Form 3160-3 (June 2015)

JAN 09 2019

**V**/

FORM APPROVED OMB No. 1004-0137

UNITED STATE DEPARTMENT OF THE BUREAU OF LAND MAN APPLICATION FOR PERMIT TO I	INTERIO IAGEMEI	NT	ED	Expires: Ja  5. Lease Serial No. NMNM026394  6. If Indian, Allotee		
	REENTER		74.1	7. If Unit or CA Agr		
	Other Single Zone	Multiple Zone		8. Lease Name and GREEN DRAKE 10 701H 323	6 FED C	
2. Name of Operator EOG RESOURCES INCORPORATED (7377)				9. API Well No. 30 -025	- 9	7475
3a. Address 1111 Bagby Sky Lobby2 Houston TX 77002	3b. Phone (713)651	No. (include area cod -7000	le)	10. Field and Pool, o		
<ol> <li>Location of Well (Report location clearly and in accordance At surface NWSW / 2390 FSL / 627 FWL / LAT 32.12 At proposed prod. zone SWSW / 100 FSL / 330 FWL / L</li> </ol>	9904 / LON	IG -103.5837312	847029	11. Sec., T. R. M. or SEC 16 / T25S / R:		
14. Distance in miles and direction from nearest town or post of 22 miles	fice*			12. County or Parish LEA	1	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig, unit line, if any)	16. No of 2560			cing Unit dedicated to this well		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	1	sed Depth et / 19968 feet	20. BLM/ FED: NM	M/BIA Bond No. in file NM2308		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3419 feet	01/01/20	22. Approximate date work will start* 01/01/2019		23. Estimated duration 25 days		
	24. Att	achments				
The following, completed in accordance with the requirements of (as applicable)	of Onshore C	Dil and Gas Order No. 1	, and the H	Iydraulic Fracturing ru	ıle per 4	3 CFR 3162.3-3
Well plat certified by a registered surveyor.     A Drilling Plan.     A Surface Use Plan (if the location is on National Forest Syste SUPO must be filed with the appropriate Forest Service Offic		Item 20 above).  6 5. Operator certific	ation.	ns unless covered by an		`
25. Signature		ne (Printed/Typed)			Date	2040
(Electronic Submission) Title Regulatory Specialsit	Star	n Wagner / Ph: (432)	000-3089		08/16/2	:016
Approved by (Signature) (Electronic Submission)		Name ( <i>Printed/Typed</i> )  Ty Allen / Ph: (575)234-5978  Date 11/30/2018			2018	
Title Wildlife Biologist	Offi CAF	ce RLSBAD				
Application approval does not warrant or certify that the applica applicant to conduct operations thereon.  Conditions of approval, if any, are attached.	nt holds lega	l or equitable title to the	ose rights	in the subject lease wh	nich wou	ld entitle the
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, 1 of the United States any false, fictitious or fraudulent statements					ny depar	tment or agency
GCP BC 1/9/19				1/		



\*(Instructions on page 2)

(Continued on page 2)

# **INSTRUCTIONS**

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GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

#### NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 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 to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3) Approval Date: 11/30/2018

# **Additional Operator Remarks**

# **Location of Well**

1. SHL: NWSW / 2390 FSL / 627 FWL / TWSP: 25S / RANGE: 33E / SECTION: 16 / LAT: 32.129904 / LONG: -103.5837312 ( TVD: 0 feet, MD: 0 feet )

PPP: NWSW / 2540 FSL / 330 FWL / TWSP: 25S / RANGE: 33E / SECTION: 16 / LAT: 32.1303182 / LONG: -103.5846903 ( TVD: 12129 feet, MD: 12144 feet )

BHL: SWSW / 100 FSL / 330 FWL / TWSP: 25S / RANGE: 33E / SECTION: 21 / LAT: 32.1090931 / LONG: -103.5847029 ( TVD: 12394 feet, MD: 19968 feet )

# **BLM Point of Contact**

Name: Katrina Ponder Title: Geologist Phone: 5752345969

Email: kponder@blm.gov

(Form 3160-3, page 3)

**Approval Date: 11/30/2018** 

# **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

(Form 3160-3, page 4)

