Grom 3160-3 March 2012) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT APPLICATION FOR PERMIT TO DRILL OR REE La. Type of Work: I.a. Type of Well: I.a. Address I.a. Address 2208 West Main Street Artesia, NM 88210 I.a. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 190' FSL & 2010' FEL Unit Letter O (SWSE) Sec At proposed prod. Zone I.a. Distance in miles and direction from nearest town or post office* About 17 miles from Eunice 5. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190' 8. Distance from location* to nearest well, drilling, completed, SHL: 30' (Prop. Smalls #2H) applied for, on this lease, ft. BHL: 2333' I.a. Elevations (Show whether DF, KDB, RT, GL, etc.)	FEB 0 8 201 RECEIVED NTER mgle Zone Multiple 7 20 <i>de</i>) 3-6940 c. 28.T22S.R34E 2.00 acres in lease 960 poposed Depth	5. Lease S 6. If India 7. If Unit 8. Lease 9. API We 70- 10. Field a WC-0 11. Sec., T BH0 12. Count Lease 17. Spacing Unit deal	FORM APPROVED OMB No. 1004-0137 Expires October 31, 2014 Serial No. NMNM116047 n, Allotee or Tribe Name or CA Agreement, Name and No. Name and Well No. Smalls Federal #6H Smalls		
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1. Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Ap	D: 10,290' MD: 14.841'	NMBC	000740 &NMB000215		
	proximate date work will st	art*	23. Estimated duration		
3405.7' GL	12/1/2015) 	30 days		
24. Attach	ments				
 Well plat certified by a registered surveyor. A Drilling Plan A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). 	Bond to cover the operation Item 20 above). Operator certification Such other site specific infor authorized officer.	ns unless covered by	an existing bond on file (see s as may be required by the		
5. Signature Name (Printed/Typed	i) Mavte Reves		Date 7-22-15		
itle Regulatory Applyst			L		
pproved by (Signature) /S/ STEPHEN J. CAFFEY	1)		Date FJAN 2 9 2016		
FOR FIELD MANAGER	CARLSBAD FI	ELD OFFIC	E		
pplication approval does not warrant or certify that the applicant holds legan or equitable to onduct operations theron. onditions of approval, if any, are attached.	title to those rights in the su APPROVAL FOR	TWO YEAR	buld entitle the applicant to S		
tle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person are sany false, fictitious or fraudulent statements or representations as to any matter with	knowingly and willfully to m in its jurisdiction.	nake to any departme	ent or agency of the United		
APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS	SEE ATTAC CONDITIO	CHED FOI NS OF AP Vitness Surfa	*(Instructions on page 2 PROVAL		
Capitan Controlled V	Nater Basin	termediate Ĉ	asing		

NS_CD FTG_EW EW_CD TVD_DEPTH COMPL_STAT	S 1980 E 3840 Plugged	N 2310 W 13530 Plugged	N 1650 E 15100 Active	S 660 W 13450 Active	S 1620 W 14682 Active	N 1980 W 14660 Active	S 1830 W 8600 Active	0 M 166 N	S 375 W 12600 New (Not drilled or compl)	S 1500 W 0 New (Not drilled or compl)	s 1450 W D Naw (Not drillad or compl)
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WELL_NAME	FALSE FEDERAL 001	ANTELOPE FEDERAL COM 001	GAUCHO UNIT 001	GAUCHO 21 FEDERAL 001	RIO BLANCO 33 FEDERAL 001	RIO BLANCO 33 FEDERAL 002	RIO BLANCO 33 FEDERAL 003	FEDERAL 28 011D	GAUCHO 21 FEDERAL 002H	GAUCHO 21 FEDERAL 004H	GALICHO 21 FEDERAL DO3H
OPERATOR	BELCO PETROLEUM COR	ORYX ENERGY CO	DEVON ENERGY PRODUCTION COMPANY, LP	PETROGULF CORPORATION	DEVON ENERGY PRODUCTION COMPANY, LP	DEVON ENERGY PRODUCTION COMPANY, LP	DEVON ENERGY PRODUCTION COMPANY 1P				
FID Shape *	0 Point	1 Point	2 Point	3 Point	4 Point	5 Point	6 Point	7 Point	8 Point	9 Point	10 Point

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COG Operating LLC, Smalls Federal 6H

