the degassing line was replaced approximately 3 months prior to the incident. Evidence suggested that the new steel deck trapped rising gases underneath the deck, forcing the gases to travel up the greywater vent. Crewmembers noted that the previous deck surrounding the degassing line had ventilation holes and/or was wasted through, allowing gases to rise and dissipate into the atmosphere freely. In addition, investigators found missing/uninstalled “P-Traps” on the greywater piping system, which permitted rising gases to enter accommodation spaces through the vessel’s sink and shower drains. Crewmembers on board the vessel reported using rubber mats to prevent foul smells from emitting from the drains on the vessel and into their rooms. Furthermore, multiple cigarettes were found discharged in various locations aboard the vessel where “No Smoking” signs were posted, indicating a lack of commitment to existing company safety policies by the crew.

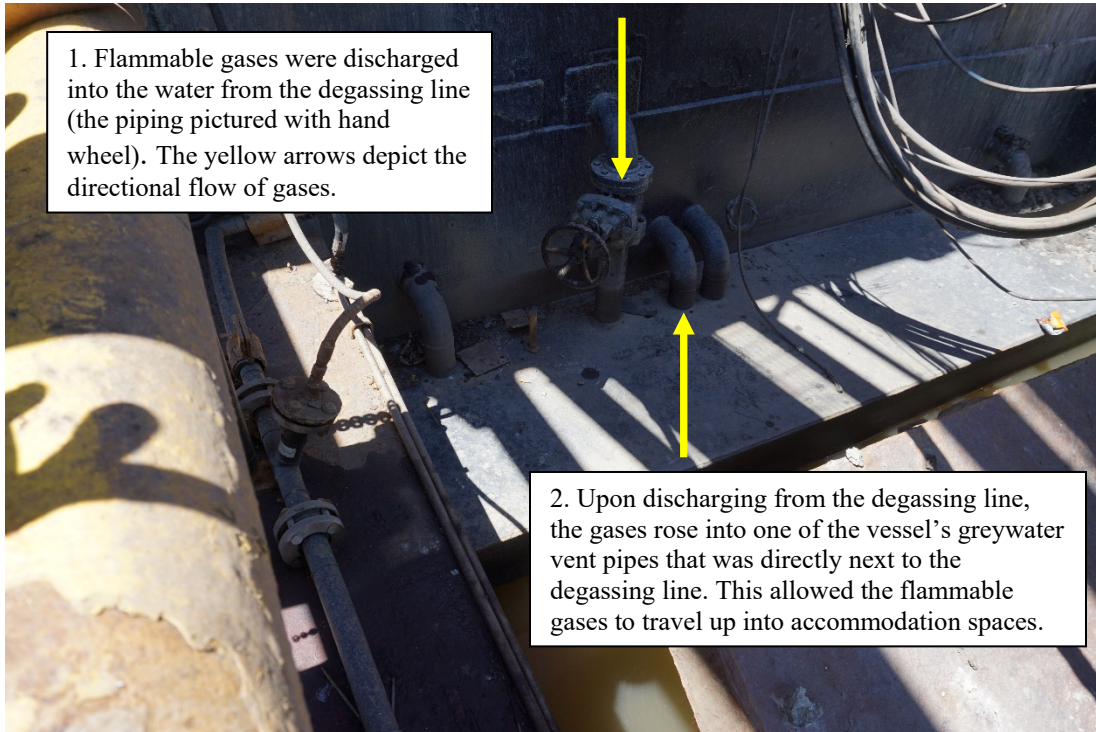


**UNITED STATES COAST GUARD**  
U.S. Department of Homeland Security

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Findings of Concern. The U.S. Coast Guard **strongly encourages** vessel owners and operators to:

- Confirm that any degassing units that potentially emit hazardous or flammable gases are positioned away from sources of ignition or in areas that could allow the gases to accumulate within or near the vessel.
- Promote a safety culture and adherence to no-smoking and/or no open flame policies on board vessels with degassing lines.
- Utilize professional engineers/safety consultants or equivalent processes when altering and/or repairing vessels with equipment that may emit hazardous gases.
- Assess piping systems on vessels for the presence of “P-Traps” where applicable.

Closing. These findings of concern are provided for informational purpose only and do not relieve any domestic or international safety, operational, or material requirements. For any questions or comments, please contact MSU Lake Charles Investigations Division by phone at (337) 491-7819 or by email at [LakeCharlesIO@uscg.mil](mailto:LakeCharlesIO@uscg.mil).