**Approval Date: 11/30/2018** 

# 10,000 PSI BOP Annular Variance Request

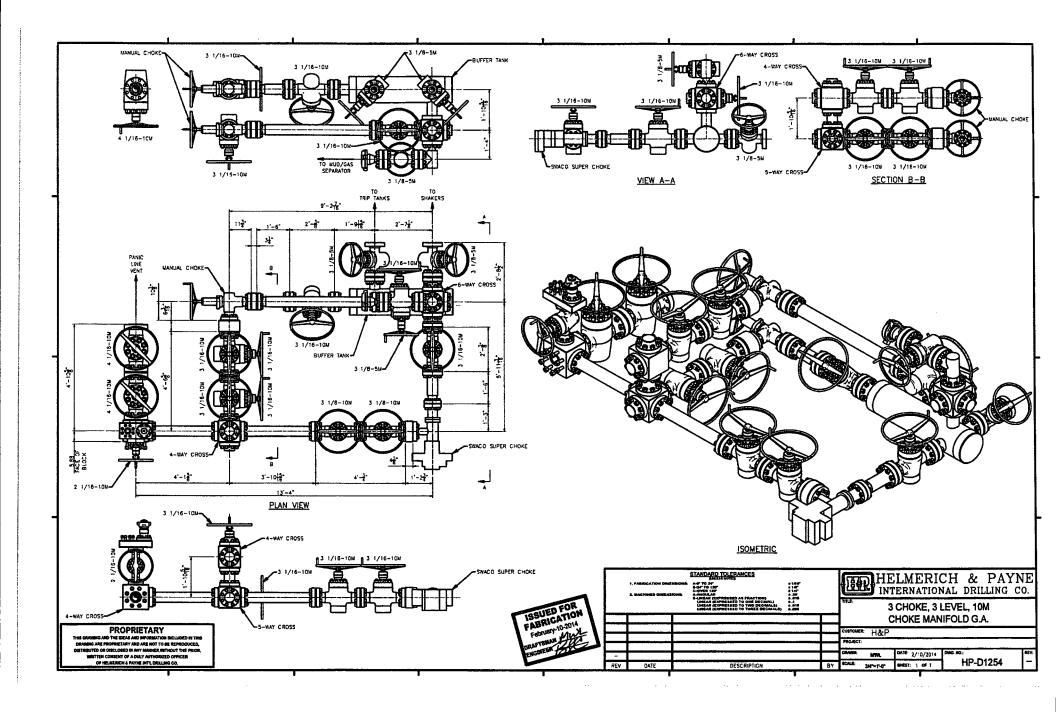
EOG Resources request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

# 1. Component and Preventer Compatibility Tables

The tables below outlines the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

	12-1/4" Intermediate Hole Section 10M psi requirement			on		
Component	OD	Primary Preventer	RWP	Alternate Preventer(s)	RWP	
Drillpipe	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M	
	4.500"			Lower 3.5 - 5.5" VBR	10M	
HWDP	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M	
	4.500"			Lower 3.5 - 5.5" VBR	10M	
Jars	6.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M	
				Lower 3.5 - 5.5" VBR	10M	
DCs and MWD tools	6.500" - 8.000"	Annular	5M	-	-	
Mud Motor	8.000" - 9.625"	Annular	5M	-	-	
1 <sup>st</sup> Intermediate casing	9.625"	Annular	5M	-	-	
Open-hole	-	Blind Rams	10M	-	_	

in the second of	-	8-3/4" Intermediate Hole Section 10M psi requirement		・	Sken, 1
Component	OD Primary Preventer RWP		Alternate Preventer(s)	RWP	
Drillpipe	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M
	4.500"			Lower 3.5 - 5.5" VBR	10M
HWDP	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M
	4.500"			Lower 3.5 - 5.5" VBR	10M
Jars	6.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
				Lower 3.5 - 5.5" VBR	10M
DCs and MWD tools	6.500" - 8.000"	Annular	5M		-
Mud Motor	6.750" - 8.000"	Annular	5M	_	-
2 <sup>nd</sup> Intermediate casing	7.625"	Annular	5M	-	-
Open-hole	-	Blind Rams	10M	-	-



Manufacturer: Midwest Hose & Specialty

Serial Number: \$N#90067

Length: 35'

