

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
OCD HobbsFORM APPROVED
OMB NO. 1004-0137
Expires January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMNM116047

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

COG PRODUCTION LLC

Contact: DANA KING

E-Mail: dking@concho.com

3a. Address

2208 W MAIN STREET
ARTESIA, NM 88210

3b. Phone No. (include area code)

Ph: 432-818-2267

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 28 T22S R34E SWSE 190FSL 1980FEL

8. Well Name and No.

SMALLS FEDERAL 2H

9. API Well No.

30-025-43064-00-X1

10. Field and Pool or Exploratory Area

WC025G06S223421L-BONE SPRING

11. County or Parish, State

LEA COUNTY, NM

FEB 15 2018

RECEIVED

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

WELLS IN THIS AREA HAVE SUGAR SAND BETWEEN BOTTOM OF SALT AND TOP OF YATES. COG OPERATING LLC RESPECTFULLY REQUESTS PERMISSION TO ADD 11.75# 47# J-55 BTC SET AT 3750' TO CASE THE SUGAR SAND OFF. THIS WILL REQUIRE INCREASING SURFACE CASING SIZE TO 16" 75# J-55 BTC SET AT 2130'. THIS WILL ALSO REQUIRE DECREASING THE SUBSEQUENT CASING TO 8 5/8" 32# HCL-80 BTC @ 5250' (WITH DV/ECP @ 3915').

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #401640 verified by the BLM Well Information System	
For COG PRODUCTION LLC, sent to the Hobbs	
Committed to AFMSS for processing by PRISCILLA PEREZ on 01/28/2018 (18PP0495SE)	
Name (Printed/Typed) DANA KING	Title SUBMITTING CONTACT
Signature (Electronic Submission)	Date 01/19/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>MUSTAFA HAQUE</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>02/08/2018</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		
Office Hobbs		

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****



Smalls Federal #2H

Proposed WBD

API: 300254306400

3rd Bone Spring Sand

Lat/Long (NAD 27): 32.355817/-103.472414

Lea County, NM

Rig: Scandrell Quest

Cmt: Par 5/Hilbtrn*

Casing: Sooner

Mud: Nova

Dir Drlg: VON

Wellhead: Downing

Float Equip: Antelope*

AFE @ Rig Rls: \$2,804,000

AFE Days: 24

SHL

Sec. 28 - T22S - R34E

190' FSL

1980' FEL

BHL

Sec. 28 - T22S - R34E

330' FNL

1980' FEL

RKB: 30'
KB: 3435.7'
GL: 3405.7'

DIRECTIONS: From intersection of Delaware Basin Rd and Highway 128; go N on Delaware Basin Rd 9 miles to a sharp right turn. Turn E (right) and continue on Delaware Basin Rd 1.5 miles to a caliche lease road on left. Turn N (left), go 2.0 miles to new road on right. Turn E (right), go 0.6 miles to location

Downing Wellheads:
11" 5M x 7-1/16" 10M Tbg Spl
13-5/8" 3M x 11" 5M Csg Spl
16-3/4" 3M x 13-5/8" 5M Csg Spl
16" SOW x 16-3/4" 3M Csg Hd

Rustler @ 2417'

TOS @ 2680'

BOS @ 3639'

Yates @ 3710'

Seven Rivers @ 3845'

Capitan Reef @ 4014'

BLCN @ 5211'

CYCN @ 5902'

BYCN @ 7105'

BSGL @ 8507'

U Avalon @ 8799'

L Avalon @ 9040'

FBSG @ 9570'

TBSG @ 10931'

KOP @ 10443'

WFMP @ 11208'

STRN @ 11723'

3750' MD &
3750' TVD

DV/ECP @
3915'

5250' MD &
5250' TVD

30" Conductor @ 120'

Bit Size: 20"

PAR 5/Antelope

16" 75# J-55 BTC @ 2130'

Bit Size: 14.75"

PAR 5/Antelope

11.75" 47# J-55 BTC @ 3750'

Bit Size: 10.625"

Halliburton Cement

Weatherford DV/ECP

10' element at 3915'

Secondary Baffle Below ECP

8 5/8" 32# HCL-80 BTC @ 5250'

Bit Size: 7.875"

5.5" 20# HCP-110 BTC @ 15563'

MJ 100' above KOP

NCS Floation Collar @ KOP

Centralize per Onshore Order 2.III.B.1.F

Cement details required to be
on location prior to mix for every job

Surface Mud

FW Spud Mud

8.4 - 9.6 ppg

FV: 40

PV: 18-20

Intermd 1 Mud

Saturated Brine

10 ppg

FV: 28-30

PV: NC

Intermd 2 Mud

Cut Brine

8.6 - 9.6 ppg

FV: 28-30

PV: NC

Prod Mud

FW / Cut Brine

12.0 - 13.5 ppg

FV: 45-60

VS:4756'

