Macondo Relief Well MC252#3
Operational File Note 22

Issue: Temporary Abandonment for Tropical Disturbance 22
Date: July 21, 2010 **(Revision 2)**
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This OPS NOTE covers the temporary abandonment of the well to evade Tropical Disturbance 22.

1. Well Preparation

- Prepare 13-5/8" RTTS / SSC III.
- Identify crossovers. Top and bottom connections on the RTTS / SSC III are 6-5/8 FH.
- Confirm 11-7/8" Fas-Drill is on location as a contingency.
- Halliburton Tool Specialist required onsite to run/set RTTS / SSC III packer & storm valve.
- Ensure Mud Engineer has developed and reviewed riser displacement. procedure. Ensure TOI displacement procedures are incorporated.

2. TIH with RTTS / SSC III, Set and Perform Positive Test

1. POOH with DP to a depth that allows sufficient room to RIH and set RTTS / SSC III. Plan to leave the bull nose ~200 ft above the 11-7/8" shoe.
2. Make Up and RIH with 13-5/8" RTTS / SSC III as per Halliburton Rep.
   - Refer to procedures in Attachment #1.
   - Expected weight below the RTTS / SSC III ~300,000 lbs.
   - Maximum allowable weight below the RTTS / SSC III = 1,000,000 lbs with zero pressure applied. See the Halliburton Maximum Allowable Pressure with Loads table 5a.5 in Attachment #1.
3. Set RTTS at ~5700 ft MD (~500 ft MD BML).
   - As per BOEM requirement, the barrier must be set shallower than 1000 ft BML.
4. Pressure test lines to 250 psi low / 2000 psi high for a minimum of 5 minutes after the pressure has stabilized (defined as stable or decreasing pressure fall off less than 10 psi/min for assurance test as per GP10-45). Chart test.
5. Close upper annular. Test the RTTS from above (still engaged with the running tool).

- Test to 250 psi low / 1000 psi high for a minimum of 5 minutes after the pressure has stabilized (defined as stable or decreasing pressure fall off less than 10 psi/min for assurance test as per GP10-45). Chart test.
- Monitor through DP for indication of leak down backside of RTTS.

6. Open upper annular. Release the running tool from the RTTS as per Halliburton representative instructions. Pull above stack.
7. Close upper blind shear ram. Test the RTTS from above using the choke line to 250 psi low / 1000 psi high for a minimum of 5 minutes after the pressure has stabilized (defined as stable or decreasing pressure fall off less than 10 psi/min for assurance test as per GP10-45). Chart test.
   - Compare volumes against previous casing test.
8. Open upper blind shear ram.

3. Perform Negative Test

9. Objective is to evaluate the readiness for the riser to be removed from the well.
10. The subsea engineer will open the upper inner and outer choke line valves.
11. Pump 70 bbls of base oil (6.8 ppg) down the choke line to 4,500' - taking returns into the riser through the open subsea BOP.
12. Close the upper blind shear rams.
    - Choke shut-in pressure with 13.8 ppg in the riser will be ~1,600 psi.
13. Bleed pressure down on the choke line in steps to 200 psi and monitor on chart.
    - After bleeding down and leaving 200 psi on the choke, the differential pressure above the shear rams will be ~1,400 psi.
    - TOI will accept up to 2,000 psi differential pressure from above on the shear rams.
14. Monitor the pressure for **15 minutes.** Monitor riser on trip tank. Monitor pressure reading on HPHT sensor on BOP stack.
15. **Bleed choke to zero. Open and monitor for flow for 60 minutes.**
    - **Note: Differential below the shear rams will be 1,600 psi.**
16. If flow observed, troubleshoot to determine if the blind shear ram is leaking.
    - If flow observed and the blind shear rams are holding, the RTTS/SSC III and/or the 13 5/8" subsea wellhead seal assembly should be evaluated. Discuss with Houston and determine forward plan regarding barriers and evacuation requirements.
17. After a successful negative test, open the lower inner and outer kill line valves. The choke is expected to see the U-tube pressure from the mud in the kill line.
18. Displace the base oil out of the choke line by pumping mud down the lower inner and outer kill line valves and adjusting the choke to take the base oil returns from the upper choke line valves.

19. When the base oil has been recovered monitor below the shear rams with the well monitoring tank and monitor the riser on the trip tank for 15 minutes. Open the stack.
20. Monitor the riser volume for 15 minutes using the trip tank.

