

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: 07-JUL-2013 TIME: 1830 HOURS

2. OPERATOR: Energy Resource Technology GOM, In
REPRESENTATIVE:
TELEPHONE:
CONTRACTOR:
REPRESENTATIVE:
TELEPHONE:

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

4. LEASE: G01984
AREA: SS LATITUDE:
BLOCK: 225 LONGITUDE:

5. PLATFORM: B
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)
 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

6. OPERATION:
 STRUCTURAL DAMAGE
 CRANE
 OTHER LIFTING DEVICE
 DAMAGED/DISABLED SAFETY SYS.
 INCIDENT >\$25K
 H2S/15MIN./20PPM
 REQUIRED MUSTER
 SHUTDOWN FROM GAS RELEASE
 OTHER Loss of Well Control

8. CAUSE:
 PRODUCTION
 DRILLING
 WORKOVER
 COMPLETION
 HELICOPTER
 MOTOR VESSEL
 PIPELINE SEGMENT NO.
 OTHER Temporary Abandonment

9. WATER DEPTH: 146 FT.

10. DISTANCE FROM SHORE: 65 MI.

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

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

13. SEA STATE: FT.

17. INVESTIGATION FINDINGS: -

During a Temporary Abandonment (TA) procedure on July 7, 2013, while attempting to pull a tubing plug hold down stop in the short string of the B002 well, unexpected pressure was encountered. Well control was lost due to leaks in the tubing, production casing, and surface casing to an unsealed annulus. Well control was regained and the well has since been plugged. There were no injuries but there was a loss of hydrocarbons to the waters of the Gulf of Mexico (GOM).

Review of actions leading up to this event revealed the following:

Energy Resources Technology GOM, Inc, (ERT) is a moderate size operator that has been abandoning a significant number of wells and structures for the past several years. It was purchased by TALOS Energy in February 2013. Since 2009, ERT has performed abandonment operations on 273 wells without a well control incident and removed over 30 structures. It has developed a thorough abandonment operation process, but it has had numerous Incidents of Noncompliance (INCs) each year and an INC to inspection ratio far above the GOM average in 2012. It also has a SEMS program in place that has been audited by a third party; however, not all corrective actions had been completed as of July, 7 2013.

The B002 well was drilled in 1970 by SONAT Exploration Company. ERT purchased the block from SONAT in 1999. The well was completed as a 2 3/8 inch dual in the DQ-C sand at 10,402-10,420 feet and the DE-C sand at 8770-8785 feet. The long string eased off production in 1977 after producing 312 Million Barrels of Oil (MBO), 0.5 Billion Cubic Feet (BCF) of gas, and 1.0 Million Barrels Water (MBW) in the DQ- C sand. The DE-C reservoir completed in the short string was a gas condensate reservoir that produced 5 BCF, and 332 MBO, and 6,934 MBW. The last production shown in the short string was in 1999 and the well produced 100% water the last 2 months. An orifice was shot in the short string for gas lift in 1983.

ERT directly ran the abandonment program by hiring contractors to perform the various operations. Project oversight for the Ship Shoal 225 temporary abandonment was provided by a Production Engineer Manager for ERT. He assigned a production engineer employed by ERT to run the daily abandonment operations. A contractor provided, full-time engineer, reviewed the well files and records and prepared the Applications for Permit to Modify (APMs) for the TA operations. In the BSEE interview, the Production Engineer reported that he was having family issues that distracted him from close oversight of this abandonment operation immediately prior to the incident.

Though aware that the Production Engineer was having some family issues, the Production Engineering Manager considered him to be running the project and was only providing limited oversight leading up to the incident. Other engineers were also on holiday and vacation at that time.

The B002/2D dual completion well was added at the end of the planned plugging program due to the deteriorated condition of the wellhead and visible casing. There was no review of the on-site well records or physical examination of the wellhead, normally done by the onsite Company Man, prior to preparation of the permit. The permit was submitted by ERT on May 18 and approved by BSEE on June 19. There was no explanation why the field data review was not done and the data not compared to the office records to determine if a revised permit was needed during the 6 weeks between permit submittal and commencement of work.

On June 27, a contracted well service company attempted to test the production by surface casing annulus. Pressure built to 300 psi then dropped to 100 psi and fluid leaked from the drive pipe below the wellhead support plate. There was no pressure on the production casing. There was no inlet to test the surface by conductor annulus and there were gas lift valves in the production tubing. None of the casings were tested. No Revised Permit to Modify (RPM) was submitted to change the casing test procedure, even though notification to BSEE if any annulus could not be tested was a condition of approval in the permit.

On July 4 and 5, the contracted Wireline Crew attempted to clean sand from the short

string and fish a plug set below the tubing check gas lift perforation but were unable to latch the plug. Review of on-site well records had revealed plugs set in both tubing strings and evidence of prior sand production. No RPM was submitted to change the tubing clean out procedure to include sand and a plug. On-site personnel, supervised by the Company Man, did not consider encountering or pulling a plug with wireline to be a change requiring a permit modification.

