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: **04-SEP-2023** TIME: **1320** HOURS
2. OPERATOR: **Shell Offshore Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR:
   REPRESENTATIVE:
   TELEPHONE:

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

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

4. LEASE: **G17565**
   AREA: **AC** LATITUDE:
   BLOCK: **857** LONGITUDE:

5. PLATFORM: **A (Perdido)**
   RIG NAME: **H&P 205**

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

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		

   - [X] POLLUTION
   - [ ] FIRE
   - [ ] EXPLOSION

   LWC
   - [ ] HISTORIC BLOWOUT
   - [ ] UNDERGROUND
   - [ ] SURFACE
   - [ ] DEVERTER
   - [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES

   COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

8. OPERATION:
   - [ ] PRODUCTION
   - [X] DRILLING
   - [ ] WORKOVER
   - [ ] COMPLETION
   - [ ] HELICOPTER
   - [ ] MOTOR VESSEL
   - [ ] PIPELINE SEGMENT NO.
   - [ ] DECOMMISSIONING
     - [ ] PA [ ] PIPELINE [ ] SITE CLEARANCE
     - [ ] TA [ ] PLATFORM
   - [ ] OTHER

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

10. WATER DEPTH: **7835** FT.
11. DISTANCE FROM SHORE: **140** 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:

On 9-4-2023 at approximately 13:20, an unauthorized release of approximately 24 barrels (bbls.) of Synthetic Based Mud (SBM) was discharged into the Gulf of Mexico from Alaminos Canyon (AC) 857, H&P 205 Drilling Rig located on the Shell Perdido Spar, Lease G-17565.

Prior to the occurrence of the spill, the Helmeric & Payne (H&P) drilling crew was circulating a clean out run of the hole on the GA009 well and had observed entrained gas in the SBM. The well was shut-in and circulated out through the gas buster. Next, the crew filled the processing pits with SBM from the active tank to allow for returns to be routed to the processing pits to remove the remaining entrained gas with the vacuum degasser. A total volume of 117 bbls of SBM was transferred from the active pit to the processing pits which took about 40 minutes. Approximately 7 minutes after the transfer pump was turned off, the H&P Driller noticed the volume indicator for the degasser tank was decreasing. The driller monitored the pit level sensor for a minute to see if the volume was just leveling out, but when it kept dropping, he contacted the H&P Rig Manager. The H&P Tool-pusher was sent to observe the pits and verified that the level in the sand trap tank was full, but the degasser tank was very low. The Rig Manager then made the decision to transfer the SBM back into the active pit. A total of 93 bbl. was pumped back to the active pit using the centrifuge pumps (80 bbl. of the SBM was returned to the active pit and 13 bbl. went into the slug trap). The processing pits can hold 110 Bbls. The degasser tank is one of the five tanks that make up the processing pits and can hold 18 bbls. The degasser tank volume was verified by the H&P drilling crew when they measured the degasser tank dimensions. Once the H&P drilling crew identified that the fluid was released into the Gulf of Mexico, the H&P Rig Manager posted an observer to watch for any sheens caused by the SBM discharge. The observer watched for 30 minutes and did not identify any sheens resulting from the discharge. Once the degasser tank was drained, two eight-inch valves on the discharge side of the tank were removed and inspected. The knife valve located on the discharge line of the degasser tank, and the butterfly valve used as a master dump valve for the discharge lines connected to the processing tanks were found to have leaked. The knife valve, according to the H&P drilling crew, was found to have been obstructed by cuttings keeping it from seating and sealing properly. The butterfly valve was observed to have a piece of rubber of an unknown origin preventing full closure.