4. Displace Riser to SW and Pull Same

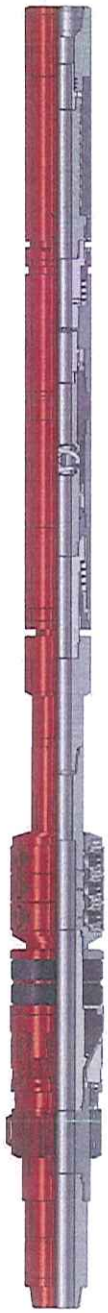
21. Displace the riser to seawater per the Baroid displacement procedure taking returns to the rig.
    - In 5,160' of water with 13.8 ppg mud, approximately 1,400 psi hydrostatic will be lost when the riser is disconnected.
22. **Upon final closure of blind shear rams, test to 250 psi low / 1,000 psi high for a minimum of 5 minutes after the pressure has stabilized (defined as stable or decreasing pressure fall off less than 10 psi/min for assurance test as per GP10-45). Chart test.**
23. Pull out of hole with running tool. Monitor well on trip tank.
24. Continue to monitor on the trip tank while rigging up riser pulling equipment. Prepare to unlatch riser. Notify SIMOPs Branch Director of impending rig move.
25. Unlatch riser and move off location in a direction to the safe zone previously established.
26. Pull riser and evade. Ensure all emergency back up communication systems are functional and all non essentials are evacuated.

ATTACHMENT 1: Halliburton RTTS / SSC III Procedures

ATTACHMENT 2: Wellbore Schematic for TA Evacuation Plan

ATTACHMENT 1: Halliburton RTTS / SSC III Procedures

Subsurface Control Valve III (SSCIII) Operating Instructions



Setting Procedures

1. Position BHA to assure the bottom of the BHA is in cased hole when packer is set.
2. Double check for maximum hang off weight and pressure test against your specification sheet see chart on page 5.
3. **Minimum pipe weight 100,000#** as per specification sheet or compensate for any anticipated pressure build up.

Halliburton Service Personnel will be present on rig floor while running and retrieving packer whenever one is on location.

4. Pick up bumper sub and attach to work string, then SSC III assembly (Valve & RTTS with pup joint).

a.) **Tighten all Service breaks to 1800 ft/lbs.**

Don't set slips on Valve or Packer body with work string weight hanging below. Damage will occur, such as collapsing a case, shearing lugs and or slips.

Make up tools in rat hole when all possible before attaching to work string. Avoid hanging the drag block on bushings, rotary table, well head, or any other obstruction. This could possibly shear the lugs on the lower mandrel.

5.) Make up the assembly in the work string. Use snub line to torque up assembly.
a.) Do not tighten any breaks with a load hanging on the tools.
b.) Work Drag Block body up and down several times. Mechanical slips should move in and out freely.
c.) Pick up on work string and record weight below RTTS.
6.) Run tool assembly in the hole until the packer and SSC III Valve are on depth and perform the following:
a.) Space to ensure that the tool joints are not across annular.
b.) Install Safety Valve or screw in top drive to vent work string pressure
7) On an upstroke, obtain the pick up weight of the work string plus 3 to 4 feet. Stop picking up on work string, rotate the pipe approximately ½ turn to the right (clockwise) at packer and slack off maintaing right hand torque. The packer will relieve the weight of the work string below.
8. To release from the SSC III Valve, set weight on valve (to be determined by work string) maintaining right hand torque from initial setting of packer, then apply additional ¼ round right hand rotation and maintain torque.
Close the annular and apply 1000psi on backside. Pick up on work string to detach from assembly. (The 1000 psi that is applied to annulus will vent to work string).
9. Once detached from assembly, a pressure test on top of the system can be done not to exceed weight versus pressure chart. See chart on page 4.
a. Release all pressure and open annular.
10. If the riser is to be removed, pickup above the retrieving neck and spot a high viscosity pill.
a) This would prevent the possibility of solids falling around the Storm Valve assembly.
12. Remove the drill pipe above the packer from the well.
13. Inspect the O-rings in the overshot body and replace if damaged.

Retrieving Procedures

1. Check O-ring in overshot. Make up the overshot on the work string. Use snub line to torque up assembly.
2. A centralizer or a stabilizer (on 11 ¾" and larger size packers) should be utilized to help centralize the work string when retrieving this assembly.
3. Run in hole with overshot using caution when the overshot approaches the retrieving neck.
4. Install rig safety valve on the drill pipe in the closed position.
5. Before tagging up on SSC III rotate drill pipe to left to relieve right hand torque in workstring.
6. Circulate thru drill pipe @ ½ bpm; continue to slack off monitoring pressure increase.
7. After obtaining pressure spike shut down pumps.
8. Apply minimum of 40 k weight on SSC III with overshot.
9. **Pickup the work string and pull on the valve 5000# over weight on pipe above overshot to open valve.** With the SSC III valve open, check the rig safety valve to determine if the well is stable.

If the well is not stable, you can close the ball valve by slacking the weight back off on the packer.

