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

ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **12-MAR-2007** TIME: **1103** HOURS

2. OPERATOR: **Shell Offshore Inc.**
   REPRESENTATIVE: **GREG B. Southworth**
   TELEPHONE: **(504) 728-6088**
   CONTRACTOR: **Transocean Offshore**
   REPRESENTATIVE: **John Hamilton**
   TELEPHONE: **(713) 232-8451**

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

4. LEASE: **G20361**
   AREA: **WR** LATITUDE:
   BLOCK: **627** LONGITUDE:

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

6. ACTIVITY:
- [ ] EXPLORATION(POE)
- [X] 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
- [X] 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 **Slip Joint leak**

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

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

9. WATER DEPTH: **7068** FT.

10. DISTANCE FROM SHORE: **179** MI.

11. WIND DIRECTION: **ESE**
    SPEED: **12** M.P.H.

12. CURRENT DIRECTION: **SE**
    SPEED: **2** M.P.H.

13. SEA STATE: **3** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On March 12, 2007 at around 11:00 O'clock, the number four drilling riser tensioner hose ruptured. The force of the compressed air escaping from the ruptured hose caused it to swing around near the riser. As the drilling riser tensioner hose was swinging around, it entangled the control air line to the slip joint packer in its frayed metal inner core (see attached pictures). This resulted in the control air line being pulled loose. The slip joint packer element relaxed when the air control hose broke loose from the slip joint connection and this resulted in the release of 9 barrels of synthetic based mud into the Gulf.

The Subsea Supervisor saw that the slip joint packer element was leaking and went to the diverter control panel and applied pressure to the secondary hydraulic packer on the slip joint. The control air line to the riser slip joint packer was replaced and air pressure reapplied to the packer element.

Also the number four drilling riser tensioner hose was replaced. The normal life span of a drilling riser tensioner hose is 15 years but this hose failed in only 4 years. Records show that this drilling riser tensioner hose was in use thru three major hurricanes which may have accelerated its failure.

After the situation was controlled, the trip tank was gauged for the amount of synthetic based mud (SBM) it took to fill the riser back up. This reading was compared to the prior level in the trip tank and it was determined that a total of 9 barrels of whole SBM and cuttings was spilled in to the water (57.5% oil content or 5.175 bbls of synthetic oil).

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

Rupture of the drilling riser tensioner hose due to exposure to three major hurricanes resulted in the entanglement and failure of the air supply line connection to the slip joint packer element. The lack of air pressure on the slip joint packing element allowed the SBM to leak into the Gulf.

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

The routing or plumbing of air supply hose to the slip joint packer connection point exposed the slip joint air supply line to damage when the number four drilling riser tensioner hose ruptured.

20. LIST THE ADDITIONAL INFORMATION:

Transocean plans to re-route the plumbing of the air line to the slip joint packer element to increase clearance from tensioner hoses. Transocean is researching the best change-out frequency and plans to use a 5 year replacement frequency pending Transocean engineering and management review. Transocean engineering is investigating an automatic system that will energize the hydraulic packer at the loss of pressure to the air packer before the air packer begins to leak.

21. PROPERTY DAMAGED:

Drilling riser tensioner hose and the slip joint air supply hose were both damaged.

NATURE OF DAMAGE:

Both hoses were damaged beyond repair and were replaced.

ESTIMATED AMOUNT (TOTAL): **$56,075**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

Due to the lack of any historical data showing this type of hose failure frequency increasing, 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:

15-MAR-2007

26. ONSITE TEAM MEMBERS:

Jerry Freeman / John McCarroll /

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

Michael J. Saucier

APPROVED

DATE: **18-APR-2007**

POLLUTION ATTACHMENT

1. VOLUME: GAL **5.2** BBL

   YARDS LONG X YARDS WIDE

   APPEARANCE:

2. TYPE OF HYDROCARBON RELEASED:
   - ☐ OIL
   - ☐ DIESEL
   - ☐ CONDENSATE
   - ☐ HYDRAULIC
   - ☐ NATURAL GAS
   - ☒ OTHER **synthetic based mud (SBM)**

3. SOURCE OF HYDROCARBON RELEASED: **Slip joint packer leak**

4. WERE SAMPLES TAKEN? **NO**

5. WAS CLEANUP EQUIPMENT ACTIVATED? **NO**

   IF SO, TYPE:
   - ☐ SKIMMER
   - ☐ CONTAINMENT BOOM
   - ☐ ABSORPTION EQUIPMENT
   - ☐ DISPERSANTS
   - ☐ OTHER _____

6. ESTIMATED RECOVERY: GAL BBL

7. RESPONSE TIME: HOURS

8. IS THE POLLUTION IN THE PROXIMITY OF AN ENVIRONMENTALLY SENSITIVE AREA (CLASS I)? **NO**

9. HAS REGION OIL SPILL TASK FORCE BEEN NOTIFIED? **NO**

10. CONTACTED SHORE: **NO** IF YES, WHERE:

11. WERE ANY LIVE ANIMALS OBSERVED NEAR: **NO**

12. WERE ANY OILED OR DEAD ANIMALS OBSERVED NEAR SPILL: **NO**