

UNITED STATES DEPARTMENT OF THE INTERIOR
 MINERALS MANAGEMENT SERVICE
 GULF OF MEXICO REGION
ACCIDENT INVESTIGATION REPORT

1. OCCURRED

DATE: **22-AUG-2007** TIME: **1500** HOURS

2. OPERATOR: **Anglo-Suisse Offshore Partners, L**

REPRESENTATIVE: **Samay, Christina**

TELEPHONE: **(713) 275-7706**

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

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

6. OPERATION:

4. LEASE: **00385**

AREA: **WD** LATITUDE:

BLOCK: **29** LONGITUDE:

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

5. PLATFORM: **F**

RIG NAME:

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

8. CAUSE:

7. TYPE:

- HISTORIC INJURY
- REQUIRED EVACUATION **2**
- LTA (1-3 days)
- LTA (>3 days) **1**
- RW/JT (1-3 days)
- RW/JT (>3 days) **1**
- 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

9. WATER DEPTH: **40** FT.
 10. DISTANCE FROM SHORE: **7** MI.

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

11. WIND DIRECTION: **SE**
 SPEED: **7** M.P.H.
 12. CURRENT DIRECTION: **SE**
 SPEED: **0** M.P.H.

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

13. SEA STATE: **3** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On 8/22/2007 around 15:00 operations shut in the compressor involved and started the # 2 compressor to perform maintenance. The compressor stayed shut in for an estimated three hours. When the operator began to have trouble with the # 2 compressor they decided to start up the # 1 to help with the load. Two men stood at the front of the compressor, one was operating the fuel gas and starter the other was observing for learning purposes. Another man was at the back of the compressor operating the air for the startup. The operator rolled over the engine and then attempted to crank it. The unit tried to fire off but failed. The unit then backfired causing the operators to shut off the air and fuel supply. Within an estimated 2 seconds an explosion occurred blowing off the # 1 compressor crankcase door. Oil was blown out hitting the wall and window of the compressor building. The wall and window redirected the oil (hot oil) onto the two operators standing at the front of the compressor burning both of them. Injured Person #1 contract employee, Loss Time Accident (LTA) 15 days; currently on restricted work and anticipated to be released to regular duty October 4, 2007. Injured Person #2 contract employee, assigned to Restricted Work (RW) the same day as incident and anticipated to be released to regular duty September 21, 2007.

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

- 1) Gas and air mixture in the crankcase of the # 1 compressor
- 2) Source of ignition coming from the backfire of the engine on the # 1 compressor
- 3) Engine was shut down for three hours
- 4) Leaking packing on the # 1 compressor piston rod allowing gas to enter the crankcase

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

- 1) Possible fuel mixture was too rich causing the # 1 compressor engine to backfire
- 2) The backfire passed through the power piston rings into the crankcase. This ignited the gas and air mixture in the # 1 compressor engine crankcase which caused the explosion
- 3) The wall and window in the compressor building redirected the hot oil onto the operators.
- 4) Compressor # 1 was shut-in for 3 hours and due to a failed pneumatic relay, the suction SDV was still open and the BDV was still closed. This went undetected until the operator tried to start the compressor back up.
- 5) Crankcase access doors were made of cast iron and had a non-flame arrestor type relief area of only 25.25 square inches per panel. This was identified in a Safety Alert (Service News Bulletin 810) provided by Cooper Bessemer (issued in 1988 and then re-issued in September 1995) as a potential hazard.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

Broken Window of compressor building
Bent metal on the compressor building
Crankcase door on the # 1 compressor

Broken Items from Explosion:

ESTIMATED AMOUNT (TOTAL): \$10,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The New Orleans District recommends that the Office of Safety Management send out a Safety Alert on crankcase explosion with manufactures' alert attached.

The New Orleans District agrees with the following company recommendations:

- 1) Replace cast iron crankcase access doors with steel doors (Bicera Door) with built-in flame arrestor with downward deflection plate, relief area is 78 square inches per panel.
- 2) Re-position control station of the compressor unit.
- 3) Issue Safety Alerts on this incident and discuss during crew safety meetings.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: NO

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

NA

25. DATE OF ONSITE INVESTIGATION:

23-AUG-2007

26. ONSITE TEAM MEMBERS:

Bryan Bush / Justin Josey /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Troy Trosclair

APPROVED

DATE: 25-SEP-2007

FIRE/EXPLOSION ATTACHMENT

1. SOURCE OF IGNITION: **Backfire of engine.**

2. TYPE OF FUEL: GAS
 OIL
 DIESEL
 CONDENSATE
 HYDRAULIC
 OTHER **Natural Gas**

3. FUEL SOURCE: **Natural Gas**

4. WERE PRECAUTIONS OR ACTIONS TAKEN TO ISOLATE
KNOWN SOURCES OF IGNITION PRIOR TO THE ACCIDENT ? **NO**

5. TYPE OF FIREFIGHTING EQUIPMENT UTILIZED: HANDHELD
 WHEELED UNIT
 FIXED CHEMICAL
 FIXED WATER
 NONE
 OTHER