Size: OD = 8" ID = 4"

Ends: Flanges Size: 4-1/16"

WP Rating: 10,000 psi Anchors required by manfacturer: No

# MIDWEST

# **HOSE AND SPECIALTY INC.**

INT	ERNAL	- HYDROST	ATIC TEST	REPOR	T				
Customer:				P.O. Numb	er:				
CACTUS RIG #123									
Asset # M10761									
		HOSE SPECI	FICATIONS						
Type: Ci	IOKE LIN	E		Length:	35'				
I.D.	4"	INCHES	O.D.	8"	INCHES				
WORKING PRE	SSURE	TEST PRESSUR	E	BURST PRES	SURE				
10,000	PSI	15,000	PSI .		PSI				
		COUP	LINGS						
Type of End 41	Fitting 1/16 10K F	LANGE							
Type of Cou SV	pling: VEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY						
		PROC	EDURE						
1		pressure tested w	1						
TO	IE MELD AT	TEST PRESSURE	ACTUAL	IURST PRESSU	RE:				
	1	AGIN.			O PSI				
COMMENTS: SN#90067 M10761 Hose is covered with stainless steel armour cover and wraped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes									
Date: 6/6	/2011	Tested By: BOBBY FINK		Approved: MENDI J	ACKSON				



# **Internal Hydrostatic Test Graph**

Customer: CACTUS

SALES ORDER# 90067

# **Hose Specifications**

Hose Type
C & K
LD.
4"
Working Pressure
10000 PSI

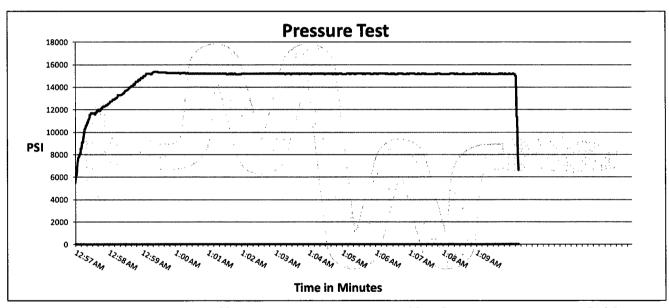
Length
35'
O.D.
8"
Burst Pressure
Standard Safety Multiplier Applies

Verification

Type of Fitting
4 1/16 10K
Die Size
6.62"
Hose Serial # Hose

Coupling Method
Swage
Final O.D.
6.68"

Hose Assembly Serial # 90067



Test Pressure 15000 PSI <u>Time Held at Test Pressure</u> 11 1/4 Minutes **Actual Burst Pressure** 

Peak Pressure 15439 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Bobby Fink

Approved By: Mendi Jackson

Filly LC

x Mendi Jackson

# **EOG Resources** 10M BOPE Rig Floor 1. 13 5/8" Rotating Head 2. Hydril 13 5/8" 10,000 PSI WP GK Annular Preventor 3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors 4. 2 1/16" - 10,000 PSI WP Check Valve (16) 1 5. 10,000 PSI WP - 1502 Union to kill line 6. 2 1/16" - 10,000 PSI WP Manual Valves 7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool 8. 4 1/16" 10,000 PSI WP HCR Valve 9. 4 1/16" 10,000 PSI WP Manual Valve 10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line 11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP 2 12. Mud Cross - 13 5/8" 10,000 PSI WP 13. Blind Rams 14. Pipe Rams 15. 13 5/8" Cameron Type "U" 10,000 PSi WP Pipe Rams **ala aa a**la 16. Flow Line 17. 2" Fill Line ብሎ ሐሐ ብብ DSA (11) $\bigcirc$