On July 6 and 7, a contracted Coiled Tubing Unit (CTU) company washed sand down to the plug. No attempt was made to pump through the plug or otherwise determine if there was pressure below the plug. The plug hold down stop was latched and pulled. Pressure on the production tubing increased from 0 psi to 250 psi and flow was seen coming from the drive pipe below the wellhead. The approved procedure did not include the use of coil tubing to wash sand and pull plugs and BSEE was not notified when the CTU moved to the location. On-site personnel said the unplanned use of wireline and coiled tubing was common and did not usually require a new permit.

All of the contractors say they got daily work assignments from ERT's company man during the morning planning and safety meetings but did not have detailed written work procedures. Each contractor used their own preprinted task based Job Safety Analyses (JSAs) and did not perform site or job specific hazard analysis. ERT also had preprinted task based JSAs. The company men say they had daily contact with ERT through written daily reports and emails and phone calls when needed. Permits and permit changes were handled by ERT.

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

The probable cause of the loss of well control was pulling the short string plug at 2550 feet without confirming the existence of pressure below the plug.

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

1. Failure to research all wellbore and well production records to determine wellbore conditions before permitting the abandonment work. A site specific hazard analysis could have prevented this incident.
2. Failure to prepare a revised permit once the actual wellbore conditions were discovered. This includes failure to involve the professional engineer in the procedure change. An effective Management of Change (MOC) program could have prevented this incident. -
3. Failure to notify BSEE, as required in the permit conditions of approval, when casing pressure tests could not be run as permitted. -
4. Failure to notify BSEE when the CTU moved on location.
5. Failure to confirm pressure integrity of production casing before pulling the plug. Held 300 psi external on June 27, 2013.
6. Failure of ERT and each contractor to perform site specific hazard analysis and conduct JSA/Safety meetings based on site specific conditions. -
7. Complacency; the abandonment crew had dealt with many other wells without encountering pressure below unexpected plugs. -
8. Lack of communication between all parties involved including contractor to contractor, contractors and company men, company men and ERT staff, ERT and BSEE. -
9. Lack of clear supervisory authority; in the days prior to the incident the Production Engineer says he was having personal problems that distracted him from the project and had asked the Production Engineer Manager for ERT to help oversee the project. The Production Engineering Manager says he did not realize that Production Engineer needed help and was not really watching the project. The field personnel

were sending in reports, apparently without response, and proceeding ahead without further direction.

10. Lack of SEMS involvement with abandonment program.

20. LIST THE ADDITIONAL INFORMATION:

1. Three INCs were written after the incident. An E-100 for the pollution, a G-111 for failure to maintain the casing in a safe condition, and a G-115 for failure to follow approved procedure. The operator has responded to these INCs.
2. The operator has conducted an internal investigation of this incident and provided a copy of their report to BSEE. Their findings generally concur with the finding of this team.
3. During the interviews after the incident, it became apparent that there was not a clear understanding at the platform of who was the Person In Charge (PIC) of the overall on-site operation. The Lead Operator was in charge of production and the consultant company men were in charge of the abandonment work.
4. ERT has had a SEMS plan in place for over a year. It has had a third party audit which found some discrepancies that are being resolved but this is an ongoing effort.

21. PROPERTY DAMAGED:

NA

NATURE OF DAMAGE:

NA

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

1. All changes in procedure must be done through the MOC process.
2. All changes in procedure must be approved by the professional engineer.
3. All changes in procedure must be approved by BSEE.
4. All well operations should be covered by SEMS.
5. All well site personnel, including consultants and contractors should be trained in relevant sections of SEMS.
6. Contractors should have written well site procedures to follow.
7. Any failed test or change in procedure should require a new site specific hazard identification and JSA.
8. A site specific hazard identification and review of all well records should be done before initial procedure development and permit submittal.
9. BSEE should audit ERT's SEMS plan.
10. BSEE should review procedure changes and determine which require notification only, a verbal approval only, or a written procedure change in an RPM.

11. All involved parties must insure clear communication of conditions and any changes.

12. There must be clear lines of responsibility and of supervision/authority at the work site and in the office.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

E-100 for the pollution

G-111 for failure to maintain the casing in a safe condition

G-115 for failure to follow approved procedure. -

25. DATE OF ONSITE INVESTIGATION:

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

26. ONSITE TEAM MEMBERS:

Larry Williamson, Team Lead -

District Manager / James Richard -

Inspector / Paul Nelson - Engineer

/ Charles Arnold - IRU /

OCS REPORT:

DISTRICT SUPERVISOR:

Bryan A. Domangue

APPROVED

DATE: **21-JAN-2014**