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: **22-SEP-2019** TIME: **0655** HOURS
2. OPERATOR: **McMoRan Oil & Gas LLC**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **Warrior Energy Services**
   REPRESENTATIVE:
   TELEPHONE:

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

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

4. LEASE: **G12362**
   AREA: **MP** LATITUDE: **29.27927**
   BLOCK: **299** LONGITUDE: **-88.75804**

5. PLATFORM: **A**
   RIG NAME:

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		

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

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

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

8. OPERATION:
   - [ ] PRODUCTION
   - [ ] DRILLING
   - [ ] WORKOVER
   - [ ] COMPLETION
   - [ ] HELICOPTER
   - [ ] MOTOR VESSEL
   - [ ] PIPELINE SEGMENT NO.
   - [X] OTHER **Construction**

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

10. WATER DEPTH: **209** FT.
11. DISTANCE FROM SHORE: **29** MI.
12. WIND DIRECTION: **SE**
    SPEED: **29** M.P.H.
13. CURRENT DIRECTION:
    SPEED: M.P.H.
14. SEA STATE: **6** FT.
15. PICTURES TAKEN:
16. STATEMENT TAKEN:

On September 22, 2019, McMoran Oil and Gas had an explosion incident at the Main Pass 299 A facility while conducting well operations. While preparing for a tubing cutting operation and performing continuity tests on a blasting cap, an Electric Line Operator (ELO) sustained puncture wounds to his right-hand fingers, left forearm, and left torso when a 'Green Detonator' Blasting Cap exploded. A helicopter transported the ELO to Plaquemines Medical Center in Port Sulphur, LA. for medical evaluation which determined that no prescription or treatments were needed beyond first aid. At 07:45 hours on September 22, 2019, McMoran reported the incident to the Bureau of Safety and Environmental Enforcement (BSEE) New Orleans District after-hours contact.

Before the operation began at 06:00 hours, a safety meeting was held to discuss the operations for the day which included unloading casing jack equipment and rigging up electric line equipment to cut tubing. The meeting included all the Warrior Energy personnel on the facility and the crane operator.

According to the Warrior Energy post-incident investigation report, after the safety meeting, the ELO notified the Warrior Energy Supervisor of his planned tasks to re-head the e-line cable head. The ELO then proceeded to his work area and began testing a shock sub tool with a Megohmmeter. He then attempted to test the Green Detonator blasting cap with the same meter. While testing the detonator using the Megohmmeter, the blasting cap detonated unexpectedly causing puncture wounds to his fingers on his right hand, left arm, and left torso. All operations were suspended pending an investigation.

At 07:00 hours, McMoran's company representative called the Loop 60 production operator to dispatch a helicopter for the injured person. The operator's representative notified McMoran's Manager of Production Operations and held a conference call with McMoran's HSE Supervisor.

At 07:30 hours, the helicopter arrived and transported the injured person with a H2S tech as an escort to Plaquemines Medical Center in Port Sulphur, LA. for medical evaluation which determined that no prescription or treatments were needed beyond first aid.

On September 23, 2019, a BSEE incident investigation team mobilized to the MP 299 A Platform and conducted an onsite investigation. The BSEE incident investigation team did the following: 1) gathered all applicable documents; 2) performed written and photographic documentation of the incident scene; 3) conducted a post-incident inspection; 4) documented the Operator's corrective actions; and 5) re-interviewed witnesses to the incident.

According to the operator's post-incident report, the ELO used the incorrect meter while checking the resistance on the unshielded detonator. The ELO used a megohmmeter while checking the resistance on the unshielded blasting cap. According to the wireline contractors Explosive Safety Management System document "only the galvanometer [should be used] to test continuity in blasting caps. American Petroleum Institute Recommended Practice 67 states "only instruments recommended for use when testing electrical detonators and detonator circuits are those specifically designed and/or qualified for checking explosives and explosives circuits. The test current from the meter used to perform resistance checks shall not exceed 25 milliamperes or 10% of the no-fire rating of the detonator in the circuit, whichever is less."

The BSEE investigation team also found that the ELO did not follow operational protocol and did not place the blasting cap inside the safety loading tube prior to testing. The report states the ELO deviated from the discussed operations and the job safety analysis (JSA) contained no mention of explosive related job tasks or explosive hazards. The ELO sustained injuries because the detonator was outside of the

protective shroud and the all fire detonator voltage threshold was exceeded.

The BSEE investigation team found documents that indicated the ELO had over 10 years of experience with similar operations while working for another company. However, this was the first time the ELO worked with explosives while working for Warrior Energy. The ELO did not take any of the Warrior Energy explosive safety training. According to post-incident interviews, the ELO did not know the megohmmeter would ignite a blasting cap. The megohmmeter was not labeled with a warning "Do Not use to Test Blasting Caps." The ELO is certified to work with explosives.

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

Human Performance Error:

• The ELO did not follow the directions of the supervisor after the safety meeting and performed tasks not covered during the safety meeting.

• The ELO did not use the proper tools for the job. A megohmmeter was used to test the detonator instead of the proper testing device. (See API 67 statement above)

Management systems:

• The ELO did not have or follow the proper job procedures for testing the cap.

• The blasting cap was not inside the protective shroud while being tested.

• The pre-job safety meeting did not discuss testing the detonator.

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

• The Megohmmeter was not labeled with a warning "Do Not Use To Test Blasting Caps."

• The injured person did not know that a Megohmmeter would ignite a blasting cap.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED: **Green Detonator "Blasting Cap"**

NATURE OF DAMAGE: **Detonator ignited while being tested**

ESTIMATED AMOUNT (TOTAL): **$100**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

A Safety Alert is forthcoming. In addition, at this time the New Orleans District has no further recommendations.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

Procedures for testing a blasting cap was not followed which resulted in the detonation of the blasting cap outside the Safety Loading Tube.

Note: A G110 INC was issued; Enforcement

Code: Shut In; Regulation: 30 CFR 250.107.

PINC:G110 states "Does the lessee perform all operations in a safe and workmanlike manner and provide for the preservation and conservation of property and the environment?" The violation Description for the INC:(1) Wire line operator did not follow procedure and tested a "Green Detonator" with the wrong meter which caused the blasting cap to detonate; and (2)the procedures were not followed and the safety loading tube was not used while the Green Detonator was being tested.

25. DATE OF ONSITE INVESTIGATION:

23-SEP-2019

26. INVESTIGATION TEAM MEMBERS:

Frank Musacchia / Daniel Woods / Forrest Temple / Brian Wilson /

27. OPERATOR REPORT ON FILE:

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

David Trocquet

APPROVED DATE: **02-JUL-2020**