

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: 02-JAN-2014 TIME: 0217 HOURS

2. OPERATOR: Marubeni Oil & Gas (USA) Inc.

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

REPRESENTATIVE:

TELEPHONE:

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

4. LEASE: G15546

AREA: GC LATITUDE:

BLOCK: 113 LONGITUDE:

5. PLATFORM:

RIG NAME: NOBLE DRILLER

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 Damage to A4 well jumper
 H2S/15MIN./20PPM
 REQUIRED MUSTER
 SHUTDOWN FROM GAS RELEASE
 OTHER Dropped Object

6. OPERATION:

PRODUCTION
 DRILLING
 WORKOVER
 COMPLETION
 HELICOPTER
 MOTOR VESSEL
 PIPELINE SEGMENT NO.
 OTHER Plugback to Sidetrack

8. CAUSE:

EQUIPMENT FAILURE
 HUMAN ERROR
 EXTERNAL DAMAGE
 SLIP/TRIP/FALL
 WEATHER RELATED
 LEAK
 UPSET H2O TREATING
 OVERBOARD DRILLING FLUID
 OTHER

9. WATER DEPTH: 1968 FT.

10. DISTANCE FROM SHORE: 82 MI.

11. WIND DIRECTION: N
SPEED: 26 M.P.H.

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

13. SEA STATE: 5 FT.

17. INVESTIGATION FINDINGS: -

On January 2, 2014, while in the process of pulling the subsea tree (XT) from Marubeni's A002 well, the tree inadvertently released from the Tree Retrieving Tool (TRT) and fell to the seafloor, damaging the Angus A004 well's jumper.

During the time of the incident, the Noble Driller was contracted to Marubeni Oil and Gas and was scheduled to move to Green Canyon 113 to perform a plugback of the A002 well, followed by a sidetrack operation. As the rig was being moved onto the location, the FMC crew was tasked with performing a surface test of the TRT to ensure its functionality before attempting to pull the tree off bottom. The TRT is a tool designed to be run on drill pipe to the subsea tree. Once the tool has been set on top of the tree, pressure is applied to the tool which activates a locking mechanism securing the tool to the tree. The tree can then be unlatched from the wellhead and pulled to surface. The investigation following the incident showed two areas of concern with the surface testing procedure. The first area of concern is with step 10 on page 17 of the surface testing procedure. This step calls for the operator to verify the times and volumes required to make each function of the tool. The procedure calls to test the following functions: lock, unlock, and secondary unlock. FMC personnel stated that this step was not done "due to the way the pressure was regulated on the low pressure pump". The second area of concern is with step 14 on page 18 of the surface testing procedure. This step calls for the "hump pressure" to be recorded during the test. The "hump pressure" is a term used to describe a pressure signature where the pressure will begin to increase on the chart, level out for a brief time period as the tool functions, and then increase again until the required 3000psi pressure is reached. FMC noted on the procedure that no "hump pressure" was observed due to the volume of the pump being used at the time of testing. By capturing the times and volumes required to make each function and the hump pressure profile, the crew could have better recognized a failed TRT latch and lock while on the seafloor.

On January 1, 2014, the rig had successfully moved onto location and was prepared to send the TRT to bottom to retrieve the tree. The Marubeni representative on the rig was instructed to move the rig to a designated "safe zone". The "safe zone" is an area, designated by the operator, to ensure that no equipment on the seafloor is damaged in the event that something is dropped by the rig. The rig should have been in a "safe zone" while running the TRT to bottom and while bringing the tree back to surface. After confirming the final rig position, the rig was re-positioned to a "safe zone" 100 feet to the Northeast of the wellhead. This was an error due to a misunderstanding of the instructions that were given to the Marubeni representative on the rig from the Marubeni supervisor in the Houston office. The actual instructions that were given were to move the rig a minimum of 100 feet from the nearest subsea infrastructure. There was no confirmation that the "safe zone" that was chosen met the objective of moving the rig to a safe area to minimize potential damages should an accident occur.

