Form 3160-5 (June 2015)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS 27,2018

not use this form for proposals to drill or to re-enter an

HOBBS OCD

FORM APPROVED OMB NO. 1004-0137

Expires: January 31, 2018

5. Lease Serial No. NMLC069515

6. If Indian, Allottee or Tribe Name

00/10/11	TO HOLD AND INLI O	1.10 011 112	enter an				
Do not use thi abandoned wel	is form for proposals to II. Use form 3160-3 (AP	drill or to re- D) for such p	RECEIV	ED	6. If Indian, Allottee of	or Tribe	e Name
	TRIPLICATE - Other ins	tructions on	page 2	•	7. If Unit or CA/Agre		
1. Type of Well				ield (Multiple—See Atta	ached	30-005-4334
☐ Oil Well ☐ Gas Well ☐ Oth 2. Name of Operator		JEREMY LEE		Hobb	9. API Well No.		1354
CONOCOPHILLIPS COMPAN		_ee@cop.com			MultipleSee A		
3a. Address MIDLAND, TX 79710		3b. Phone No. Ph: 832-48	(include area code) 6-2510		10. Field and Pool or MultipleSee A		
4. Location of Well (Footage, Sec., T.	, R., M., or Survey Description)			11. County or Parish,	State	
MultipleSee Attached					LEA COUNTY,	NM	
12. CHECK THE AF	PPROPRIATE BOX(ES)	TO INDICA	ΓE NATURE O	F NOTICE,	REPORT, OR OTI	HER I	DATA
TYPE OF SUBMISSION			TYPE OF	ACTION			
Nation of Indone	☐ Acidize	☐ Dee	pen	☐ Product	ion (Start/Resume)		Water Shut-Off
☑ Notice of Intent	☐ Alter Casing	☐ Hyd	raulic Fracturing	☐ Reclam	ation		Well Integrity
☐ Subsequent Report	☐ Casing Repair	□ New	Construction	☐ Recomp	ıplete		Other
☐ Final Abandonment Notice	☐ Change Plans	Plug	and Abandon	□ Tempor	arily Abandon		ange to Original A
	Alter Casing						
If the proposal is to deepen directional Attach the Bond under which the wor following completion of the involved testing has been completed. Final Abdetermined that the site is ready for fit ConocoPhillips request the following Zia Hills 25E Fed Com 401H A Change in target depth Change in cementing program For changes see attached one Zia Hills 25E Fed Com 402H A Change in cementing program For changes see attached one Zia Hills 25E Fed Com 403H A Zia Hills 25E Fed Com 403H A	ally or recomplete horizontally, it will be performed or provide operations. If the operation repandoment Notices must be filinal inspection. Illowing changes to our place of the second of the seco	give subsurface the Bond No. or sults in a multipl led only after all ans:	locations and measurifile with BLM/BIA e completion or recorequirements, including	red and true ve . Required sul mpletion in a r ing reclamation	ertical depths of all pertinosequent reports must be new interval, a Form 316	nent ma e filed v 50-4 m and the	arkers and zones. within 30 days ust be filed once c operator has
14. I hereby certify that the foregoing is Com Name (Printed/Typed) JEREMY I	#Electronic Submission For CONOCO TIME TO AFMSS FOR PROC	PHILLIPS CO	MPÅNY, sent to t SCILLA PEREZ or	he Hobbs n 06/11/2018	•		1
Signature (Electronic S			Date 06/05/20	· · · · · · · · · · · · · · · · · · ·			
	THIS SPACE FO	OR FEDERA	L OR STATE	OFFICE U	SE		
Approved By ZOTA STEVENS			TitlePETROLE	UM ENGINI	EER		Date 06/19/2018

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.

