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Drilling & Completions MOC Initiate

MOC #: DCMOC-10-0072
Date Initiated: 4/15/2010
Initiator: Mueller, Eric T
Stage: Approve
Status: Unapproved

Asset/Project:	GoM	Type of Change:	Technical
Rig:	Horizon	Well (i.e., GC 823 #1 or N/A):	MC 252 #1 Macondo
Verifier:	Hafle, Mark	Priority:	A (High) - Immediate
Coordinator:	Mueller, Eric T		
Desired Completion Date:	04/15/2010		
Proceed with MOC?	(•) Yes ( ) No / Cancel ( ) Clarify		

Title:

Production Casing for Macondo (version 2)

Scope:

Macondo is a successful exploration well. The primary objective has been met.

A secondary objective is to make this a keeper well, for a future sub-sea completion and tie-back.

The current plan we are seeking approval for is to run a tapered long string of 9-7/8" x 7" production casing.

If the wellbore conditions deteriorate (additional losses, wellbore stability, hole fill, etc..) during the planned conditioning trip, then the recommendation will be made to run a liner instead of the long string.

Justification (include financial impact where appropriate):

The current cement model suggests that we should be able to achieve a successful primary cement job on the long string. (see attached design document in the .pdf file)

The long string provides the best economic case and well integrity case for future completion operations.

The liner, if required, is also an acceptable option, but will add an additional $7 - $10 MM to the completion cost.

The complete summary of the options and current wellbore conditions are attached in the .ppt file.

The plan forward decision tree is also attached.

Risk/Mitigation (attach risk documentation where appropriate):

Lost circulation during the cement job:

The model estimates the maximum ECD to be 14.583 ppg. The FIT on the previous shoe was 16.0 ppg. There have been two lost circulation events in this hole section: The first occurred when ECD exceeded 14.9, prior to drilling the pay sands. The second event (major losses) occurred when ECD exceeded 14.7+. Losses for this event were cured with Form-a-Set and MW reduction. Since that second event, we have been using a 14.5 arbitrary frac gradient that we are attempting to abide by based on actual circulating conditions we have put the wellbore under since having losses and fixing them. The cement job has been designed to minimize the ECD as low as practica: Foam cement, light weight spacer, and a small base oil spacer, along with low pump rates, will be used together to keep ECD below an acceptable level.

Single barrier in annulus for TA:

If losses occur during the cement job, possible cement evaluation, remedial cement operations, dispensations and/or MMS approvals will be required prior to performing TA operations due to a lower than required Top of Cement in the annulus. Possible hydrocarbon zones could be left exposed in the annulus with only the casing hanger seal as the single barrier for the TA. The attached decision tree addresses these options. A perf and squeeze operation could be performed to add a second barrier in the annulus.

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Drilling & Completions MOC Review

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Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Technical Review	Walz, Greg	(•) Agree ( ) Disagree	Walz, Greg
Technical Review	Guide, John	(•) Agree ( ) Disagree	Guide, John
Technical Review	Reiter, Doris	(•) Agree ( ) Disagree	Reiter, Doris
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	

Level 2 Reviews

Review	Responsible Person	Disposition	Completed By
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	
		( ) Agree ( ) Disagree	

| | | ○ Agree ○ Disagree |

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Drilling & Completions MOC Pre-Approval Actions

MOC #: DCMOC-10-0072
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Action Item Description	Responsible Person	Due Date	Check to Complete	Completed By

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Drilling & Completions MOC Approval

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Please select the approval levels required for this MOC.

- ☑ Level 1
- ☐ Level 2
- ☐ Level 3

Level 1 Approvals

Approver	Disposition	Date	Approved By
Sims, David C	◉ Approve ○ Cancel ○ Clarify	4/16/2010	Sims, David C
Guide, John	○ Approve ○ Cancel ○ Clarify		
Frazelle, Andrew E	◉ Approve ○ Cancel ○ Clarify	4/20/2010	Frazelle, Andrew E

Level 2 Approvals

Approver	Disposition	Date	Approved By
Sprague, Jonathan D	○ Approve ○ Cancel ○ Clarify		
	○ Approve ○ Cancel ○ Clarify		
	○ Approve ○ Cancel ○ Clarify		

Level 3 Approvals

Approver	Disposition	Date	Approved By
	○ Approve ○ Cancel ○ Clarify		
	○ Approve ○ Cancel ○ Clarify		
	○ Approve ○ Cancel ○ Clarify		

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Drilling & Completions MOC Post-Approval Actions

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Action Item Description	Responsible Person	Due Date	Check to Complete	Completed By

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Drilling & Completions MOC Close Out

MOC #: DCMOC-10-0072
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Initiator: Mueller, Eric T
Stage: Approve
Status: Unapproved

Completion	Date	Approved By
☐ MOC is complete		

- Documentation finalized and uploaded to appropriate repository
- Communication (including training) to affected personnel complete