Wet Shoe

Cement Information

Slurry	Wt	Sacks	Yield	% Excess	TOC
Surface Cement					
Lead	13.50 ppg	1750 sx	1.75 cu ft/sx	105%	0'
Tail	14.80 ppg	450 sx	1.36 cu ft/sx	105%	1780'
Intermediate 1 Stage 1 Cement					
Lead	13.50 ppg	1550 sx	1.75 cu ft/sx	71%	0'
Tail	14.80 ppg	250 sx	1.36 cu ft/sx	78%	3,350'
Intermediate 2 Stage 1 Cement					
Lead	12.90 ppg	700 sx	1.89 cu ft/sx	650%	3,915'
Tail	14.80 ppg	250 sx	1.36 cu ft/sx	195%	4,750'
Intermediate 2 Stage 2 Cement					
Lead	13.50 ppg	750 sx	1.75 cu ft/sx	48%	0'
Tail	14.80 ppg	200 sx	1.35 cu ft/sx	156%	3,415'
Production Cement					
Lead	11.00 ppg	1000 sx	2.80 cu ft/sx	85%	0'
Tail	13.20 ppg	950 sx	1.46 cu ft/sx	10%	8,500'

EOC @ 11443' MD

11080' TVD

90° INC

359.63° AZM

SHC to Gyro at 5250' Csg Pt

Halliburton/Antelope/NCS

15563' MD &

11080' TVD

CUB: 1/14/2018

Directional Plan

	MD	TVD	BUR	INC	AZI
KOP	10,443'	10,443'	9°/100ft	0.00°	0.00°
EOC	11,443'	11,080'		90.00°	359.63°
TD	15,563'	11,080'		90.00°	359.63°



API 5CT Casing Performance Data Sheet

Manufactured to specifications of API 5CT 9th edition and bears the API monogram.
Designed for enhanced performance through increased collapse resistance.

Grade	L80HC
-------	-------

Pipe Body Mechanical Properties

Minimum Yield Strength	80,000 psi
Maximum Yield Strength	95,000 psi
Minimum Tensile Strength	95,000 psi
Maximum Hardness	23.0 HRC

Sizes

OD	8 5/8 in
Nominal Wall Thickness	0.352 in
Nominal Weight, T&C	32 lb/ft
Nominal Weight, PE	31.13 lb/ft
Nominal ID	7.921 in
Standard Drift	7.796 in
Alternate Drift	7.875 in

Minimum Performance

Collapse Pressure	3,820 psi
Internal Pressure Yield	5,710 psi
Pipe body Tension Yield	732,000 lbs
Internal pressure leak resistance STC/LTC connections	10,380 psi
Internal pressure leak resistance BTC connections	11,230 psi

Inspection and Testing

Visual	OD Longitudinal and independent 3rd party SEA
NDT	Independent 3rd party full body EMI after hydrotest Calibration notch sensitivity: 10% of specified wall thickness

Color code

Pipe ends	One red, one brown and one blue band
Couplings	Red with one brown band

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating, LLC.
LEASE NO.:	NMMN-116047
WELL NAME & NO.:	Smalls Federal 2H
SURFACE HOLE FOOTAGE:	0190' FSL & 1980' FEL
BOTTOM HOLE FOOTAGE:	0330' FNL & 1980' FEL
LOCATION:	Section 28, T. 22 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico

Potash	<input checked="" type="radio"/> None	<input checked="" type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input checked="" type="radio"/> Medium	<input checked="" type="radio"/> High
Variance	<input checked="" type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input checked="" type="radio"/> Other
Wellhead	<input checked="" type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	
Other	<input type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

All previous COAs still apply except for the following:

A. CASING

1. The 16 inch surface casing shall be set at approximately **2130** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **11 3/4** inch first intermediate casing, which shall be set at approximately **3750** feet, is:

- Cement to surface. If cement does not circulate see A.1.a, c-d above.

3. The minimum required fill of cement behind the **8 5/8** inch second intermediate casing is:

Option 1:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

Option 2:

Operator has proposed DV tool at depth of 3915', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**
4. The minimum required fill of cement behind the **5 1/2** inch production casing is:
 - Cement should tie-back at least **50** feet above the Capitan Reef (Top of Capitan Reef estimated at 4014 feet). Operator shall provide method of verification.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8 5/8** inch second intermediate casing shoe shall be **10,000 (10M)** psi.

A 5M Annular variance sundry along with well control plan must be submitted in order to use a 5M Annular on a 10M BOP stack.

MHH 02072018

GENERAL REQUIREMENTS

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.