UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED
   DATE: **06-FEB-2017** TIME: **0740** HOURS

2. OPERATOR: **BHP Billiton Petroleum (GOM) Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **Transocean Offshore**
   REPRESENTATIVE:
   TELEPHONE:

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT:

4. LEASE: **G34986**
   AREA: **GC** LATITUDE:
   BLOCK: **521** LONGITUDE:

5. PLATFORM:
   RIG NAME: **T.O. DEEPWATER INVICTUS**

6. ACTIVITY:
- [X] EXPLORATION(POE)
- [ ] DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:
- [ ] HISTORIC INJURY
  - [ ] REQUIRED EVACUATION
  - [ ] LTA (1-3 days)
  - [ ] LTA (>3 days
  - [ ] RW/JT (1-3 days)
  - [ ] RW/JT (>3 days)
  - [ ] Other Injury
- [ ] FATALITY
- [ ] POLLUTION
- [ ] FIRE
- [ ] EXPLOSION
- LWC
  - [ ] HISTORIC BLOWOUT
  - [ ] UNDERGROUND
  - [ ] SURFACE
  - [ ] DEVERTER
  - [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES
- COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K
- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING DEVICE
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [ ] INCIDENT >$25K
- [ ] H2S/15MIN./20PPM
- [ ] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [X] OTHER **Top Drive**

6. OPERATION:
- [ ] PRODUCTION
- [X] DRILLING
- [ ] WORKOVER
- [ ] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [ ] OTHER

8. CAUSE:
- [ ] EQUIPMENT FAILURE
- [X] HUMAN ERROR
- [ ] EXTERNAL DAMAGE
- [ ] SLIP/TRIP/FALL
- [ ] WEATHER RELATED
- [ ] LEAK
- [ ] UPSET H2O TREATING
- [ ] OVERBOARD DRILLING FLUID
- [ ] OTHER _____

9. WATER DEPTH: **4036** FT.

10. DISTANCE FROM SHORE: **110** MI.

11. WIND DIRECTION:
    SPEED: M.P.H.

12. CURRENT DIRECTION:
    SPEED: M.P.H.

13. SEA STATE: FT.

17. INVESTIGATION FINDINGS:

On February 6, 2017, on board the Transocean Deepwater Invictus drillship operating for BHP Billiton Petroleum in Green Canyon block 521, the Modular Derrick Drilling Machine (MDDM) came into contact with the box end of the drill pipe while the drill crew was in the process of pulling out of the hole (POOH). Personnel cleared the rig floor and there were no injuries reported.

On the morning of February 6, 2017, the Driller was pulling out of the hole with 6 5/8 inch drill pipe. A stand of drill pipe was set in the slips and the drill floor crew positioned the iron roughneck to the well center to break the drill pipe connection. The Assistant Driller (AD) activated the pipe handling system to hold the stand of drill pipe once the iron roughneck was positioned. After verbal verification from the AD to the Driller, the elevator was unlatched and the MDDM dolly was retracted. The drill floor crew then closed the iron roughneck around the drill pipe, causing the upper tool joint to flex towards the MDDM. At this time the Driller started lowering the MDDM and the box end of the drill pipe struck the MDDM while it was descending to the rig floor. The drill pipe bowed, shearing the bolts on the Temperature Sonic Sensor and severed a hydraulic fitting on the MDDM. The sensor remained suspended by its cables on the MDDM but the hydraulic fitting fell approximately 110 feet, striking the drill floor.

Bureau of Safety and Environmental Enforcement (BSEE) Inspectors conducted an inspection / investigation on February 6, 2017 and collected documentation for the incident. The investigation determined that there was poor communication between the Driller, AD and the Iron Roughneck Operator according to incident statements given. The AD stated that he had informed the Driller that he could unlatch the drill pipe elevators, but he did not inform him that he could start coming down with the MDDM. Neither the Driller nor the Iron Roughneck Operator statements included any information about communication during the incident. BSEE Houma District has concluded that the timing between the Driller, AD, and the Iron Roughneck Operator was off due to poor communication. The Driller should not have gone down with the MDDM while the drill pipe was being gripped and spun by the iron roughneck. Had communication been better between the personnel operating the equipment this incident could have been avoided. Transocean has revised its communication procedure, requiring the Iron Roughneck Operator to give a verbal and a visual signal to the AD before he activates the pipe handling system. Once the pipe has been backed out, the MDDM can descend past the upper tool joint.

Transocean contracted a third party inspector to perform an inspection on the pipe handling system for misalignment due to the theory that there could be a misalignment of the pipe handling system and the well center. In the investigation, it was determined that the distance between the MDDM and stand of drill pipe was minimal. The third party inspector reviewed the video of the incident and noted in his findings that the Gripper Head was tilted down with no load connected to it. The Gripper Head is assisted by a spring return assembly which indicated that the spring was not operating properly. The tilting bracket was replaced together with a new gripper head and now it operates as designed. Given the tight tolerance of the operating area, the Gripper Head being tilted down could have contributed to this incidents occurrence.

$10,000

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

- Poor communication between the Driller, AD, and the Iron Roughneck Operator.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

- The Gripper Head springs were slightly worn out, allowing it to tilt slightly without a load connected to it.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

-Hydraulic fitting on MDDM
-Sheared bolts on Temperature Sonic Sensor
-Bent drill pipe

NATURE OF DAMAGE:

MDDM struck box end of drill pipe while descending

Recommendations to BSEE to Prevent Recurrence Narrative:

22. **The Houma District Office has no recommendations to make to the Office of Incident Investigations at this time.**

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **NO**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

06-FEB-2017

26. ONSITE TEAM MEMBERS:

Cedric Bernard / Clint Campo / Paul Reeves / Adriano Garcia /

29. ACCIDENT INVESTIGATION PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan Domangue

APPROVED DATE: **28-APR-2017**