

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

1. OCCURRED

DATE: **23-JUN-2007** TIME: **0730** HOURS

2. OPERATOR:

Forest Oil Corporation

REPRESENTATIVE: **Lamar Cormier**

TELEPHONE: **(337) 408-6268**

CONTRACTOR: **TETRA Technologies, Inc.**

REPRESENTATIVE: **Jonthal Hawkins**

TELEPHONE: **(281) 974-1963**

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

4. LEASE:

G02279

AREA: **SM** LATITUDE:

BLOCK: **106** LONGITUDE:

5. PLATFORM:

A SOUTH

RIG NAME:

6. ACTIVITY:

- EXPLORATION(POE)
 DEVELOPMENT/PRODUCTION
 (DOCD/POD)

7. TYPE:

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

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

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

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

6. OPERATION:

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

8. CAUSE:

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

9. WATER DEPTH: **198** FT.

10. DISTANCE FROM SHORE: **74** MI.

11. WIND DIRECTION: **SE**
 SPEED: **2** M.P.H.

12. CURRENT DIRECTION: **N**
 SPEED: **1** M.P.H.

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

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

A flash fire/explosion occurred at approximately 07:30 hours on June 23, 2007 in an atmospheric combination wet-dry oil storage tank as a Tetra decommissioning and abandonment crew were conducting hot work operations on the top deck of the "A" platform. The atmospheric combination wet-dry oil storage tank was located approximately fifteen (15) feet below on the second deck. The Tetra crew were using cutting torches on the top deck to cut four (4) inch support beams for a cantilever deck on the north side of the compressor building. The cantilever deck was being removed to provide access for equipment to initiate decommissioning. A flash fire/explosion noise was heard from the vicinity of the combination wet-dry oil storage tank on the second deck. Subsequent to the explosion, a fire was observed inside the storage tank. The residual fire inside the wet-dry oil storage tank was extinguished with one 240# wheel unit and two 30# hand held extinguishers. The capacity of the wet oil compartment (ABJ 320) of the atmospheric tank is 500 bbls and the capacity of the dry oil tank compartment (ABJ 310) is 1000 bbls. The amount of hydrocarbon, oil, residue, sludge, etc in the atmospheric wet-oil tank at the time of the fire is unknown. There was an open weld-a-let on piping on top of the tank. Also, there was a small hole in the top side of the tank. Hot slag fell from the torch cutting operation on the top deck to the next lower deck level and ignited oil hydrocarbons in the wet-dry atmospheric tank.

The flash fire/explosion ballooned the tank and resulted in a seam split in the lower portion of the tank. Also, a 4 inch suction line from the tank to the pump was ruptured. A reported oil spill of approximately 4.5 gallons was discharged into the OCS waters from the tank split and damaged outlet connection.

A Tetra construction worker sustained a minor burn injury to his left lower back. Mr. was the designated fire watch stationed on the cantilever deck. When he heard the fire/explosion, he swung off the cantilever deck on a set of straps that were connected to the crane. On the way down off the cantilever deck, Mr. was burned on his left lower back through his clothes by a cutting torch that had been left unattended and hanging down off the cantilever deck by Mr. and Mr. .

Tetra's Reports of Incident, Illness, Near Miss, Job Safety Analysis' (JSAs) and Hot Work Permits verify that prior to initiating torch cutting operations, a firewatch was in place, a fire tarp had been placed under the cantilever deck with a shield of running water, and all areas including the top of the atmospheric storage tank had been sniffed with a portable gas detector for gas accumulations.

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

Torch cutting operations were initiated above an atmospheric wet-dry oil storage tank that had not been rendered inert.
The atmospheric wet-dry oil storage tank was not properly shielded to prevent hot slag from falling onto and into the tank.

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

Tetra personnel failed to fully assess the current hydrocarbon status of the atmospheric wet-dry oil storage tank prior to initiating torch cutting operations.

The precautions taken (fire tarp placed under the cantilever deck and the shield of water) were inadequate to prevent hot cutting slag from falling to the second deck in the vicinity of and possibly into the atmospheric wet-oil storage tank. A failure of quality communications between the Tetra P&A crew and Mariner Energy, Inc. Management/Supervision. No Mariner Energy, Inc. Supervisory representative on board when hot work was initiated. Tetra crew initiated hot work operations with out a copy of Mariner Energy, Inc.'s "General Welding, Burning and Hot Taping Practices and Procedures Plan" on site.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

Atmospheric wet-dry oil storage tank.
Piping.

Balloned and split at bottom seam.
4 inch suction piping from tank to pump
ruptured.

ESTIMATED AMOUNT (TOTAL):

\$5,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

Mariner Energy recommendations:

Mariner Energy will implement a policy to initiate a thorough inspection of all production process equipment to ensure that all hydrocarbon process equipment has been rendered inert prior to initiating welding, burning and hot tapping operations.

