

UNITED STATES DEPARTMENT OF THE INTERIOR  
 BUREAU OF SAFETY AND ENVIRONMENTAL AND ENFORCEMENT  
 GULF OF MEXICO REGION

## ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: **27-OCT-2011** TIME: **0100** HOURS

2. OPERATOR: **McMoRan Oil & Gas LLC**  
 REPRESENTATIVE: **Roy, Clayton**  
 TELEPHONE: **(337) 735-7929**  
 CONTRACTOR:  
 REPRESENTATIVE:  
 TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER **Tubing hanger pin ejected**

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

6. OPERATION:

4. LEASE: **G04090**  
 AREA: **WC** LATITUDE:  
 BLOCK: **294** LONGITUDE:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER **P&A activities**

5. PLATFORM: **C**  
 RIG NAME:

6. ACTIVITY:  EXPLORATION (POE)  
 DEVELOPMENT/PRODUCTION (DOCD/POD)

8. CAUSE:

7. TYPE:

- HISTORIC INJURY
  - REQUIRED EVACUATION 1
  - LTA (1-3 days)
  - LTA (>3 days) 1
  - RW/JT (1-3 days)
  - RW/JT (>3 days)
  - Other Injury

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

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

9. WATER DEPTH: **44** FT.

10. DISTANCE FROM SHORE: **24** MI.

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

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

COLLISION  HISTORIC  >\$25K  <=\$25K 13. SEA STATE: FT.

## 17. INVESTIGATION FINDINGS:

In March of 2005, WC 294 C-2 well was operated by Newfield. A leak occurred on the surface controlled subsurface safety valve (SCSSV) control line, but the leak was stopped with Seal-Tite. In August 2006, repeated leak problems led to the installation of a Seal-Tite cylinder which provided intermittent injection of Seal-Tite which once again resolved the leak. On April 6, 2007, personnel were not able to open the SCSSV, with diagnostics indicating that an obstruction was in the control line. The SCSSV was isolated and was replaced with a subsurface controlled safety valve.

On October 27, 2011, Alliance Offshore Services was on location at WC 294C for McMoran Oil & Gas. The objective for the job was to Temporarily Abandon (T&A) well C-2. Alliance personnel were attempting to separate the wellhead from the well bore at the top of the 7-5/8 inch casing head flange. The 2-7/8 inch tubing was cut at 840 feet. The crane was connected to the wellhead with 34,000 lb of pull with 1,000 lb on the 7 5/8 inch casing, but separation was unsuccessful at the 7-5/8 inch casing head flange. Alliance personnel started making an attempt to separate the wellhead at the top of the tubing head. Pressure was bled off the top of the wellhead and the casings. The Alliance injured person (IP) started backing the hanger pins off of the tubing hanger, when on the fifth pin the IP did not see the packing nut backing out with the pin. For unknown reasons at the time of incident, the entire tubing hanger pin was ejected out of the tubing hanger head striking the IP on the shin before continuing another ten (10) feet. The IP was diagnosed by the doctor with a fractured shin bone and had surgery to clean the wound from the hydraulic oil and debris.

On November 14, 2011, BSEE inspectors traveled to Intracoastal City to inspect the wellhead. The wellhead was found fully assembled with the integral safety valve closed. It was determined the wellhead would need to be dismantled between the tubing head and tubing head adaptor. On November 29, 2011, a meeting was held with BSEE, McMoran, and Alliance. At this meeting the events that lead up to the incident were discussed along with reviewing the supporting documentation. There were two possible reasons for the pin being ejected from the tubing head; mechanical pressure and pneumatic/hydraulic pressure. Mechanical pressure was ruled out as a possible cause because the pin couldn't be in contact with the tubing hanger after being backed out. Pneumatic/hydraulic pressure as a cause would have to be determined at the dismantling of the wellhead at FMC; which was scheduled for December 1, 2011.