Approved By ZQTA STEVENS

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

Additional data for EC transaction #422699 that would not fit on the form

Wells/Facilities, continued

Agreement	Lease	Well/Fac Name, Number	API Number	Location
NMLC069515	NMLC069515	ZIA HILLS 25E FED COM 401H	30-025-42560-00-X1	Sec 25 T26S R32E NWNE 250FNL 2310FEL- 32.011286 N Lat, 103.373820 W Lon
NMLC069515	NMLC069515	ZIA HILLS 25E FED COM 402H	30-025-43364-00-X1	Sec 25 T26S R32E NWNE 283FNL 2310FEL 32.011253 N Lat, 103.373820 W Lon
NMLC069515	NMLC069515	ZIA HILLS 25E FED COM 403H	30-025-43377-00-X1	Sec 25 T25S R32E NWNE 316FNL 2310FEL 32.011220 N Lat, 103.373820 W Lon
NWILCOB9515	NIMI CO89516	ZIA HILLS 25E FED COM 404H	30-025-43363-00-X1	Sec 25 T26S R32E NWNE 349FNL 2310FEL 32.011188 N Lat. 103.373820 W Lon

10. Field and Pool, continued

WILDCAT; WOLFCAMP

32. Additional remarks, continued

Change in cementing programs
For changes see attached one-page summary for this well

Change in conting programs
For changes see attached one-page summary for this well

Per our conversation with Z.Stevens set surface casing at least 25' into the Rustler

Thank you.

