

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: 10-FEB-2020 TIME: 1745 HOURS

2. OPERATOR: Fieldwood Energy Offshore LLC

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: G09524

AREA: VR LATITUDE:

BLOCK: 371 LONGITUDE:

5. PLATFORM: A

RIG NAME:

8. OPERATION:

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

6. ACTIVITY:  EXPLORATION(POE)  
 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

9. CAUSE:

- 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: 297 FT.

11. DISTANCE FROM SHORE: 98 MI.

12. WIND DIRECTION: N  
SPEED: 10 M.P.H.

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

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

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

**Incident Summary:**

On February 10, 2020, at 5:45 am, a shock loading incident occurred with the platform crane at Vermilion Block 371 on Fieldwood Energy LLC (FWE) platform A, while setting a tension packer (packer). FWE had its plug and abandonment crew completing abandonment operations on A1 well. Eminent Oil Services (EOS) supplied the 7 5/8 inch MAD-1 tension packer for testing plugs in the A1 well. While setting the packer to test a cement plug, the packer released shock loading the crane. The crane operator stowed the crane in the boom rest and reported the crane out of service. FWE contracted Gulf Crane Services (GCS) to complete a post shock load event inspection. At 7:20 am FWE reported the incident to Bureau of Safety and Environmental Enforcement (BSEE) Lake Charles District Office.

**Sequence of Key Events:**

On the night of the incident February 9, 2020, at 6:00 pm, the night supervisor held a pre-tour safety meeting discussing the job task and hazards on the deck. At 12:30 am, the night crew held a brief safety meeting and documented on a Job Safety Analysis (JSA) the steps for setting a packer. The night crew usage of the packer was to test the cement plug set at 1,470 feet in the 7 5/8 inch casing. The crew made up the packer on 2 7/8 inch workstring and attached the workstring to the crane using pipe elevators. The crew lowered the packer in the well bore by making up each joint of workstring using pipe wrenches and slips until reaching a depth of 1,370 feet. On February 10, 2020, at 5:45 am, the packer was set with the crane by pulling 20,000 pounds of upward tension to expand the rubber sealing element. The crew applied 1000 pounds of pressure between the cement plug and packer to test the cement plug. The pressure test failed, believing the packer caused the failure the supervisor ordered the crane operator to pull the packer to 30,000 pounds. When the crane operator reached 26,000 pounds of pull, the shear ring sheared reducing the load from 26,000 pounds to 9,000 pounds shock loading the crane. GCS started a post shock load event inspection on the crane at 11:00 am. The crane mechanic found the 9/16 inch diameter dyform 6 boom cable stretched during the shock loading event. The crane mechanics replaced the damaged boom cable on February 11, 2020.

**BSEE Investigation:**

On February 14, 2020, BSEE conducted an on-site incident follow-up. During the incident follow-up, investigators collected statements and available documents related to the incident from the supervisor. The supervisor informed the investigators the 50,000 pound emergency release shear ring sheared during the packer setting operations at 26,000 pounds of pull with the crane. During the setting of the packer with the main hoist line, the boom angle of the crane was at 64 degrees at a max lift of 40,800 pounds static or 28,100 pounds dynamic. FWE used the static chart on the main hoist line to set the packer.

The BSEE investigator requested additional documents from FWE, EOS, and GCS. BSEE Lake Charles district office received a Platform Crane Shock Loading Evaluation dated February 19, 2020, from GCS. The evaluation found the following deficiency; The existing 9/16 inch diameter Dyform 6 boom cable stretched during the shock loading event, confirming the damage to the boom cable.

Documents show FWE used the crane to set the packer by pulling tension with the crane. API RP 2D 6th Edition Appendix B.3.2.3 states "Guidelines for moving the load are as follows: Before starting to lift, the following conditions shall be verified: 2. The load is free to be lifted". FWE had no intentions of lifting the packer while setting the packer in the 7 5/8 inch casing. Documents showed FWE used the packer on three separate days. February 03, 2020, the crane operator set the packer using 32,000

pounds of pull. February 09, 2020, the crane operator set the packer using 20,000 pounds of pull. February 10, 2020, the crane operator set the packer using 20,000 pounds of pull. The supervisor asked the crane operator to pull an additional 10,000 pounds, this resulted in the ring shearing at 26,000 pounds.

