

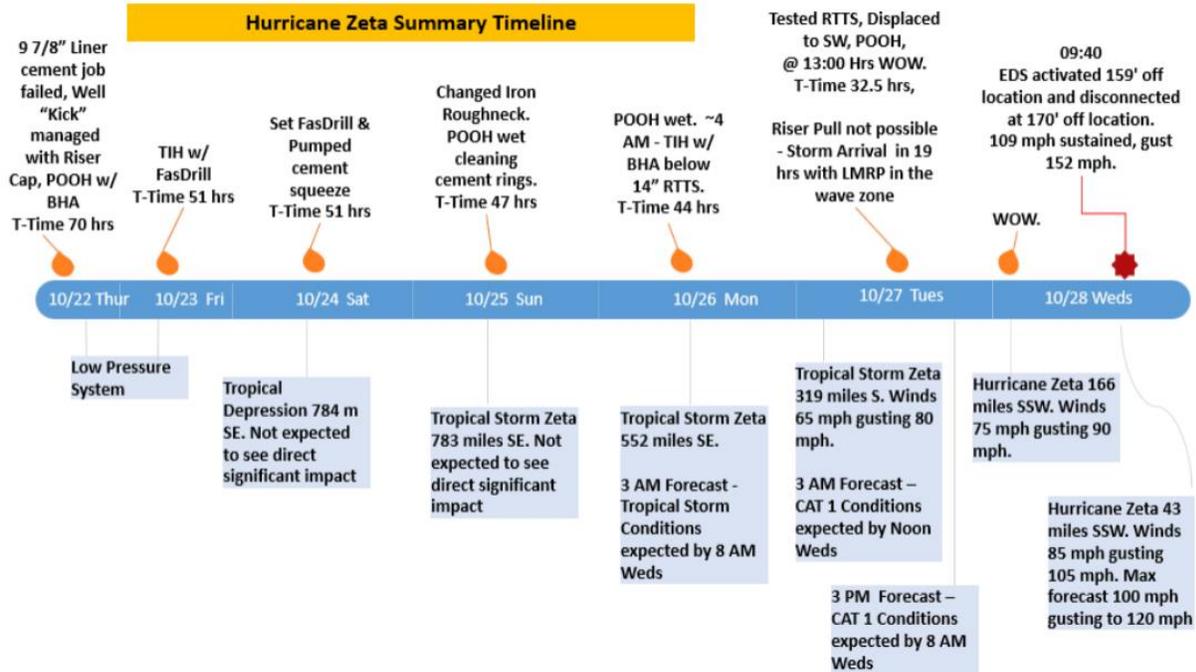
----- Forwarded message -----

From: **Mathews, Jason P** <Jason.Mathews@bsee.gov>

Date: Mon, Mar 22, 2021 at 7:16 PM

Subject: Re: [EXTERNAL] Thanks for the call

To: Richard Steiner <richard.g.steiner@gmail.com>



The well was the GC 895 #1 - All other documents are highly sensitive. I will notify you once our publicly available investigation is posted to the BSEE website. It is a Houma District investigation into the incident. Thanks,



Jason P. Mathews
Petroleum Engineer
Field Operations - OSM
Office: (504) 731-1496
Cell: (504) 615-4281
jason.mathews@bsee.gov

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From: **Mathews, Jason P** <Jason.Mathews@bsee.gov>

Date: Wed, Mar 24, 2021 at 4:49 AM

Subject: Re: [EXTERNAL] Thanks for the call

To: Richard Steiner <richard.g.steiner@gmail.com>

On October 28, 2020, an incident occurred on the Transocean Deepwater Asgard, which was working under contract for Beacon Offshore Energy LLC (BOE). Drilling operations were being conducted at Green Canyon Block – 895, OCS-G-35879 well Highgarden # 1, in 5,594 feet of water. The Asgard was forced off location by harsh weather conditions due to an approaching hurricane. The well was secure and the riser was displaced with seawater, when the Emergency Disconnect System (EDS) was executed successfully but the riser and Lower Marine Riser Package (LMRP) sustained significant damage in the process. The drillship was being pushed in a northwest direction with its thrusters at 100 percent power.