1. Geologic Formations

TVD of target	10290'	Pilot hole depth	NA
MD at TD:	14841'	Deepest expected fresh water:	605'

Basin

Formation	Depth (TVD)	Water/Mineral Bearing/	Hazards*
	from KB	Target Zone?	
Quaternary Fill	Surface	Water	
Rustler	1857'	Water	
Top of Salt	2137'	Salt	
Tansill	3639'	Barren	
Yates	3710'	Oil/Gas	
Capitan Reef	4014'	Water	Possible lost circ
Delaware Group	5211'	Oil/Gas	Possible lost circ
Bone Spring	8507'	Oil/Gas	
2 nd Bone Spring Sand	10036'	Target Zone	
Wolfcamp	11208'	Oil/Gas	Will not penetrate

2. Casing Program

e Con

Hole Size	<u>Casing</u> From	<u>t Interval</u> To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SE Burst	SF Tension
17.5"	0'	2130'1980'	13.375"	54.5	J55	STC	1.21	1.05	4.76
12.25"	0'	52505500	9.625"	40	L80	BTC	1.19	1.18	4.16
8.75"	0'	14841'	5-1/2"	17	P110	LTC	1.54	2.19	1.76D
				BLM Min	imum Safet	y Factor	1.125	1.00	1.6 Dry
									1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
- BLM standard formulas were used on all SF calculations.
- Used 9.1 PPG for pore pressure calculations.
- Will set DV tool within 100' of the top of the Capitan Reef. Estimated setting depth is 3915'.

COG Operating LLC, Smalls Federal 6H

	Y or N					
Is casing new? If used, attach certification as required in Onshore Order #1						
Does casing meet API specifications? If no, attach casing specification sheet.						
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N					
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).						
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?						
Is well located within Canitan Reef?	V					
If you does production assing compart tip back a minimum of 50' above the Boof?						
Is well within the designated 4 string boundary						
15 went within the designated 4 string boundary.						
Is well located in SOPA but not in R-111-P?						
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?						
Is well located in R-111-P and SOPA?						
If yes, are the first three strings cemented to surface?						
Is 2 nd string set 100' to 600' below the base of salt?						
Is well located in high Cave/Karst?						
If yes, are there two strings cemented to surface?						
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?						
Is well located in critical Cave/Karst?						
If yes are three strings cemented to surface?						
in yes, are more and sumgs comented to surface.						

2. Cementing Program

Casing	# Sks	Wt. lb/ gal*	Yld ft3/ ŝack	H ₂ 0 gal/sk	500# Comp: Strength (hours)	Slurry Description
Surf.	860	13.5	1.75	9.2	13	Lead: Class C + 4% Gel + 2% CaCl2
	275	14.8	1.34	6.4	6	Tail: Class C + 2% CaCl2
Inter.	265	12.9	1.92	10.0	12	Lead: Class C Lite (65:35:6) + 4% Salt + 5# Kolseal
Stg 1	200	14.8	1.34	6.4	6	Tail: Class C
Inter.	945	12.9	1.92	10.0	12	Lead: Class C Lite (65:35:6) + 4% Salt + 5# Kolseal
Stg 2	200	14.8	1.34	6.4	6	Tail: Class C
Prod.	950	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
	1220	14.4	1.25	5.7	22	Tail:50:50:2 H blend (FR, Retarder, FL adds as necessary)

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

COG Operating LLC, Smalls Federal 6H

Casing String	TOC	% Excess
Surface	0'	36%
Intermediate – Stage 1	3915'	53%
Intermediate – Stage 2	0'	124%
Production	0'	39%

Pilot hole depth: <u>NA</u> KOP: <u>9813'</u>

4. Pressure Control Equipment

	BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type		Tested to:
•				Annular	x	50% of working pressure
\mathcal{A}		13-5/8"	2М	Blind Ram		
not l	12-1/4"			Pipe Ram		214
				Double Ram		2 IVI
C				Other*		
			3M	Annular	x	50% testing pressure
				Blind Ram		
	8-3/4"	13-5/8"		Pipe Ram		
				Double Ram	x	3M
ĺ				Other *		

* Actual equipment is 13-5/8" 5M Hydril Annular, will use for 2M WP System.

** - Actual equipment is 13-5/8" 5M Hydril Annular & 13-5/8" 10M Cameron triple ram, will use for 3M WP System.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.