Once the rig was in the "safe zone", the rig began running the TRT to 100 foot off bottom and re-positioned over the tree. During this time, the Remotely Operated Underwater Vehicle (ROV) was at the tree, unlocking the flowline and tree connectors and disconnecting the tree from the wellhead. Marubeni's procedure for the pulling operations called for the TRT to be locked to the wellhead and an over pull test to be performed to verify the tool is locked before unlocking the tree from the wellhead. If an over pull test would have been done, the rig personnel would have known that a proper latch had not been achieved. The rig continued with operations and after two failed attempts to latch the TRT to the XT, the rig began troubleshooting the issue. Locking procedures were done and the first two attempts to pull the tree were unsuccessful when the TRT pulled free with the tree still on the subsea wellhead. An inspection of the tree showed that part of the ROV light frame had broken off into the funnel of the tree and was preventing the TRT from fully latching. The debris was removed from the tree by the ROV and a third attempt was initiated.

On the third attempt, the TRT was thought to be successfully latched. The tree was

lifted off of the subsea wellhead and brought up to approximately 31 feet below the waterline, where it inadvertently unlatched and dropped to the seafloor landing on, and damaging, a portion of the Angus subsea infrastructure. Video footage of the operation showed that no "hump pressure", or pressure signature, was observed during the locking sequence. This would have been the operator's first indication that there was a problem with the operation. Also, video footage showed that the lock/unlock indicator bar on the TRT was questionable. The indicator bar was not at a 90 degree angle, as shown in the engineered drawings, which made it hard to determine whether or not the locking device had fully latched onto the tree or not. Had the indicator bar functioned correctly, it would have made determining the lock/unlock position easier to read and less subject to interpretation.

After the incident, the job was shut down and all required parties were notified. The ROV was sent to the Angus A004 jumper to inspect it for any damages as a result of the tree strike. It was observed that although some damages had been sustained, there were no signs of pollution or significant damage. Plans were made to retrieve the tree from the seafloor. Further inspection on the TRT determined that the locking mechanisms were all working as designed and no abnormalities could be observed with the tool.

On Feb. 23, 2014, both the subsea tree and the A004 jumper were successfully recovered from the seafloor. The A004 hub was secured by installing high pressure cap and pressure testing it to 7500 psi. The subsea tree was found to be in good condition with no damages sustained from the incident. The A004 jumper was sent in to be refurbished as a result of the collision. The rig was approved to latch up the Blow Out Preventers (BOPs) and continue with well work on the A002 once it was determined safe to do so.

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

Rig personnel failed to ensure that the Tree Retrieving Tool (TRT) was properly latched to the Subsea Tree before attempting to lift it off of the A002 well and pull it to surface.

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

- Rig personnel failed to recognize that the "open/close" indicator bar on the stack was not installed as per FMC's engineered drawings.

- Rig personnel failed to take remedial actions when a "hump pressure test" or "pressure signature test" was unable to be achieved as per FMC procedure. -

- The decision was made by rig personnel to omit the over-pull test that is required in Marubeni's procedures.

- A misunderstanding between Marubeni's rig personnel and office personnel of a proper designated "safe zone" led to the rig being positioned over the A004 well's jumper instead of being clear of all subsea equipment.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

Several repairs to the A004 jumper that was hit by the falling subsea tree were needed.

NATURE OF DAMAGE:

Damage sustained from the impact of the falling subsea tree to the A004 well's jumper

ESTIMATED AMOUNT (TOTAL): \$227,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The Houma District has no recommendations at this time.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

On Jan. 29, 2014, while in the process of pulling the subsea tree (XT) off of Marubeni's A002 well, the XT inadvertently released from the Tree Retrieving Tool (TRT), falling to the seafloor and damaging Marubeni's A004 well's jumper.

The personnel on the rig during the time of the incident failed to ensure that the TRT was properly latched to the XT before attempting to lift it off of the A002 well. In addition, a proper "safe zone" was not established by the rig to ensure that no subsea infrastructure would be damaged in the event of a release.

25. DATE OF ONSITE INVESTIGATION:

09-JAN-2014

26. ONSITE TEAM MEMBERS:

Cemal Ozoral / Troy Boudreaux /
Cedric Bernard / James Richard /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan A. Domangue

APPROVED
DATE:

16-JUL-2014