On Saturday, October 24, 2021, tropical disturbance # 59 slowly approached the Gulf of Mexico from the Caribbean while the Deepwater Asgard drill crew was in the process of tripping drill pipe in the well to set a FasDrill cement retainer. The cement retainer was set at 26,200 feet to isolate high pressure zones in the well bore. Once the retainer was cemented in place, the drill crew began to pull out of the hole (POOH) with the drill string. During the operation of POOH, the drill crew experienced mechanical problems with the Iron Roughneck (IR), which breaks the connections on the drill string. The IR remained out of service for most of Sunday, October 25th, 2021 until repairs could be made. Meanwhile, Tropical Disturbance # 59 developed into a weak Tropical Storm named Zeta and continued to move slowly toward the Gulf of Mexico. Repairs were completed on the IR early Monday morning on October 26th, allowing the drill crew to finish POOH with the drill string. Once the procedure was completed, the drill crew was instructed to make up a drill bit on the bottom hole assembly (BHA) below the Retrievable Test Treat Squeeze packer (RTTS) and TIH. The RTTS was set at 6,585 feet and a successful positive and negative test was accomplished. On October 27th, Tropical Storm Zeta strengthened to a category 1 Hurricane and entered the Gulf of Mexico with the Asgard in its projected path. The drill crew displaced the riser with seawater and pulled the RTTS running tool out of the hole to prepare to either disconnect from the wellhead or stay connected as the hurricane approached. A conference call between BOE and Transocean was held, and Transocean elected to stay connected to the well because previous sister drillships in similar conditions rode out storms without issues. However, the disconnect protocol was to be activated from the ship's bridge under storm conditions if unable to hold the ships current position. On October 28, 2021, Hurricane Zeta's eyewall hit the Asgard, forcing it into the red watch circle with winds approximately 90 to 100 miles per hour and sea swells at 30 feet. At approximately 09:40 hours, the Emergency Disconnect System (EDS) was activated successfully on the Lower Marine Riser Package (LMRP) and cleared the blow out preventers with no issues. The derrick wind sensor recorded winds at approximately 132 knots as the drillship moved in a northwest direction. The marine riser was damaged when it hit the wave breaker in the moon pool and shortly thereafter the Asgard passed over a ridge of shallower water and

the LMRP struck the seafloor, dragging it thru the mud. After traveling approximately 2.5 nautical miles, the Asgard began to maneuver back to the safe zone. The LMRP struck the seafloor for a second time before reaching its destination. Upon arrival, Transocean and BOE began accessing the damages to the drillship and its equipment.

The Bureau of Safety and Environmental Enforcement (BSEE) conducted an onsite investigation on November 4, 2020, which included interviewing personnel and collecting documentation. The investigation team obtained photos and video footage displaying the damage that was sustained to the marine riser and the LMRP. The documents obtained indicated that the projected storm path was to the east, therefore allowing the Asgard to remain connected to the well. As time progressed, the storm path began to change, and preparations had begun to secure the well. It was also noted in the documents that the Iron Roughneck had broken down multiple times due to mechanical issues, slowing the process of pulling the drill string out of the well bore. The maintenance issues were finally resolved allowing the drill crew to continue securing the well as the storm was heading directly for the Asgard. The RTTS was set at 6,585 feet and was successfully pressure tested with 15.15 pounds per gallon (PPG) synthetic based mud (SBM), followed by a successful negative test. The drill crew proceeded to pull the drill string out of the well bore and commenced displacing the marine riser's 15.15.PPG SBM with 8.6 PPG seawater. With the upper blind shear rams closed and the RTTS set, the drill crew prepared the drill floor for inclement weather which was now Hurricane Zeta. On October 28, 2020, wind speeds approached 132 knots and wave heights increased to 30 feet. The Asgard was unable to remain on location with all six thrusters at 100%. At 09:40 hours the Asgard reached the red watch circle which was 159 feet off location. The EDS function was activated from the control panel at the Driller's chair, taking approximately 24 seconds to function. At 170 feet off well center, the disconnect was complete and the subsea crew placed all Air Pressure Vessel (APV) bottles online which increased the tensioner pressure to support the weight of the marine riser and the LMRP. The Asgard began to be pushed in a northwest direction at a speed of 4.8 knots with thrusters still at 100% output. At approximately 10:06 hours, the marine riser impacted the Asgard's hull and by 10:12 hours, the slip joint was fully closed and had locked itself. The subsea team immediately applied the hydraulic locks to keep it locked in place. At approximately 10:52 hours, the blow out preventer inclinometer marked 15.9 degrees indicating that the LMRP had hit the seafloor, unknown to the drill crew. Finally, at approximately 12:48 hours the Asgard came to a stop, having travelled 1.9 nautical miles from the well location. The Asgard maneuvered back toward the safe zone but in the process the LMRP struck the seafloor again. After evaluating all the damages to the riser and LMRP, it was estimated that the repair and replacement costs would be approximately \$5.7 million dollars.

Since the incident, Transocean has begun to review the requirement for a 5 year Emergency Disconnect Sequences to ensure their equipment is operating at its optimum capacity. Also, Transocean will revise their Extreme Weather Evacuation Plan (EWEP). The EWEP is a plan to review and update the current riser analysis information and layout to ensure it meets all internal and external requirements to better understand its operational limits. Transocean will request bathymetry maps to give the rig teams a clear understanding of what hazards are

indicated returning to the rigs safe zone. BOE has modified their Hurricane Evacuation Plan to include a risk assessment and evaluation for a barrier installation and testing, considering the time available prior to the arrival of tropical storm winds. BOE will recommend to the rig's ultimate work authority that storms projected with sustained winds of a category 1 storm or greater should disconnect from the well, pull a specified length of riser from the water column, then proceed to a secure location. BOE will also modify the rig contract requirements for each well location to state between June 1st and December 1st that the contractor perform a riser, BOP, and tensioner system analysis for a category 1 storm. BOE also plans to compare the projected vs. actual weather conditions of Hurricane Zeta and review with the weather service provider to eliminate any future conflicting information.

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Jason P. Mathews

Petroleum Engineer

Field Operations - OSM

Office: (504) 731-1496

Cell: (504) 615-4281

jason.mathews@bsee.gov