The H&P Fluid Transfer Procedure states, “prior to transferring fluids, the valve configuration is to be visually checked by 2 people.” In this case, the H&P Pit-Hand, and the H&P Assistant Driller (AD) both walked down the line up and checked the valve alignments. The butterfly valve was previously locked in the closed position after the processing tanks were cleaned out. The Tool-pusher and the Rig Manager are the only personnel with access to the key and authority to remove the lock. The knife valve was observed in the closed position by looking at the blade, indication of a closed position would be the blade being in the valve body and indication of an open valve would be the blade outside of the valve body). The knife valve is also located overhead at a height of about 12 feet, the blade position may have been difficult to verify given the height, but the H&P Pit-Hand and the H&P AD visually checked the valve and believed it to be in the fully closed position as required. The H&P Pit-hand and H&P AD also verified the butterfly valve was closed and in the locked position. However, the rubber blocking the valve from properly closing allowed the SBM to leak past the butterfly valve to the cuttings shoot and ultimately discharging into the Gulf of Mexico.

On 9/5/2023, BSEE investigators interviewed the H&P Rig Manager, H&P Pit-Hand, H&P Tool-pusher and Shell Company Representative. Investigators also reviewed the drilling companies Fluid Transfer Procedure Document No. WI 7.5D3 Rev. 5 12/17/2018, JSA, Low Pressure Mud Schematic Drawing No. 205P-P001 Rev 9, 1/3/2022, Material Safety Data Sheet (SDS) Synthetic B.

Findings

Both valves had not been functioned and operated immediately prior to the fluid transfer, they were left in the closed position after the last flushing of the

**processing tanks. The last time the valves were functioned was April 2023.
The Bottom of the degasser tank is slanted with the outlet valve at the top of the slant, this allows solids to sink to the bottom of the slant. The slant also causes fluid and solids to remain in the bottom of the tank below the outlet valve. The fluid in the bottom of the processing pits made it appear the degasser tank was holding fluid when it was not.
A skillet is installed on the active pit master dump valve to prevent unintentional discharge but, there was no skillet on the processing pit master dump valve (butterfly valve).**

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

Equipment Failure, inadequate equipment testing and inspection. Lessee failed to operate the degasser tank outlet and the master dump valves thus verifing their ability to seal and prevent an unauthorized discharge prior to transferring fluid to the degasser tank.

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

**-Human Performance Error. Complacency, H&P crew only used visual indicators to verify the valves were closed. Residual fluid in the bottom of the degasser tank (below the obstructed outlet valve) made it appear to the H&P crew that the degasser tank outlet valve was closed and containing fluid. The master dump valve for the processing pit was locked in the closed position but not fully sealed due to trapped debris. The trapped debris in both valves allowed the degasser tank to incur a slow leak while being filled but was not immediately perceptible.
-Management of Change Procedures. The active pits master dump valve has a skillet installed to prevent unintentional discharge. The processing and reserve do not have a skillet installed at the master dump valve. This would have prevented the unintentional release.**

20. LIST THE ADDITIONAL INFORMATION:

**Processing Pits are of the open type and the processing pit covers have gaps that may allow debris to enter the system.
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21. PROPERTY DAMAGED: **None**

NATURE OF DAMAGE: **N/A**

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

Lessee states "crews will fill processing pits with sea water to check for any leaks through containment valves prior to future operations.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-111 W. 30 CFR 250.107 Lessee failed to maintain all equipment in a safe condition to provide for the protection of the Lease. On 4 September 2023, an unauthorized discharge of approximately 24 barrels of a Synthetic Based Drilling Mud (Synthetic B) and water mixture was released to the Gulf of Mexico. The Lessee failed to verify containment on the Discharge Valve and the Master Dump Valve connected to the Degasser Tank located in the Processing Pit prior to operations. Both valves were in the closed position but both

valves had obstructions preventing full closure of the valves which resulted in the unauthorized discharge.

25. DATE OF ONSITE INVESTIGATION:

05-SEP-2023

26. Investigation Team Members/Panel Members:

Dylan Mire / Kirby Calhoun /

27. OPERATOR REPORT ON FILE:

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION PANEL FORMED:

NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Stephen Martinez

APPROVED DATE: **20-OCT-2023**