BSEE received the JSA for setting the packer on February 10, 2020. The JSAs for February 03, 2020, and February 09, 2020 are missing according to an email response received from FWE on March 31, 2020. The JSA used on February 10, 2020, is for setting a packer with casing jacks. The JSA has the wrong setting weights and wrong shear ring weight. The JSA states "Do not pull over 50K with jacks on pipe due to shear pin on packer shearing at 75K". The designated ultimate work authority (UWA) on the JSA did not approve the JSA with a signature.

BSEE asked FWE if EOS would inspect the packer to determine why the packer sheared at 26,000 pounds. On February 24, 2020, FWE informed BSEE they sent the packer to EOS for a root cause analysis (RCA). BSEE received the operating instructions for the 7 5/8 inch MAD-1 tension packer provided by EOS. The emergency release shear ring is for applications from 25,000 pounds to 50,000 pounds dependent on the rating of the shear ring installed. The operating instructions recommend changing the shear ring after each setting. FWE did not change the shear ring after previous settings. EOS documents show the shear ring setting is 40,000 pounds and not 50,000 pounds as reported by FWE. The tolerances set in manufacturing for the shear ring is 10% + or -, this was a 40,000 pound shear ring so the accepted tolerance would be from 36,000 pounds - 44,000 pounds.

#### Conclusions:

BSEE has determined FWE did not follow API 2D sixth edition during the setting of the packer. FWE had no intentions of lifting the packer, the packer was not free for lifting. FWE plug and abandonment crew used the wrong JSA during the incident. The use of a JSA for casing jacks did not identify the risk to the crane and personnel during the setting of the packer. Furthermore; the UWA listed on the first page of the JSA did not approve the JSA with a signature. FWE plug and abandonment crew believed the shear ring rating installed in the packer was 50,000 pounds instead of the correct rating of 40,000 pounds. FWE did not follow the manufactures instruction to change the shear ring after each setting, this caused the shear ring to shear at 26,000 pounds.

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

FWE did not follow API 2D sixth edition during the setting of the packer. FWE had no intentions of lifting the packer, the packer was not free for lifting. The shear ring sheared on the packer, reducing the load on the crane boom from 26,000 pounds to 9,000 pounds shock loading the crane. The 9/16 inch diameter Dyform 6 boom cable received damaged due to the shock loading incident.

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

FWE did not follow the manufactures operating instructions for setting the tension packer. FWE did not change shear ring after each setting.

FWE used a JSA for setting the packer with casing jacks instead of a JSA for setting the packer with a crane. There is no risk assessment for the crane or personnel in the JSA used.

The FWE crew did not know the value of the shear ring, the crew reported to BSEE investigators the shear ring value to be 50,000 pounds. The investigation revealed the shear ring value of the ring is 40,000 pounds

The recommendation to "recommend" a load cell data recording device for lifts when utilizing a crane (specifically a "basic" model type platform crane) for well work is favorable. Simply by installing the load cell recording device, it would reduce the number of events of lifts beyond SOP guidelines and provide a critical data record for crane failure events. Historically, crane operator and near vicinity witness testimony are critical components with investigation but often the testimony given is somewhat different to actual load weights and loading conditions when an event occurred.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

9/16 inch diameter Dyform 6 boom cable received damaged due to the shock loading incident.

9/16 inch diameter Dyform 6 boom cable stretched, damage is under \$25,000.

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

BSEE Lake Charles district recommends that OII and OSM draft safety alerts to address the following concerns:

Safety alert to not use platform crane to set tension packers, through this investigation it seems to be an industry accepted practice

Safety alert to follow the manufactures instruction to change the shear ring on the MAD-1 tension packer after each setting.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

I-102 C 30 §250.108:

\*Fieldwood did not follow API RP 2D. The load was intentionally set in the casing and was no longer free to be lifted.

G-110 C §250.107:

\*A tension packer was used multiple times without changing the shear ring, as recommended in the manufactures operating instructions.

\*FWE did not utilize the proper equipment to apply upward force on the packer.

25. DATE OF ONSITE INVESTIGATION:

14-FEB-2020

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

26. INVESTIGATION TEAM MEMBERS:

Mitchell Klumpp / Guy Bertand / Larry Miller / Rudy Garza /

OCS REPORT:

30. DISTRICT SUPERVISOR: Mark

27. OPERATOR REPORT ON FILE:

Osterman