Mariner Energy will develop a Safety Alert addressing this event. This event will be discussed with all Mariner Energy personnel and all contract personnel during safety meetings.

MMS' recommendations to Mariner Energy:

Mariner Energy provide onsite Supervision during non-routine operations such as decommissioning hydrocarbon process equipment by burning and cutting operations.

Mariner Energy ensure that all contractors follow Mariner's "General Welding, Burning, and Hot Tapping Safe Practices and Procedures Plan"

Lafayette District's recommendations to the Office of Safety Management: None.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-110 Mariner Energy failed to protect health, safety, property, and the environment by performing all operations in a safe and workmanlike manner.

Mariner Energy failed to immediately control, remove, or otherwise correct any hazardous oil and gas accumulations or other health, safety, or fire hazard.

Mariner Energy conducted a decommissioning operation on June 23, 2007 that resulted in the injury of a Tetra contract representative and an uncontrolled pollution occurrence.

Mariner Energy failed to comply with its December 29, 2004 approved "Welding, Burning and Hot Tapping Safe Practices and Procedures Plan" as follows:

Tetra Technologies, Inc. was not provided with a copy of Mariner's approved "Welding, Burning, and Hot Tapping Safe Practices and Procedures Plan" prior to Tetra initiating hot work operations.

Equipment containing hydrocarbons or other flammable substances located at a lower elevation where slag sparks, or other burning materials could fall was not relocated at least 35 feet from the point of impact or if relocation is impractical, either the equipment shall be protected with flameproof covers or otherwise shielded with metal or fire resistant guards or curtains or the contents shall be rendered inert.

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

26-JUN-2007

26. ONSITE TEAM MEMBERS:

Raymond Johnson / Gerald Gonzales
/

29. ACCIDENT INVESTIGATION
PANEL FORMED:

27. OPERATOR REPORT ON FILE:

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott S. Smith

APPROVED

DATE: 31-JUL-2007

FIRE/EXPLOSION ATTACHMENT

1. SOURCE OF IGNITION: **Torch cutting slag.**

2. TYPE OF FUEL:
- GAS
 - OIL
 - DIESEL
 - CONDENSATE
 - HYDRAULIC
 - OTHER

3. FUEL SOURCE: **Atmospheric wet-dry oil storage tank.**

4. WERE PRECAUTIONS OR ACTIONS TAKEN TO ISOLATE
KNOWN SOURCES OF IGNITION PRIOR TO THE ACCIDENT ? **YES**

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

INJURY/FATALITY/WITNESS ATTACHMENT

<input type="checkbox"/>	OPERATOR REPRESENTATIVE	<input type="checkbox"/>	INJURY
<input checked="" type="checkbox"/>	CONTRACTOR REPRESENTATIVE	<input type="checkbox"/>	FATALITY
<input type="checkbox"/>	OTHER _____	<input checked="" type="checkbox"/>	WITNESS

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE:

TOTAL OFFSHORE EXPERIENCE:

YEARS

EMPLOYED BY: **TETRA Technologies, Inc. / 02524**

BUSINESS ADDRESS: **25025 I-45 North**

CITY: **The Woodlands**

STATE: **TX**

ZIP CODE: **77380**

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POLLUTION ATTACHMENT

1. VOLUME: **4.75** GAL BBL
250 YARDS LONG X **200** YARDS WIDE

APPEARANCE: **SILVERY SHEEN**

2. TYPE OF HYDROCARBON RELEASED: OIL
 DIESEL
 CONDENSATE
 HYDRAULIC
 NATURAL GAS
 OTHER _____

3. SOURCE OF HYDROCARBON RELEASED: **Atmospheric Wet-Dry Oil Storage Tank**

4. WERE SAMPLES TAKEN? **NO**

5. WAS CLEANUP EQUIPMENT ACTIVATED? **NO**

IF SO, TYPE: SKIMMER
 CONTAINMENT BOOM
 ABSORPTION EQUIPMENT
 DISPERSANTS
 OTHER _____

6. ESTIMATED RECOVERY: **0** GAL BBL

7. RESPONSE TIME: _____ HOURS

8. IS THE POLLUTION IN THE PROXIMITY OF AN ENVIRONMENTALLY SENSITIVE AREA (CLASS I)? **NO**

9. HAS REGION OIL SPILL TASK FORCE BEEN NOTIFIED? **NO**

10. CONTACTED SHORE: **NO** IF YES, WHERE: _____

11. WERE ANY LIVE ANIMALS OBSERVED NEAR: **NO**

12. WERE ANY OILED OR DEAD ANIMALS OBSERVED NEAR SPILL: **NO**