

Form MMS 123A/123S - Electronic Version
Application for Revised Bypass

Lease G32306 Area/Block MC 252 Well Name 001 ST 00 BP 01 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

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Amount:

Agency
Tracking ID:

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03/26/10 - Revise casing program to include running a 9.875" liner.

Revised data includes:

- directional
- wellbore schematic
- pore pressure chart
- procedure

01-25-10 -

1) Revise Annular Pressure test from 5000 psi to 3500 psi.

2) Request departure to stump test the 6-5/8" and 5-1/2" drill pipe but only the 6-5/8" drillpipe subsea. The only time the 5-1/2" will be run below the stack is as an inner string during the 16" casing job. Once the 16" string is landed out and cemented, the seal assemble will be set, and the inner string pulled out of the wellbore. During this time the 5-1/2" will be below the stack inside the casing

01-12-10 - Revision to use the Deepwater Horizon to finish drilling operations (Marianas sent to shipyard for repairs, no longer under BP contract).

Revised attachments include:

- 1) Horizon BOP schematic
- 2) Wellbore schematic with revised RKB
- 3) Revised Departure List (removed departure for 250.449 (f))
- 4) Revised Pore Pressure Plot with Horizon RKB

The casing information has been upated to reflect actual setting depths, mudweights, etc.

Attachments referring to the Marianas BOPs and mooring have been removed.

10-29-09 - Revised to show shallow setting depth and revised cement volume for the 18" casing.

Revision I: 10-15-09

This RPD is to request approval to replace the upper annular element from the originally approved standard element rated to 10k on 5-1/2" pipe to a 6-5/8" element which is rated to 7.5k on 5-1/2" and 10k on 6-5/8".

Please see the attached chart which shows the rating of each element. Our max annular tests per

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the approved APD will be 5k both on the stump test and down hole.

General Well Information

API Number 608174116901	Approval Date 03/26/2010	Approved By Frank Patton
Date of Request 03/25/2010	Req Spud Date 03/16/2010	Kickoff Point
Water Depth (ft.) 4992	Drive Size (in) 36	Mineral Code Hydrocarbon
RKB Elevation 75	Drive Depth (ft.) 5361	Subsea BOP Yes
Verbal Approval Date	Verbal Approval By	

Proposed Well Location

Surface Location

LEASE (OCS) G32306	Area/Block MC 252	Authority Federal Lease
Entered NAD 27 Data	Calculated NAD 27 Departures	Calculated NAD 27 X-Y Coordinates
Lat: 28.73836889	N 6857	X 1202802.892336
Lon: -88.36593389	E 1037	Y 10431702.916855
Surface Plan	Plan Lease (OCS)	Area/Block

Bottom Location

LEASE (OCS) G32306		Area/Block MC 252			
Entered NAD 27 Data		Calculated NAD 27 Departures		Calculated NAD 27 X-Y Coordinates	
Lat: 28.73836889		N 6857		X 1202802.892336	
Lon: -88.36593389		E 1037		Y 10431702.916855	
Bottom Plan		Plan Lease (OCS)		Area/Block	

Approval Comments

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Geologic Information

H2S Designation Absent	H2S TVD
Anticipated Geologic Markers	
Name	Top MD
Discoaster kugleri	14153
Cyclicargolithus floridanus	17481
Catinaster coalitus	13145
Globorotalia peripheroronda	18400
Sphenolithus heteromorphus	19120
Discoaster petaliformis	19594

Rig Information

RIG SPECIFICATIONS		ANCHORS	No
Rig Name	T.O. DEEPWATER HORIZON		
Type	SEMISUBMERSIBLE	ID Number	46428
Function	DRILLING	Constructed Year	2001
Shipyard	HYUNDAI	Refurbished Year	
RATED DEPTHS			
Water Depth	10000	Drill Depth	35000
CERTIFICATES			
ABS/DNV	02/28/2011	Coast Guard	07/27/2011
SAFE WELDING AREA			
Approval Date	09/26/2001	District	1
Remarks			

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Number	Question	Response	Response Text
1	Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2	YES	
2	If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge, and will zero discharge procedures be followed?	N/A	
3	If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it i	N/A	
4	If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for th	N/A	
5	Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in comments for this question)	YES	Number not yet assigned
6	Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the plat	N/A	

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Permit Attachments

File Type	File Description	Status
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Required Attachments

pdf	Drilling prognosis and summary of drilling, cementing, and mud processes	Attached
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Optional/Supplemental Attachments

pdf	Wellbore Schematic	Attached
PDF	Application for Permit to Drill	Attached
pdf	Pore Pressure Graph	Attached
pdf	Directional plan	Attached