Version: 1 ConocoPhillips Prepared by: M. Smith 1280 Extended Reach Single Lateral WELL: Zia Hills 25E Fed Com 404H COUNTY, STATE: Lea, Co, NM AFE: WAF.OND. Drilling Network No.: Invoice Handler ID: VENNECP API No.: BLM Permit: SURFACE LOC: NWNE 25-T26S-R32E 349' FNL 2310' FEL COST ESTIMATE DRILLING BH LOC: SENW 36-T26S-R32E 50' FSL 3300' FEL **ELEVATIONS:** 3.134.0 WH Coord.: 11.43" N COMPLETION (NAD-27) LON 103° 37' 36.51" W **FACILITIES** TOTAL 14-3/4" X 11-3/4" FORMATION TOP: TVD SUBSEA **Notes** Ensure proper notifications are made to BLM Quaternary Fill Fresh Wate 300 567 300 567 Fresh Wate A) Spud Notice - 24 hours before spud B) Running / Cementing all strings of casing - 4 hours Base of Fresh Water 300 2,594 Rustler Surface Casing 775 775 2.387 C) BOP Tests - 4 hours Top of Salt / Salado Tests to be completed according to Onshore Order 2. 982 982 2 179 Salt A) 10 min high/low tests 3) H2S equipment will be rigged up and functional, 500' before Delaware formation. If H2S is encountered. Onshore Order 6 along with Conocophillips H2S plan will be followed. Castille 2.877 2 877 284 Salt Delaware Base of Salt 4,607 4,621 (1,446)Gas / Oil Ford Shale 5,022 5.038 (1,861) Gas / Oil 5.627 5.651 (2,466)Gas / Oil Cherry Canyon 7,277 7,316 8,699 (4,116) (5,486) Gas / Oil 8,647 Gas / Oil Bone Springs (6,900) (7,280) Bone Springs 2nd Carb 10.061 10.130 Gas / Oil 10,441 10,634 Bone Springs 2nd Sand 10 5/8" X 8 5/8" ACO PIETO NES ANTRO REOLOSIT 7 7/8" X 5-1/2" CONTACTS Office Cell 281-206-5199 432-269-6432 Drilling Engineer: Matt Smith 11,018 (7,370)8 5/8 in. shoe 4788' MD 4737' TVD TARGET 10,531 Gas / Oil Formation Dip Rate est > 90° dip PBTD 10,531 11,018 (7,370) Geologist: Josh Day 281-206-5620 423-512-0347 Gas / Oil Onsite Drilling Rep.: Greg Rivera 432-234-9399 Dennis Hously 432-688-9065 432-230-8010 Drilling Supt.: Scott Nicholson Estimated BH Static Temperature (°F) 199 Max, Anticipated BH Pressure: 0.550 psi/ft 6,792 psi Max Anticipated Surface Press DRILLING FLUID: ΥP LGS NaCl Type interval Density Vis PV рH FL Remarks (MD) Surface - 775' % by vo < 5.0 ppb sol 10,000 **PP9** 8.6 28-50 mL NC Fresh Water Rig Tanks/Closed Loop Surface 1-5 2-6 Intermediate Brine 775' - 4788' 10 28-50 1-5 2-6 7.5-8.5 NC < 5.0 180,000 Rig Tanks/Closed Loop 4788' - 17710' Production Cut Brine 92 50-70 18-25 R-14 9.5-10 < 8 < 8.0 400 - 00 Rig Tanks/Closed Loop Reference Drilling Fluids Program TOP (MD) BTM (MD) Size Length <u>Wt</u> 47.00 Grade Connection 14 3/4 Surface 74R' 11 3/4 J-55 BTC Minimum - COP Class 3 Well Control Requirements 13-5/8"x10M psi Rams / 4-1/16"x10M psi Manifold Rig -Stackup - Rotating Head, Annular Preventer, 4.788 BTC Intermediate 10 5/8 27 4.761 8 5/8 32.00 P-110 Pipe Ram, Blind Ram, Mud Cross (Choke & Kill Valves), 27 17,710 17,683 5 1/2 TXF Production 7 7/8 23.00 P-110 CENTRALIZATION: Surface Casing: 1 per joint on first 3 joints Shoe joint, 1 per joint where DLS >0.6 */100* Float Based Electronic PVT with Flow Sensor and Gravity Trip Tank, Alarms +/- 10 BBLS roduction Liner: Rigid body, 1 every other joint from TD to estimated TOC, 1 every 4 joints above TOC 13-5/8" x 10M psi (Casing Head - "A" Section) CEMENT: COMMENTS Cemented to surface w/ 200%XS Hole MD TVD 775' Spacer Lead Tail 420 sx Class C+ adds 14.8 ppg 1.33 ft3/sk 340 sx Class C adds Surface: 14-3/4"X11-3/4" 210 sx Class C + adds 12 ppg 2.414ft3/sk Add FiberBlock 300 sx TXI Lite Weight + adds 11.5 ppg 4.038 ft3/sk Cemented to surface w/ 70%L / 30%T XS calc'd on 10.625" hole Intermediate: 10-5/8"X8-5/8" 4.788 4,737 40 bbl Spacer 14.8 ppg 1.328 ft3/sk Add FiberBlock 242 sk TXI Lite Weight + adds 10.5 ppg 4.034ft3/sk Production: 7-7/8"X5-1/2" 17,710 10,531 40 bbl OBM spacer Cemented 500' above int Casing 550.5145 sx Class C + adds 14.4 ppg 1.217ft3/sk Depth 10% XS calc'd on 7.875 Reference Cementing Recommendation DIRECTIONAL PLAN: MD <u>NS</u> (ft) <u>DLS</u> ("/100") SEC-T-R Section Line Distance (ft) (deg) (deg) 0 (ft) 1.000° (ft) (ft) Build @ 1.5°/100 25-T26S-R32E 349' FNL 2310' FEL 9 Ô 0 1.5 0 End Build @ 7* Intermediate Casing 1,489 4,788 -30 -435 25-T26S-R32E 340' FNL 223' FNL 286 1,488 2340' FEL 286 4,737 126 0.0 -130 25-T26S-R32E 2745' FEL KOP , Build @ 8*/100 -992 -296 25-T26S-R32E 61' FNL 3302 FEL 25-T26S-R32E Landing Point 11.003 90 180 10.531 -427 -987 421 776' FNL 3297' FEL Toe Sleeve 2 17,380 180 10,531 -6804 -940 36-T26S-R32E 380' FSL 3300' FEL FTP / Toe Sleeve 17.430 90 180 10.531 -6854 -940 6.848 36-T26S-R32E 330' FSL 3300' FEL PBHL/TD 17,710 -7134 36-T26S-R32E 3300' FEL Reference Directional Plan MWD Surveys will be taken at 90' interval beio , 30' while building curve, and every 90' while drilling lateral FORMATION EVALUATION Mud Logging -One-Man First surface hole to TD. First intermediate hole to TD. Mud Logging -Two-Man: Intermediate Casing Point to TD Open Hole -PEX None GR/CBL/USIT Cased Hole -None MWD -GR Surface Casing Shoe to TD OUR WORK IS NEVER SO URGENT OR IMPORTANT THAT WE CANNOT TAKE THE TIME TO DO IT SAFELY!

