COG Operating LLC, Nightcap 6 Federal 2H

COG Operating, LLC respectfully requests the following modifications to the approved drilling plan due to final rig selection with slight changes in anticipated formation depths and extending the lateral length to 11,968' vertical section.

1. Geologic Formations

TVD of target	9350'	Pilot hole depth	NA
MD at TD:	21470'	Deepest expected fresh water:	223'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	857'	Water	
Top of Salt	948'	Salt	
Tansill	2489'	Barren	
Yates	2599'	Oil/Gas	
Seven Rivers	2766'	Oil/Gas	
Capitan Reef	2879'	Water	Possible lost circ
Delaware Group (CC)	4359'	Oil/Gas	Possible lost circ
Bone Spring	7315'	Oil/Gas	
2nd Bone Spring Sand	9195'	Target Zone	
3rd Bone Spring Sand	10043'	Oil/Gas	

2. Casing Program

See COA

Hole Size	Casing Interval From	To	Csg. Size	Weight (lbs)	Grade	Conn.
26"	0'	925'	20"	94	J55	STC
17.5"	0'	2770'	13.375"	61	J55	STC
12.25"	0'	4380'	9.625"	40	J55	LTC
8.75"	0'	21470'	5-1/2"	17	P110	BTC

- Will set DV tool in 9-5/8" string a minimum of 50' below previous shoe or @ ~ 2820'. 2800'

AUG 20 2015

3. Cementing Program

Casing	# Sks	Wt lb/ gal	Yld ft3/ sack	H_2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf	1100	13.5	1.75	9.2	13	Lead: Class C + 4% Gel + 2% CaCl2
	500	14.8	1.34	6.4	6	Tail: Class C + 2% CaCl2
Inter. 1 13-3/8"	1300	13.5	1.75	9.2	13	Lead: Class C + 4% Gel + 1% CaCl2
	350	14.8	1.34	6.4	6	Tail: Class C + 1% CaCl2
Inter. 2 Stg 1	350	12.9	1.92	10.0	12	Lead: Class C Lite (65:35:6) + 5% Salt + 5# Kolseal
	250	14.8	1.34	6.4	6	Tail: Class C
Inter. 2 Stg 2	520	12.9	1.92	10.0	12	Lead: Class C Lite (65:35:6) + 5% Salt + 5# Kolseal
	150	14.8	1.34	6.4	6	Tail: Class C+ 1% CaCl2
Prod.	790	10.3	3.52	21.3	75	Lead: Halliburton Tuned Lite w/ 2# kolseal, 1.5# salt, 1/4# D-Air 5000, 1/8# PEF, etc
	2950	14.4	1.25	5.7	22	Tail:50:50:2 H blend (FR, Retarder, FL adds as necessary)

Production casing cement will tie in at least 50' above the top of the Capitan Reef. Planned TOC @ 2800'.

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface (20")	0'	86%
Intermediate 1 (13-3/8")	0'	40%
Intermediate 2 (9-5/8") – Stage 1	2820'	102%
Intermediate 2 (9-5/8" – Stage 2	0'	>200%
Production	2800'	42%

Pilot hole depth: NA
KOP: 8852'

4. Pressure Control Equipment

N	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Are anchors required by manufacturer? No.

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.
Will well be hydraulically fractured? Yes.

Attachments

- Directional Plan
- Flex hose certification

Technip
TECHNIP Umbilicals Inc.
COFLEXIP® Products Division

CERTIFICATE OF CONFORMITY

SUPPLIER	COFLEXIP® Products Division 16661 Jacintoport Blvd. Houston, Texas 77015
CUSTOMER	OFS CANADA INC
CUSTOMER PROJECT	OFS GLOBAL RIG 772 PROJECT 59
CONTRACT NUMBER	OFS-012060-1
COFLEXIP REFERENCE NUMBER	K12386
COFLEXIP LINE DESCRIPTION	3" x 30' 10K CHOKE/KILL LINE
COFLEXIP LINE SERIAL NUMBER	K12386-202
WORKING / TEST PRESSURE (PSI)	10000 / 15000
COFLEXIP ID (inches)/PART NUMBER	3 / 076 60414 13 13
COFLEXIP STRUCTURE NUMBER	076 60414
END FITTING REFERENCE NUMBER	EM 076 65000 13 / EM 076 65000 13
END FITTING DESCRIPTION	4 1/16" 10K FLG BX 155 INC. 625 RG / 4 1/16" 10K FLG BX 155 INC. 625 RG

IRC REFERENCE

SAFE WORKING LOADS

NOMINAL DAMAGING PULL (STRAIGHT LINE)

MINIMUM BENDING RADIUS

MAXIMUM DESIGN TEMPERATURE -4 Deg. F To 212 Deg. F/B

We certify that the supply detailed above was manufactured and inspected in accordance with the technical specifications specified within the contract referenced above and any specifications checked below. This document serves as a Declaration and Confirmation from the Manufacturer, TECHNIP Umbilicals Inc., Houston, Texas, that asbestos materials are not utilized in any part(s) or sub-part(s) or component(s) during the assembly process of any of our Coflexip® flexible pipes.

Licence Number 16C-0001 (If Required)

TECHNIP QUALITY CONTROL

4/30/15

Name/ Date/ Stamp

DQAC 084 R6 4/16/2015 Thursday, April 30, 2015 9:32:21 AM

Technip

TECHNIP Umbilicals Inc.
COFLEXIP® Products Division

Quality Control Department

Control Report Dated 4/28/2015

COFLEXIP FLEXIBLE PIPE TEST CERTIFICATE

Customer	OFS CANADA INC	**Job Number**	K12387
Address		**Line Serial Number**	K12387-202
		Part Number	076 60414 13 13

Application 3" x 30' 10K CHOKE/KILL LINE

COFLEXIP certifies that the results of the test and controls performed on the above mentioned flexible pipe is as follows:

Internal Diameter	3	inches
Length	30.83	feet
Working Pressure	10000	psi
Test Pressure	15000	psi
As per attached recorder chart Test Duration	24	hours

4-28-15

THIRD PARTY INSPECTION FIRM OR CUSTOMER REPRESENTATIVE

DUCO INC. QUALITY CONTROL

HOBBS OCD

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RECEIVED

DQAC 1124 Rev 2 18 Sept 09

Date Printed: 4/28/2015 1:49:43 PM

Test Configuration 12 Zone

HOBBS OCD

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Production Information Input

Customer ID
OFS CANADA INC.

Line S+N
X12386-202@X12387-202

Technician
RDY

QC Information Input

QC Insp
PAT

Third Party
BV

Witness?
Yes

Test Procedure
SIC 01 60

Special Instructions

Station 04

Station Information

Pressure Transducer S/N
121570

Temperature S/N
T13A

Stable Press
18500

Test Press
15000

Calib. Due
9/9/2015 8:29:12 AM

Pressure Range
0 - 30000

Calibration

Raw Minimum
0.004000

Eng Minimum
0.000000

Raw Maximum
0.020000

Eng Maximum
30000.000000