

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: 27-JUN-2020 TIME: 1725 HOURS

2. OPERATOR: LLOG Exploration Offshore, L.L.C.

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K See Remarks
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

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

8. OPERATION:

4. LEASE: G27277

AREA: MC LATITUDE:

BLOCK: 503 LONGITUDE:

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

5. PLATFORM:

RIG NAME:

6. ACTIVITY:

- EXPLORATION(POE)
- DEVELOPMENT/PRODUCTION (DOCD/POD)

9. CAUSE:

7. TYPE:

INJURIES:

HISTORIC INJURY

OPERATOR CONTRACTOR

REQUIRED EVACUATION

LTA (1-3 days)

LTA (>3 days)

RW/JT (1-3 days)

RW/JT (>3 days)

FATALITY

Other Injury

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

POLLUTION

FIRE

EXPLOSION

LWC HISTORIC BLOWOUT

UNDERGROUND

SURFACE

DEVERTER

SURFACE EQUIPMENT FAILURE OR PROCEDURES

10. WATER DEPTH: 3280 FT.

11. DISTANCE FROM SHORE: 38 MI.

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

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

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

COLLISION HISTORIC >\$25K <=\$25K

On 27 June 2020 at 1725, a subsea methanol leak was observed by a Remote Operated Vehicle (ROV) Operator on the Mississippi Canyon (MC) 503, Lease OCS-G 27277 SS002 subsea well (E1) which flows back MC 547 A (WHO DAT) Platform. The platform and subsea well are owned and operated by LLOG Exploration Offshore LLC (LLOG).

Sequence of Key Events:

According to the LLOG's report, on 26 June 2020, the WHO DAT "E" field was shut-in to perform scheduled maintenance. During the scheduled maintenance, on 27 June 2020, the operator of the (ROV) noticed bubbles emanating from the subsea well's E1 tree (MC 503 SS002). The ROV operator contacted LLOG management and started a diagnostic test. On 29 June 2020, the diagnostic test confirmed an integrity issue. Total estimated volume of methanol (MEOH) lost during testing was 107 gallons.

On 01 August 2020, LLOG mobilized an ROV to perform further diagnostic testing of the leak. LLOG then formulated a plan to conduct the repairs. LLOG had also discussed the possibility of having to replace the tree if the repairs could not solve the integrity issue.

On 22 September 2020, LLOG discussed their repair plan with the Bureau of Safety and Environmental Enforcement (BSEE) New Orleans District (NOD) office. LLOG hired a contractor to build equipment to test and seal the plug that was leaking. LLOG executed a contract with the equipment manufacturer to design, build, and test a permanent, sealing plug for the leaking line. The line was taken out of service and isolated on the production-bore side of the leak.

On 14 October 2020, LLOG mobilized a Motor Vessel (M/V) to MC Block 503's safe zone, 200' minimum from existing subsea infrastructure. The M/V performed a site survey and establish Dynamic Positioning (DP), over the MC 503 SS002 well. The M/V established communication with the subsea host, MC 547 A (Who Dat) facility. The M/V also verified that the MC 503 SS002 well was shut in and hydrocarbons were flushed from the production bore downstream of the Production Master Valve (PMV) before work began. The M/V conducted ROV operations with a tubing cutting tool.

On 21 October 2020, LLOG received an approval from the BSEE NOD Workover Engineering Unit to start the repairs.

On 2 December 2020, after completing the repairs, LLOG installed a blind flange at the process connection in order to isolate the line where the leak occurred. Later that day, the well was brought back in service.

BSEE Investigation:

On 30 June 2020, the BSEE NOD office was notified of bubbles emanating from the well during a maintenance ROV flyover. On 31 July 2020, the NOD Accident Investigator (AI) performed an onsite investigation. There was no pollution observed during the flyover to the facility. The Investigator obtained ROV photos of bubbling, verified that the Surface Controlled Subsurface Safety Valve and Underwater Safety Valve were tested and passed. In addition, the AI interviewed key witnesses that were on the facility monitoring the well at the time of the incident.

Based on photo evidence, BSEE agrees with LLOG that the leak came from the Methanol Injection Tree Valve. BSEE could not confirm why the valve leaked. However, LLOG stated the probable cause of the valve leak to be a damaged seal within the valve.

Conclusion:

BSEE NOD agrees with LLOG conclusion of the leaking Methanol Injection Tree Valve (MITV) as the equipment failure, likely because of internal seal leaks. Additionally, LLOG determined that the cause of the damaged seal could not be confirmed until the tree is retrieved. The breach has been mechanically isolated from all pressurized systems and produced fluids.

LLOG's investigation team has determined the corrective actions to be ensuring quality assurance by the manufacture of the subsea trees and isolating the MITV from all pressurized systems and produced fluids.

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

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

• **Equipment Failure - Flawed Equipment Design: The leaking Methanol Injection Tree Valve (MITV) as equipment failure, likely because of internal seal leaks.**

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

31-JUL-2020

26. INVESTIGATION TEAM MEMBERS:

29. ACCIDENT INVESTIGATION

Pierre Lanoix (AI Specialist) /

PANEL FORMED: **NO**

27. OPERATOR REPORT ON FILE:

OCS REPORT:

30. DISTRICT SUPERVISOR:

David Trocquet

APPROVED

DATE:

26-MAR-2021