10. When the well is under control closed annular as a precaution of pressure in annulus below packer.
11. To unseat packer, pick up the weight off the packer.

a.) With packer pulled free, monitor the well.
b.) Check and make sure there is no fluid movement (flow).
c.) The well can be circulated at this time. **Caution** should be used since the packer may pack off due to the packer rings not relaxing.
d.) Avoid reciprocating the pipe while pumping.
e.) Once the well is stabilized and the fluid is conditioned, you may pull of hole.
f.) Monitor well for swabbing and or flowing while pulling out of hole.

12. When the assembly is out of hole, thoroughly wash up and coat with light oil.

With a SSC 3 Valve and packer, the blow out preventers can be tested during drilling operations without removing the entire drill pipe. Be sure to verify casing limitations. It is also possible to wire line through the fully open SSC III Valve.

Caution: Drill pipe must be in tension during wire line operation to keep ball in SSC III Valve open. This should be approximately 5000 lbs of tension pulled on the drill pipe weight above the valve. This ID is 3.50".

Consult with your Halliburton Tool Coordinator. The compensator maintains weight, not position.

Hang Off Weight Guidelines

Table 5a.4 lists hang off Weight guidelines for storm valves and RTTS packers.
Note---*Use the following formula to calculate minimum hang-off weight:*
Weight equals casing ID area X 1,000 lbs

Table 5a.4—Hang-off Weight guidelines [a-d]

Storm Valves					
Tool Number		Description	Size (in.)	Tensile Rating (lb)	Tensile Rating (80%) (lb)
SAP	Legacy				
N/A	(697.401)	SSC	3.72	218,300	174,640
100070452	(697.402)	SSC	4.75	332,600	266,080
100070468	(697.403)	SSC I	6.25	598,000	478,400
N/A	(697.41400)	SSC II	4.75	186,900	149,500
101002302	(697.41600)	SSC II	6.50	485,269	388,200
101396433	D00176044	SSC III	8.5	1,200,000	See Table 5a.5
Retrievable Packers					
Tool Number		Packer Size (in.)	Casing Weight (lb/ft)	Tensile Rating (lb)	Maximum Hang-off Weight (lb)
SAP	Legacy				
100070054	(696.5273)	5	15 to 18	84,700	67,760
100070099	(696.5382)	5 1/2	13 to 20	133,200	106,560
100070091	(696.5372)	5 1/2	20 to 23	84,700	67,760
N/A	(696.5574)	6 5/8	24 to 32	133,200	106,560
100070201	(696.5781)	7	17 to 38	158,200	126,560
N/A	(696.5785)	7	49.5	133,200	106,560
N/A	(696.5881)	7 5/8	20 to 39	158,200	126,560
100070237	(696.5877)	7 3/4	46.1	158,200	126,560
N/A	(696.5989)	8 5/8	24 to 49	237,200	189,760
100070329	(696.6083)	9 5/8	29.3 to 53.5	444,600	355,680
100070326	(696.6082)	9 5/8	40 to 71	237,200	189,760
100070349	(696.6093)	10 3/4	32.75 to 51	444,600	355,680
100070350	(696.6097)	10 3/4	55.5 to 81	444,600	355,680
101457581-D00231412		10 3/4	71.1 to 85.3	1,000,000	See Table 5a.5
N/A	(696.6211)	11 3/4	38 to 54	444,600	355,680
N/A	(696.622)	11 3/4	60 to 71	444,600	355,680
100070417	(696.6382)	13 3/8	48 to 72	651,300	521,040
101390693	D0017671	13 3/8	42 to 72	1,000,000	See Table 5a.5
100070421	(696.6392)	13 3/8	72 to 98	651,300	521,040
N/A	(696.642)	16	75 to 109	651,300	521,040
N/A	(696.643)	16	109 to 146	651,300	521,040
N/A	(696.652)	18 5/8	78 to 118	651,300	521,040
N/A	(696.662)	20	94 to 133	651,300	521,040
N/A	(696.6625)	20	169 to 204	651,300	521,040

Maximum Allowable Pressure with Loads

Table 5a.5---Maximum Allowable Pressure with Loads

Packer Assembly	101457581	101390693
Casing Size	10 3/4	13 5/8
Casing Weight	85.3	88.2
Casing ID	9.156	12.375

Hang-Off Weight (lb)	Maximum Test Pressure (psi)	Maximum Test Pressure (psi)
1,000,000	N/A	1,000
950,000	N/A	1,413
900,000	N/A	1,829
850,000	1,000	2,245
800,000	1,922	2,661
750,000	2,882	3,076
700,000	3,843	3,492
650,000	4,804	3,908
600,000	5,765	4,323
550,000	6,726	4,739
500,000	7,686	5,155
450,000	8,000	5,570
400,000	8,000	5,986
350,000	8,000	6,402
300,000	8,000	6,818
250,000	8,000	7,233
200,000	8,000	7,649
150,000	8,000	8,000
100,000	8,000	8,000
50,000	8,000	8,000
0	8,000	8,000

ATTACHMENT 2: Wellbore Schematic for TA Evacuation Plan