Exhibit 1

# 10,000 PSI BOP Annular Variance Request

EOG Resources request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

# 1. Component and Preventer Compatibility Tables

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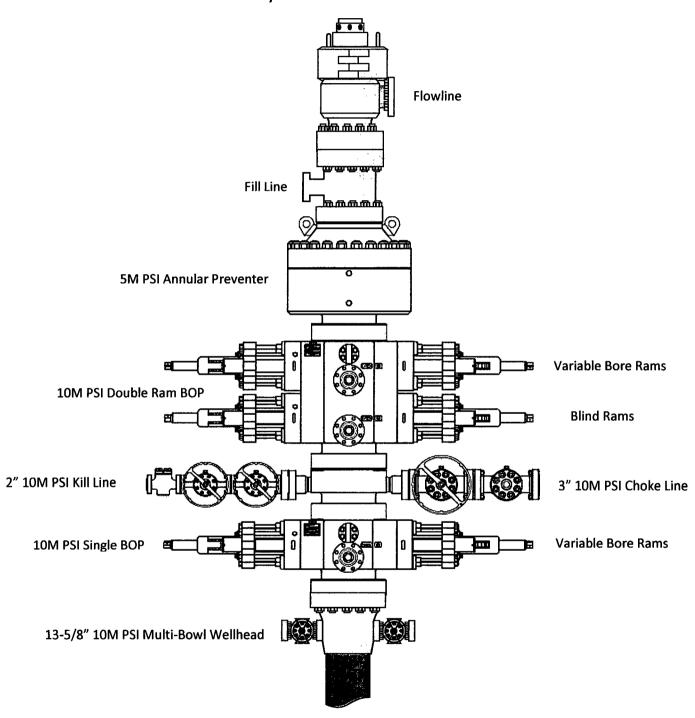
12-1/4" Intermediate Hole Section 10M psi requirement									
Component	OD	Primary Preventer	RWP	Alternate Preventer(s)	RWP				
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5 - 5.5" VBR Lower 3.5 - 5.5" VBR	10M 10M				
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5 - 5.5" VBR Lower 3.5 - 5.5" VBR	10M 10M				
Jars	6.500"	Annular	5M	Upper 3.5 - 5.5" VBR Lower 3.5 - 5.5" VBR	10M 10M				
DCs and MWD tools	6.500" - 8.000"	Annular	5M	-	-				
Mud Motor	8.000" - 9.625"	Annular	5M	-	-				
1 <sup>st</sup> Intermediate casing	9.625"	Annular	5M	-	-				
Open-hole	-	Blind Rams	10M	-	-				

8-3/4" Intermediate Hole Section 10M psi requirement									
Component	OD	<b>Primary Preventer</b>	RWP	Alternate Preventer(s)	RWP				
Drillpipe	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
	4.500"			Lower 3.5 - 5.5" VBR	10M				
HWDP	5.000" or	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
	4.500"			Lower 3.5 - 5.5" VBR	10M				
Jars	6.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
				Lower 3.5 - 5.5" VBR	10M				
DCs and MWD tools	6.500" - 8.000"	Annular	5M	-	-				
Mud Motor	6.750" - 8.000"	Annular	5M	-	-				
2 <sup>nd</sup> Intermediate casing	7.625"	Annular	5M	-	-				
Open-hole	-	Blind Rams	10M	-	-				

6-3/4" Production Hole Section 10M psi requirement									
Component	OD .	Primary Preventer	RWP	Alternate Preventer(s)	RWP				
Drillpipe	4.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
				Lower 3.5 - 5.5" VBR	10M				
HWDP	4.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
				Lower 3.5 - 5.5" VBR	10M				
DCs and MWD tools	4.750" - 5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
				Lower 3.5 - 5.5" VBR	10M				
Mud Motor	4.750" - 5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
				Lower 3.5 - 5.5" VBR	10M				
Mud Motor	5.500" - 5.750"	Annular	5M	-	-				
Production casing	5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M				
		_		Lower 3.5 - 5.5" VBR	10M				
Open-hole	-	Blind Rams	10M	-	-				

VBR = Variable Bore Ram

# EOG Resources 13-5/8" 10M PSI BOP Stack



#### 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the EOG Resources drilling supervisor's office on location, and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

# General Procedure While Drilling

- 1. Sound alarm (alert crew)
- 2. Space out drill string
- 3. Shut down pumps (stop pumps and rotary)
- 4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure While Tripping

- 1. Sound alarm (alert crew)
- 2. Stab full opening safety valve and close
- 3. Space out drill string
- 4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure While Running Production Casing

- 1. Sound alarm (alert crew)
- 2. Stab crossover and full opening safety valve and close
- 3. Space out string

- 4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure With No Pipe In Hole (Open Hole)