WELL PLAN SUMMARY

Date: Jun 05, 2018

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: | CONOCOPHILLIPS COMPANY

LEASE NO.: NMLC069515

WELL NAME & NO.: | ZIA HILLS 25E FED COM 404H

SURFACE HOLE FOOTAGE: | 349' FNL & 2310' FEL

BOTTOM HOLE FOOTAGE | 50' FSL & 3300' FEL; Sec. 36

LOCATION: Section 25, T. 26 S., R 32 E., NMPM

COUNTY: Lea County, New Mexico

 \mathbf{COA}

All pervious COA still apply expect the following:

H2S	← Yes	↑ No	
Potash	© None	^C Secretary	← R-111-P
Cave/Karst Potential	€ Low	∩ Medium	↑ High
Variance	None	Flex Hose	Other
Wellhead	Conventional	• Multibowl	○ Both
Other	☐ 4 String Area	Capitan Reef	□ WIPP

A. Hydrogen Sulfide

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

- 1. The 11 3/4 inch surface casing shall be set at approximately 775 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.
- 2. The minimum required fill of cement behind the 8 5/8 inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

C. 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 3000 (3M) psi.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)
 - Chaves and Roosevelt Counties
 Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
 During office hours call (575) 627-0272.
 After office hours call (575)
 - Eddy County
 Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
 - ✓ Lea CountyCall the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)393-3612

- 1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
- 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

- 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 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: The flex line must meet the requirements of API 16C. 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. 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.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
- 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
 - 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. 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.
- f. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 061918

11 3/4 surface csg in a 14 3/			143/4	inch hole.		<u>Design F</u>	actors SURF		ACE
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	Weight
¶ "A"	47.00	J	55	BUTT	20.23	4.36	1.23	775	36,425
"B"	Ž					ga 4.Skg		0	0
w/8.4#/g n	nud, 30min Si	fc Csg Test psig:	1,500	Tail Cmt	does	circ to sfc.	Totals:	775	36,425
Comparison of	Proposed	to Minimum F	Required Ce	ement Volume	<u>s</u> _				
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
14 3/4	0.4336	630	1065	366	191	8.60	1434	2M	1.00
1		, ,							

85/8	casingin	side the	113/4		Design I	actors	INTERN	NEDIATÉ :	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	Weight
"A"	32.00	Р	110	TXPBTC	6.57	1.38	1.56	4,788	153,216 7
"B"								0	0.
w/8.4#/g	mud, 30min Sf	c Csg Test psig:			•		Totals:	4,788	153,216
The co	ement volun	ne(s) are inte	nded to ach	ieve a top of	0	ft from su	rface or a	775	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt		% Excess	Mud Wt	MASP	BOPE	Hole-Cplg :
10 5/8	0.2100	640	1664	1055	58	10.00	2716	3M	0.50
*		*							ē.

Tail cmt 5 1/2	casing ins	ide the	8 5/8	# ## # ### # ### . 	e para se para e para	Design Fa	ictors	PRODUCTION	
egment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	Weight
"A"	23.00	P	110	TXP	3.01	3.08	2.89	9,879	227,217
"B"	23.00	P	110	TXP	9.25	2.61	2.89	7,831	180,113
w/8.4#/g	mud, 30min Sfc	Csg Test psig:	2,173		•		Totals:	17,710	407,330
В	would be:				48.61	2.89	if it were a	vertical we	llbore.
No Pilot Hole Planned		ned	MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity®	MEOC
		17710	10531	10531	9879	90	8	11003	
The co	ement volume	(s) are inte	nded to ach	ieve a top of	4588	ft from s	urface or a	200	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
7 7/8	0.1733	2395	135904	2279	5862	9.20			0.84

Carlsbad Field Office 6/19/2018