Contacts Information

Name	Scherie Douglas
Company	02481 BP Exploration & Production Inc.
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E-mail Address	scherie.douglas@bp.com
Contact Description	Regulatory
Name	Heather Powell
Company	02481 BP Exploration & Production Inc.
Phone Number	[REDACTED]
E-mail Address	heather.powell@bp.com
Contact Description	Regulatory

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Well Design Information

Interval Number 1		Type Casing		Name		Conductor		
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)
1	28.000	218.0	X-52	2437	952	6217	6217	8.6
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)	32.500		Type	No Preventers		Annular Test (psi)		0
Mud Weight (ppg)	8.6		Size (in)	N/A		BOP/Diverter Test (psi)		0
Mud Type Code	Gelled Sea Water		Wellhead Rating (psi)	0		Test Fluid Weight (ppg)		0.0
Fracture Gradient (ppg)	9.8		Annular Rating (psi)	0		Casing/Liner Test (psi)		0
Liner Top Depth (ft)			BOP/Diverter Rating (psi)	0		Formation Test (ppg)		0.0
Cement Volume (cu ft)	4636							

Interval Number 2		Type	Casing	Name		Surface		
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD	TVD	Pore Pressure (ppg)
1	22.000	277.0	X-80	7955	6670	5227	5227	8.6
2	22.000	224.0	X-80	6363	3876	7937	7937	9.3
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)	26.000		Type	Blowout		Annular Test (psi)	5000	
Mud Weight (ppg)	9.5		Size (in)	18.75		BOP/Diverter Test (psi)	6500	
Mud Type Code	Water Base		Wellhead Rating (psi)	15000		Test Fluid Weight (ppg)	8.6	
Fracture Gradient (ppg)	10.5		Annular Rating (psi)	10000		Casing/Liner Test (psi)	3400	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)	15000		Formation Test (ppg)	10.5	
Cement Volume (cu ft)	6301							

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Interval Number 3			Type	Liner	Name				Intermediate
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)	
1	18.000	117.0	P-110	6680	2110	8969	8969	10.1	
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION			
Hole Size (in) 22.000			Type Blowout			Annular Test (psi) 3500			
Mud Weight (ppg) 10.2			Size (in) 18.75			BOP/Diverter Test (psi) 6500			
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 10.2			
Fracture Gradient (ppg) 11.8			Annular Rating (psi) 10000			Casing/Liner Test (psi) 3000			
Liner Top Depth (ft) 7489.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 11.8			
Cement Volume (cu ft) 993									

Interval Number 4			Type	Casing	Name				Intermediate
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)	
1	16.000	97.0	P-110	6920	2340	11585	11585	11.0	
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION			
Hole Size (in) 20.000			Type Blowout			Annular Test (psi) 3500			
Mud Weight (ppg) 11.2			Size (in) 18.75			BOP/Diverter Test (psi) 6500			
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 11.2			
Fracture Gradient (ppg) 13.0			Annular Rating (psi) 10000			Casing/Liner Test (psi) 3600			
Liner Top Depth (ft)			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 13.0			
Cement Volume (cu ft) 1120									

Interval Number 5			Type	Liner	Name				Intermediate
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)	
1	13.625	88.2	Q-125	10030	4800	13145	13145	11.7	
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION			
Hole Size (in) 16.000			Type Blowout			Annular Test (psi) 3500			
Mud Weight (ppg) 12.3			Size (in) 18.75			BOP/Diverter Test (psi) 6500			
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 12.1			
Fracture Gradient (ppg) 14.7			Annular Rating (psi) 10000			Casing/Liner Test (psi) 2500			
Liner Top Depth (ft) 11153.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 14.7			
Cement Volume (cu ft) 410									

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Interval Number 6			Type	Liner	Name			Intermediate
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)
1	11.875	71.8	Q-125	10720	5630	15113	15102	13.1
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 14.500			Type Blowout			Annular Test (psi) 3500		
Mud Weight (ppg) 13.3			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 13.3		
Fracture Gradient (ppg) 14.6			Annular Rating (psi) 10000			Casing/Liner Test (psi) 1800		
Liner Top Depth (ft) 12800.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 14.6		
Cement Volume (cu ft) 340								

Interval Number 7			Type	Liner	Name			Intermediate
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)
1	9.875	62.8	Q-125	13840	11140	17511	17500	13.7
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 12.250			Type Blowout			Annular Test (psi) 3500		
Mud Weight (ppg) 13.9			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 13.9		
Fracture Gradient (ppg) 15.0			Annular Rating (psi) 10000			Casing/Liner Test (psi) 1000		
Liner Top Depth (ft) 14900.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 15.0		
Cement Volume (cu ft) 160								