- 1. Sound alarm (alert crew)
- 2. Shut-in with blind rams. (HCR and choke will already be in the closed position.)
- 3. Confirm shut-in
- 4. Notify toolpusher/company representative
- 5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
- 6. Regroup and identify forward plan

# General Procedures While Pulling BHA thru Stack

- 1. PRIOR to pulling last joint of drillpipe thru the stack.
  - a. Perform flowcheck, if flowing:
  - b. Sound alarm (alert crew)
  - c. Stab full opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper variable bore rams.
  - e. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
- 2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full opening safety valve and close
  - c. Space out drill string with upset just beneath the upper variable bore rams.
  - d. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP and SICP

- ii. Pit gain
- iii. Time
- h. Regroup and identify forward plan
- 3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - c. If impossible to pick up high enough to pull the string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper variable bore ram.
  - f. Shut-in using upper variable bore ram. (HCR and choke will already be in the closed position.)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan

iletal One Corp.	MO-FX	ci	Page	MCTP	
	1110-1 7	<b>\</b>	Date	3-Nov	-16
Metal One	Connection D	ata Sheet			
			Rev.	0	
	recondity:	<u>Imperia</u>	<u>al</u>	<u>S.I.</u>	
	Pipe Body			The Property of the Section 1	
	(Sierbergeren) Pipe OD ( D )	7 5/8	in	193.68	mm
MO-FXL	Welchierenser		SOLDIES S	190.00 194.1925	
	Actual weight	29.04	0.033	43.26	kg/m
	Walls hidross (on):		SECTION S	ALANG MERCHEN	
	Pipe ID (d)	6.875	in	174.63	mm
	Literation of the contraction of	[4]   Value (5) [5] [7]   100		444 <u>-450</u> -686	
	Drift Dia.	6.750	in	171.45	mm
	Connection				
13.74 gr 77 D	Box @DigW   120		l seinsell	STATES NOTE PAR	Saladirlings.
<b>A B S S S</b>	PIN ID	6.875	in	174.63	mm
	Wedgeston 2013 sourcement.			3/0/245(5/6)	
	Fox (entireal/AVeave-sex	5 P. S. C. S. T. W. L. S. C.	15762	<10.15	
Box critica		7/0	74.5	53 Y 1 Sec ( 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
area	Thread Taper	1	/ 10 ( 1.2	rperft)	
Contractive description of the	Anasar ancade				
	7 200				
	đ				
Make 35	VIEwskielskimmere 🐇				
toss	Performance Propertie	e for Dine Rody	i		
Secretary represented the first transfer of the secretary secretar	- renormance rropertie	73 TOT PIDE DOGY			60 700 N P D P 5 TH
■ SCHOOLSF . I		, 她就是我们的时候,我们就是这个人的人的,我们就是一个人的人的人。			
	M.I.Y.P. 1	10.760	psi	74.21	MPa
Pin	MJ.Y.P.71	10,760	psi	74.21	MPa
Pin Critical area		10,760			
aritical aritical	Note S.M.Y.S.= Spe M.I.Y.P. = Min	ecified Minimum YIE nimum Internal Yiel	ELD Streng d Pressure	gth of Pipe bo	dy
critical	Note S.M.Y.S Spe M.I.Y.P Min *1 Based on VS	ecified Minimum YIE nimum Internal Yiel SB P110HC (YS=12	ELD Streng d Pressure 25~140ksi	gth of Pipe bo	dy
critical	Note S.M.Y.S.= Spe M.I.Y.P. = Min	ecified Minimum YIE nimum Internal Yiel SB P110HC (YS=12	ELD Streng d Pressure 25~140ksi	gth of Pipe bo	dy
aritical aritical	Note S.M.Y.S. Spe M.I.Y.P. Min 1 Based on VS Performance Propertie	ecified Minimum YIE nimum Internal Yiel SB P110HC (YS=12 es for Connectio	ELD Streng d Pressure 25~140ksi) on	gth of Pipe bo of Pipe body	dy
critical	Note S.M.Y.S Spe M.I.Y.P Min *1 Based on VS	ecified Minimum YIE nimum Internal Yiel SB P110HC (YS=12 es for Connectio	ELD Streng d Pressure 25~140ksi) on	gth of Pipe bo	dy
critical	Note S.M.Y.S Spe M.I.Y.P. = Min *1 Based on VS Performance Propertie Min. Compression Yield	ecified Minimum YIE nimum Internal Yiel SB P110HC (YS=12 es for Connectio	ELD Streng d Pressure 25~140ksij on 5 ( 70% o	oth of Pipe bo of Pipe body (1)	dy
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# 1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

