

UNITED STATES DEPARTMENT OF THE INTERIOR
 MINERALS MANAGEMENT SERVICE
 GULF OF MEXICO REGION
ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: **21-MAR-2009** TIME: **2000** HOURS

2. OPERATOR:

W & T Offshore, Inc.

REPRESENTATIVE: **Groves, Jeannie**

TELEPHONE: **(713) 624-7293**

CONTRACTOR: **Rowan Drilling**

REPRESENTATIVE: **Duhon, Robert**

TELEPHONE: **(713) 422-4302**

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

4. LEASE:

G12008

AREA: **SS** LATITUDE:

BLOCK: **349** LONGITUDE:

5. PLATFORM:

RIG NAME: **ROWAN GORILLA IV**

6. ACTIVITY:

- 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
- OTHER **Extended Kick Control**

6. OPERATION:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER

8. CAUSE:

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER **Inadvertent Swab of Well**

9. WATER DEPTH: **375** FT.

10. DISTANCE FROM SHORE: **50** MI.

11. WIND DIRECTION: **SSE**
 SPEED: **13** M.P.H.

12. CURRENT DIRECTION: **N**
 SPEED: **1** M.P.H.

13. SEA STATE: **4** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

After drilling the 6-1/2 inch hole section to 16,539 ft MD / 15,434 ft TVD (permitted to 17,636 ft MD / 16,655 ft TVD) a short trip was performed. With the bit at 16,256 ft, a drill pipe connection was made to wash and ream back down to 16,288 ft. While making the connection, the well was observed to have a slight flow. The well was washed down to 16,288 ft when returns were lost totaling 30 barrels. The bit was picked up to 16,258 ft where returns were regained and an additional 30 barrels. The well was then shut-in on the Annular Preventer where the Initial Shut-In Casing Pressure (ISICP) reached 1200 psi and the Initial Shut-In Drillpipe Pressure (ISIDP) was 0 psi. The Drillers Method was the implemented to kill the well where the mud weight was increased from 16.6 ppg to 17.0 ppg.

The highest SICP observed was 1400 psi with a 16.6 ppg mud in the well. The drilling assembly did contain a drill pipe float but was believed to have developed a leak due to some pressure later observed on the drill pipe. The maximum gas units observed was 910 units which gave a mud cut from 16.9 ppg to 15.9 ppg. The 1.0 ppg difference is believed to be from a combination of gas and water influx. The Blow Out Preventer's (BOP's) remained on the Annular Preventer during the entire event with no problems holding pressure.

There were two boats in the field that contain additional mud but were unable to off-load to the rig due to high seas on 27-MAR-2009. The sea state was calm enough to off-load 1822 bbls of 17.0 ppg mud to the rig on 28-MAR-2009.

The well's condition went back and forth between influxes and losing returns until the well was determined to be in a static condition and pulled out of the hole on 4/4/2009. The Driller's Method was implemented multiple times during this period. The well was reentered to test the BOP's, condition the open hole section, and run logs. The open hole section was then isolated with a cement retainer at 15,524 ft and additional 100 ft on top of retainer on 4/8/2008. Permitted operations to complete the well for production followed.

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

The initial cause of the event was that the well was swabbed during the short trip operation. This influx caused the SICP to break down the 7 inch liner shoe set at 15,624 ft MD / 14,529 ft TVD.

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

Having to address the problems of influx and losing returns led to this being a prolonged control event.

20. LIST THE ADDITIONAL INFORMATION:

The Driller's Method is a well killing method involving two complete and separate circulations. The first circulates the kick out of the well; the second circulates heavier mud through the wellbore.

The Annular Preventer is utilized for controlling a well with shut-in pressures under

3500 psi. Should the shut-in pressure exceed 3500 psi the BOP's would be switched over to Pipe RAM's.

The 7 inch liner shoe was tested to an Equivalent Mud Weight of 17.8 ppg with 16.0 ppg and 1365 psi surface pressure applied giving an equivalent pressure holding capacity of 13,453 psi. At the time of the initial shut-in with 16.6 ppg mud and 1200 psi on the casing, this gave a pressure of 13,741 psi at the shoe.

21. PROPERTY DAMAGED:

None.

NATURE OF DAMAGE:

None.

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

Due to the nature of this event, the Houma District has no recommendations to the Regional Office.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

26. ONSITE TEAM MEMBERS:

Ben Coco /

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan A. Domangue

APPROVED

DATE: **21-MAY-2009**