Interval Number 8			Type	Open Hole	Name			Open Hole
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD TVD		Pore Pressure (ppg)
1						20211	20200	14.2
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 12.250			Type Blowout			Annular Test (psi) 3500		
Mud Weight (ppg) 14.4			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 0.0		
Fracture Gradient (ppg) 16.1			Annular Rating (psi) 10000			Casing/Liner Test (psi) 0		
Liner Top Depth (ft)			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 0.0		
Cement Volume (cu ft)								

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PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq. Requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 27 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form for the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849

**MMS Application for Permit to Drill
Bypass 1**

**Attachment 9
Drilling Program Summary**

MC 252 #1 Bypass 1
OCS-G-32306
Attachment 9

B. Morel / M. Hafle / B.Cocales
3/26/10

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BP-HZN-2179MDL00001757

Prospect Overview

Macondo is a moderate depth Miocene prospect in the Mississippi Canyon area. The prospect is located entirely outside of any salt body. It is located approximately 24 miles north of BP's Isabela discovery which was drilled in MC 562 during 2006. The primary target for the Macondo prospect is the M56, which was the same as Isabela. The target depth for Macondo is approximately 18,400'. The well will be drilled to a TD of 20,200' to test the older Miocene section below the targeted M56. Seismic data quality over this prospect is very good since there is no salt involved. The well will be drilled as a vertical hole from the "A" location as permitted in the approved Exploration Plan for MC 252.

Drilling Plan Summary

The Macondo well was originally drilled to 9090' with the Transocean Marianas rig to a depth of 9090 ft md/tvd and 18" liner was set at 8,983 ft md/tvd depths referenced to Marianas rig.

The Transocean Deepwater Horizon was then mobilized to finish drilling the well. The Deepwater Horizon drilled to a total depth of 12,350 ft md/tvd when lost circulation began and the 16" casing was then set off bottom at 11,585 md/tvd. The 13-5/8" interval was then drilled to 13,305 ft md/tvd where a kick was taken and the BHA became packed off and stuck and could not be removed. The BHA was severed at 12,100 ft md/tvd and well kill operations commenced.

The plan forward is to cement the original hole from 12,100 ft md/tvd up to the 16" casing shoe at 11,585 ft md/tvd so that a bypass operation can be commenced without incurring the hole problems that were in the original hole. The well will be bypassed at the 16" shoe depth and will be approximately 100 ft distance from the original well at total depth.

A 14-3/4" x 16" hole will be used to bypass and drill with SOBM to 13,100' md/tvd. After POOH, the 13-5/8" liner will be run and cemented in place with Halliburton Class-H lead and tail slurries. A Leak-off Test (LOT) will be performed after drilling out. The estimated fracture gradient is ~13.8 ppg EMW. This setting depth should give sufficient fracture gradient to achieve drilling to the next liner setting depth of 16,000 ft md/tvd.

A 12-1/4" x 14-1/2" hole will be drilled to 15,100' tvd. After POOH, the 11-7/8" liner will be run and cemented in place with Halliburton Class-H lead and tail slurries. A Leak-off Test (LOT) will be performed after drilling out. The estimated fracture gradient is ~14.6 ppg EMW. This setting depth should give sufficient fracture gradient to achieve drilling to total well depth of 17,500' md/tvd.

A 10-5/8" x 12-1/4" hole will be drilled to 17,500 ft tvd at well TD. After POOH, the 9-7/8" liner will be run and cemented in place with Halliburton Class-H lead and tail slurries. A Leak-off Test (LOT) will be performed after drilling out. The estimated fracture gradient is ~15.0 ppg EMW. This setting depth should give sufficient fracture gradient to achieve drilling to total well depth of 20,200' md/tvd.

A 8-1/2" x 9-7/8" hole will be drilled to TD at 20,200' tvd. The need for wireline evaluation of this interval will be determined by real time LWD data. A decision on the way forward will be made following evaluation of the open hole interval. The well will either be P&A'd or temporarily abandoned for future completion. Once the final evaluation program is complete, a decision will be made as to whether to sidetrack, TA well, or PA the well.

Notes:

MWD and LWD will be used in all intervals to assist with directional control, formation evaluation and pore pressure detection. Additionally, PWD will be utilized to monitor downhole static mud weights, equivalent circulating densities as well as assist in optimizing downhole hydraulics.

All intervals below the 22" casing include optional wireline evaluation programs. Execution of these evaluation programs will be based on real time LWD, paleo and pore pressure data.