After reviewing statements and drawings of the wellhead, it was determined that it was not necessary to back the hanger pins off of the tubing hanger to remove the wellhead at the tubing head and tubing head adaptor flange. There were no supporting documents to indicate the control line was bled to zero after the integral safety valve was isolated. It was also noted the bleeder plugs on the wellhead were not checked for trapped pressure in the voids of the wellhead. On December 1, 2011, BSEE inspectors along with McMoran and Alliance, traveled to FMC to witness the dismantling of the wellhead. At the beginning of the dismantling, FMC personnel started checking the wellhead for pressure using a bleeder valve tool on the void in the tubing head adaptor. It was then that an undetermined amount of pressure was detected at the seal sleeve at the top of the tubing hanger. FMC wasn't able to get a gauge on the bleeder plug due to the design of the wellhead. The tubing hanger pins and tubing hanger compression ring were also observed to have scarring and indentions. According to the FMC Shop Supervisor/ Surface WellHead Distribution Coordinator, the scarring and indentions were caused during the initial installation of the hanger. Pressure is put on the compression ring by the hanger pins to compress the seal thus causing the scarring and indentions. The compression ring and non-extrusion ring were observed to be free of defects. The ¼ inch tubing in the void that supplies hydraulic pressure to the subsurface safety valve was observed to be free of defects. The integral safety valve assembly to isolate the subsurface safety valve was observed to be free of defects. The fitting that connects the ¼ inch tubing to the integral safety valve assembly was found to have the following defects; the fitting threads and nut were gouged, the ferrule was not fully compressed on the ¼ inch tubing and was pushed up against the edge of the ¼ inch tubing. The scarring from the tubingcutter was holding the ferrule on the tubing. This defect in the

installation of the fitting allowed hydraulic fluid to enter the void in the tubing head and tubing head adaptor thus compressing the air/gas in the void. The pressure that was in the void ejected the tubing hanger pin when it was improperly backed off of the compression ring. The IP should have made sure the stem of the pin was turning and not the packing nut.

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

The void surrounding the tubing hanger contained an undetermined amount of pressure with no attempt to bleed it to zero pressure before the start of the wellhead dismantling; therefore, the most probable cause of the tubing pin being ejected from the tubing hanger.

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

Human error by all parties involved in the initial dismantling of the wellhead:

1. Failure to have proper tools to ensure that all sections of the wellhead could be bled to zero.
2. Failure to bleed all sections of the wellhead to zero.
3. Failure of supervisory oversight to ensure all workers were properly trained on proper techniques for backing the tubing hanger pins from the tubing hanger.
4. The Job Safety Analysis (JSA) failed to recognize all threats associated with the dismantling of a wellhead.

20. LIST THE ADDITIONAL INFORMATION:

N/A

21. PROPERTY DAMAGED:

None

NATURE OF DAMAGE:

None

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The Lake Charles District recommends to the Office of Safety Management that a Safety Alert be issued on trapped pressure in wellheads. Prior to dismantling the wellhead it must be evaluated for trapped pressure in all segments of the well head, with attention placed on trapped voids.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-110

Lease operator failed to ensure that trapped pressure was removed from all voids in the wellhead, and also failed to ensure that proper equipment to check for pressure was available on the location. The JSA failed to list trapped pressure as a hazard as well as listing a procedure for checking for trapped pressure before removal of tubing hanger pins, and the wellhead assembly in general.

25. DATE OF ONSITE INVESTIGATION:

26. ONSITE TEAM MEMBERS:

Carl Matte / Wayne Meaux / Larry  
Miller / Mitchell Klumpp / William  
Olive /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Larry Williamson

APPROVED

DATE: 14-DEC-2011

# INJURY/FATALITY/WITNESS ATTACHMENT

OPERATOR REPRESENTATIVE  INJURY  
 CONTRACTOR REPRESENTATIVE  FATALITY  
 OTHER Alliance Oilfield Services L  WITNESS

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE:

TOTAL OFFSHORE EXPERIENCE:

YEARS

EMPLOYED BY:

BUSINESS ADDRESS:

CITY:

STATE:

ZIP CODE:

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