# 2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

1,014'
1,339'
4,708'
4,956'
4,979'
5,964'
7,560'
9,101'
10,105
10,318'
10,608'
11,155'
11,807'
12,265'
12,394'

# 3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS: Upper Permian Sands 0-400' Fresh Water

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	5,964'	Oil
Brushy Canyon	7,560'	Oil
1 <sup>st</sup> Bone Spring Sand	10,105'	Oil
2 <sup>nd</sup> Bone Spring Shale	10,318'	Oil
2 <sup>nd</sup> Bone Spring Sand	10,608'	Oil
3rd Bone Spring Carb	11,155'	Oil
3 <sup>rd</sup> Bone Spring Sand	11,807'	Oil
Wolfcamp	12,265'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 1,040' and circulating cement back to surface.

# 4. CASING PROGRAM - NEW

Hole		Csg				DF <sub>min</sub>	DF <sub>min</sub>	$\mathbf{DF}_{\mathbf{min}}$
Size	Interval	OD	Weight	Grade	Conn	Collapse	Burst	Tension
17.5"	0-1,040'	13.375"	54.5#	J55	LTC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4,000' - 4,800'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0-11,300'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0' - 10,800'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	10,800'-19,968'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60

Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested for the 7-5/8" x 5-1/2" casing (minimum clearance) from the top of the cement overlap to surface.

# **Cementing Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft³/ft	Mix Water Gal/sk	Slurry Description
13-3/8"	600	13.5	1.73	9.13	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl <sub>2</sub>
1,040'					+ 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	6.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2%
					Sodium Metasilicate
9-5/8"	1780	12.7	2.20	11.64	Lead: Class C + 0.15% C-20 + 11.63 pps Salt + 0.1% C-51 +
4,800'					0.75% C-41P (TOC @ Surface)
	200	16.0	1.12	4.75	Tail: Class C + 0.13% C-20
7-5/8"	340	11.5	2.72	15.70	Lead: Class C + 0.40% D013 + 0.20% D046 + 0.10% D065 +
11,300'					0.20% D167 (TOC @ 4,300')
	210	16.0	1.12	4.74	Tail: Class H + 94.0 pps D909 + 0.25% D065 + 0.30% D167
					+ 0.02% D208 + 0.15% D800
5-1/2"	950	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 +
19,968'					0.40% C-17 (TOC @ 10,800')

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

#### 5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (10,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Variance is requested to use a 5,000 psi annular BOP with the 10,000 psi BOP stack.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 10,000/250 psig and the annular preventer to 5,000/250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/250 psig and the annular preventer to 5000/250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

# 6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,040'	Fresh - Gel	8.6-8.8	28-34	N/c
1,040' - 4,800'	Brine	10.0-10.2	28-34	N/c
4,800' – 11,300'	Oil Base	8.7-9.4	58-68	N/c - 6
11,300' – 19,968'	Oil Base	10.0-14.0	58-68	3 - 6
Lateral				

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

# 7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) H<sub>2</sub>S monitoring and detection equipment will be utilized from surface casing point to TD.

# 8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

# 9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 9022 psig (based on 14.0 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,300' to Intermediate casing point.

# 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. After WOC 8 hours or 500 psi compressive strength (whichever is greater), the Surface Rig will move off so the wellhead can be installed. A welder will cut the casing to the proper height and weld on the wellhead (both "A" and "B" sections). The weld will be tested to 1000 psi. All valves will be closed and a wellhead cap will be installed (diagram attached). If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

# 11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10,000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 10,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo FBD100 Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