During the drilling of all hole sections, the rig shall maintain a minimum inventory of 1000 sx of barite and 200 sx of gel/poly at all times.

MMS Application for Permit to Drill

**Attachment 3
Wellbore Diagram**

MC 252 #1
OCS-G-32306
Attachment 3

Brian Morel
3/26/10

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BP-HZN-2179MDL00001759

Macondo - MC252#1

MC 252 #1
OCS-G-32306
Attachment 3

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BP-HZN-2179MDL00001760

MMS Application for Permit to Drill

**Attachment 2
Pressure Profile**

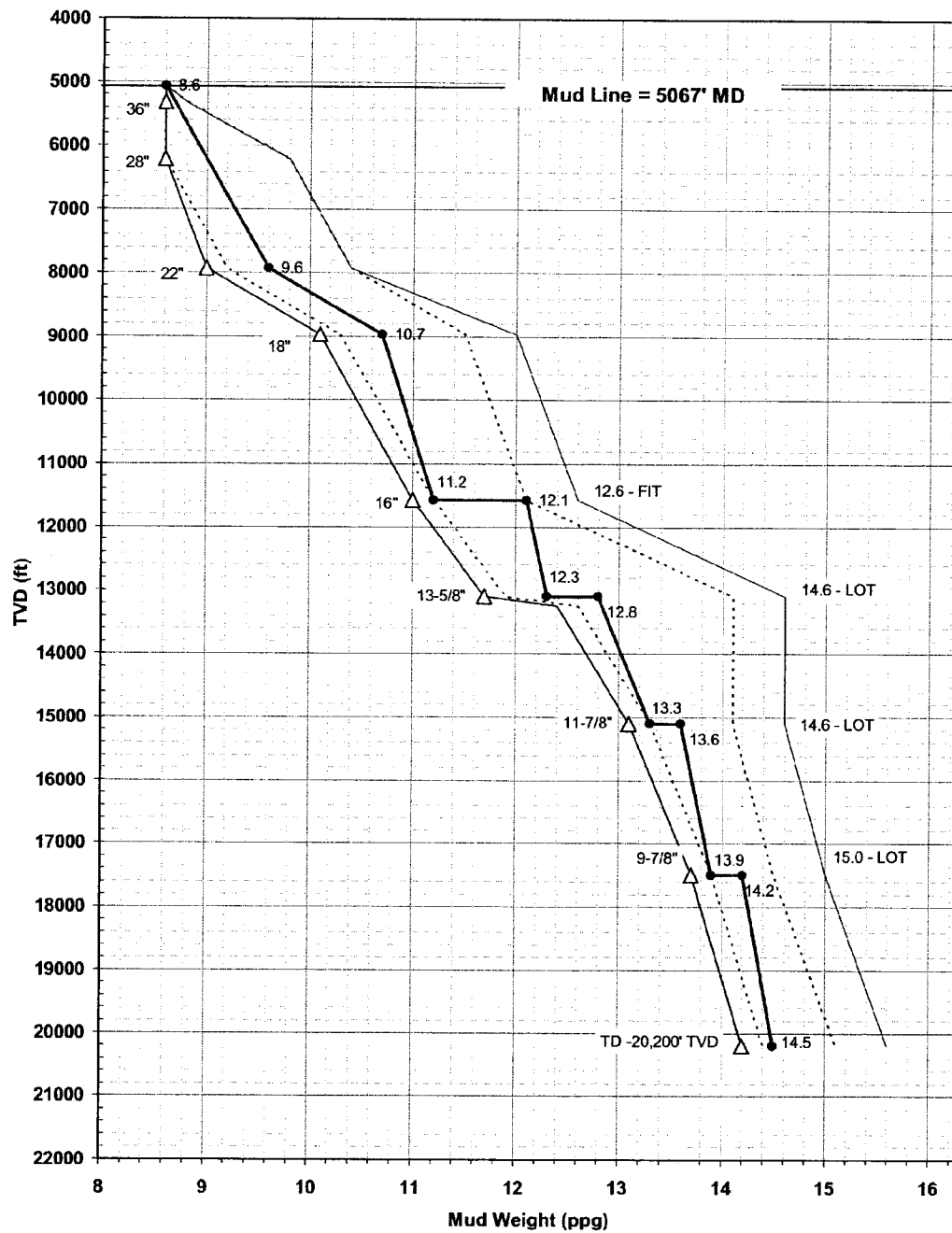
MC 252 #1
OCS-G-32306
Attachment 2

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BP-HZN-2179MDL00001761

MC 252 #1 BP01 - Macondo Prospect



MC 252 #1
OCS-G-32306
Attachment 2

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BP-HZN-2179MDL00001762