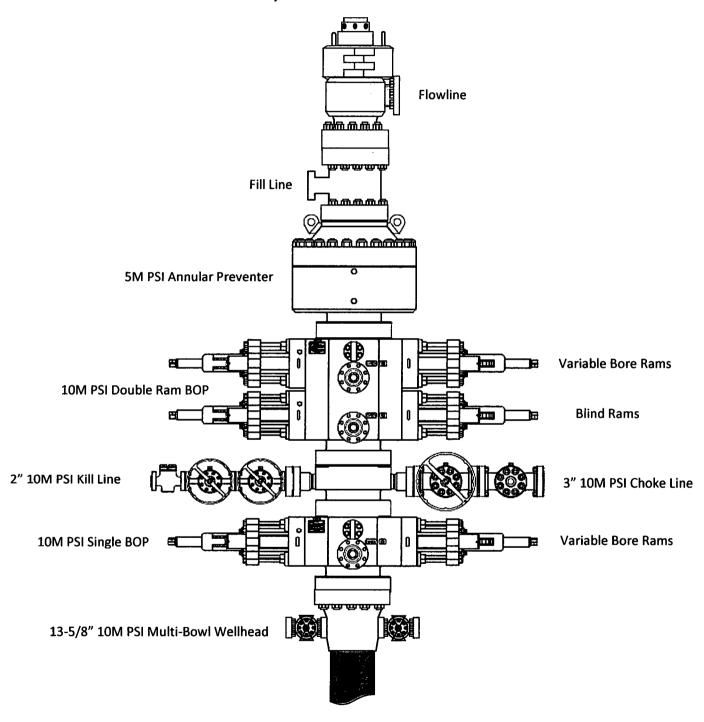
A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

6-3/4" Production Hole Section 10M psi requirement					AND THE POST OF TH
Component	OD .	Primary Preventer	RWP	Alternate Preventer(s)	RWP
Drillpipe	4.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
				Lower 3.5 - 5.5" VBR	10M
HWDP	4.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
		,		Lower 3.5 - 5.5" VBR	10M
DCs and MWD tools	4.750" - 5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
				Lower 3.5 - 5.5" VBR	10M
Mud Motor	4.750" - 5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
				Lower 3.5 - 5.5" VBR	10M
Mud Motor	5.500" - 5.750"	Annular	5M	-	-
Production casing	5.500"	Annular	5M	Upper 3.5 - 5.5" VBR	10M
				Lower 3.5 - 5.5" VBR	10M
Open-hole	-	Blind Rams	10M	-	-

VBR = Variable Bore Ram

# EOG Resources 13-5/8" 10M PSI BOP Stack



#### 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the EOG Resources drilling supervisor's office on location, and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

# General Procedure While Drilling

- 1. Sound alarm (alert crew)
- 2. Space out drill string
- 3. Shut down pumps (stop pumps and rotary)
- 4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure While Tripping

- 1. Sound alarm (alert crew)
- 2. Stab full opening safety valve and close
- 3. Space out drill string
- 4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure While Running Production Casing

- 1. Sound alarm (alert crew)
- 2. Stab crossover and full opening safety valve and close
- 3. Space out string

- 4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
- 5. Confirm shut-in
- 6. Notify toolpusher/company representative
- 7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
- 8. Regroup and identify forward plan
- 9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

# General Procedure With No Pipe In Hole (Open Hole)

- 1. Sound alarm (alert crew)
- 2. Shut-in with blind rams. (HCR and choke will already be in the closed position.)
- 3. Confirm shut-in
- 4. Notify toolpusher/company representative
- 5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
- 6. Regroup and identify forward plan

# General Procedures While Pulling BHA thru Stack

- 1. PRIOR to pulling last joint of drillpipe thru the stack.
  - a. Perform flowcheck, if flowing:
  - b. Sound alarm (alert crew)
  - c. Stab full opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper variable bore rams.
  - e. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
- 2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full opening safety valve and close
  - c. Space out drill string with upset just beneath the upper variable bore rams.
  - d. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP and SICP

- ii. Pit gain
- iii. Time
- h. Regroup and identify forward plan
- 3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - c. If impossible to pick up high enough to pull the string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper variable bore ram.
  - f. Shut-in using upper variable bore ram. (HCR and choke will already be in the closed position.)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan



U.S. Department of the interior BUREAU OF LAND MANAGEMENT

# Bond Info Data Report

# **Bond Information**

Federal/Indian APD: FED

**BLM Bond number: NM2308** 

**BIA Bond number:** 

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

**BLM reclamation bond number:** 

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: