Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM 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.***

***SUBMIT IN TRIPLICATE - Other instructions on page 2***

HOBBS OCD
MAR 05 2018
RECEIVED

5. Lease Serial No.
NMLC069515

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
ZIA HILLS 25E FED COM 403H

2. Name of Operator
CONOCOPHILLIPS COMPANY
Contact: DEIDRE DUFFY
E-Mail: DDUFFY@LTENV.COM

9. API Well No.
30-025-43377-00-X1

3a. Address
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 970-385-1096

10. Field and Pool or Exploratory Area
WC025G09S263225A-WOLFCAMP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 25 T25S R32E NWNE 316FNL 2310FEL
32.011220 N Lat, 103.373820 W Lon

11. County or Parish, State
LEA COUNTY, NM

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☒ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Subsequent Report | ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other Drilling Operations |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

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 recomplete 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 recompletion 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.

Change of name from War Hammer 25 Fed Com 15H to Zia Hills 25E Fed Com 403H. (320709)

Change of BHL location.
Change from 36-26S-32E 330'FSL 2310'FEL
Change to 36-26S-32E 50'FSL 2310'FEL

See Attached

**Carlsbad Field Office**
**OCD Hobbs**

SEE ATTACHED FOR CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
**Electronic Submission #399958 verified by the BLM Well Information System**
**For CONOCOPHILLIPS COMPANY, sent to the Hobbs**
**Committed to AFMSS for processing by PRISCILLA PEREZ on 01/08/2018 (18PP0428SE)**

Name *(Printed/Typed)* DEIDRE DUFFY — Title PROJECT ECOLOGIST

Signature (Electronic Submission) — Date 01/08/2018

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By ZOTA STEVENS — Title PETROLEUM ENGINEER — Date 03/01/2018

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 ****

ConocoPhillips

# WELL PLAN SUMMARY

## 1280 Extended Reach Single Lateral

Date: Mar 01, 2018
Version: 1
Prepared by: M. Smith

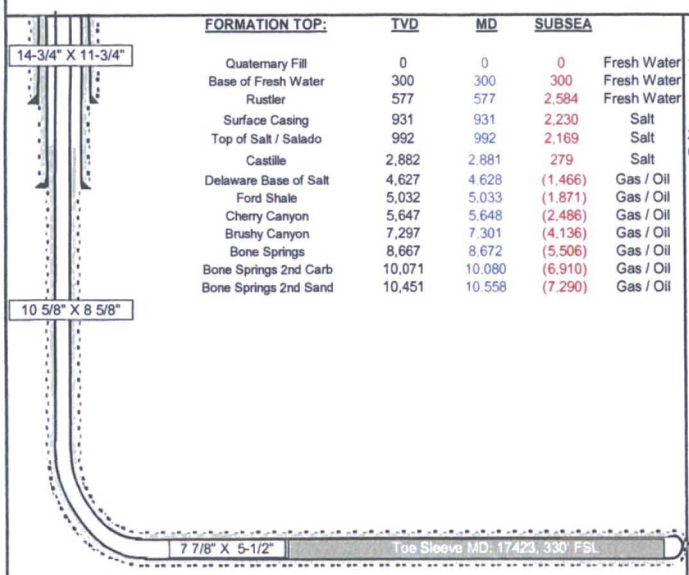
**WELL:** Zia Hills 25E Fed Com 403H
**COUNTY,STATE:** Lea, Co. NM
**API No.:**
**BLM Permit:**

**SURFACE LOC:** NWNE 25-T26S-R32E 316' FNL 2310' FEL
**BH LOC:** SENE 36-T26S-R32E 50' FSL 2310' FEL

**ELEVATIONS:** GL 3,134.0'
KB +27.0'

**WH Coord.:** LAT 32° 1' 11.75" N
**(NAD-27)** LON 103° 37' ##########

AFE: WAF OND
Drilling Network No.:
Invoice Handler ID: VENNECP
COST ESTIMATE
DRILLING
COMPLETION
FACILITIES
TOTAL




| FORMATION TOP: | TVD | MD | SUBSEA | |
|---|---|---|---|---|
| Quaternary Fill | 0 | 0 | 0 | Fresh Water |
| Base of Fresh Water | 300 | 300 | 300 | Fresh Water |
| Rustler | 577 | 577 | 2,584 | Fresh Water |
| Surface Casing | 931 | 931 | 2,230 | Salt |
| Top of Salt / Salado | 992 | 992 | 2,169 | Salt |
| Castille | 2,882 | 2,881 | 279 | Salt |
| Delaware Base of Salt | 4,627 | 4,628 | (1,466) | Gas / Oil |
| Ford Shale | 5,032 | 5,033 | (1,871) | Gas / Oil |
| Cherry Canyon | 5,647 | 5,648 | (2,486) | Gas / Oil |
| Brushy Canyon | 7,297 | 7,301 | (4,136) | Gas / Oil |
| Bone Springs | 8,667 | 8,672 | (5,506) | Gas / Oil |
| Bone Springs 2nd Carb | 10,071 | 10,080 | (6,910) | Gas / Oil |
| Bone Springs 2nd Sand | 10,451 | 10,558 | (7,290) | Gas / Oil |
| TARGET | 10,581 | 10,996 | (7,420) | Gas / Oil |
| Formation Dip Rate: | | est > 90° dip | | |
| PBTD | 10,581 | 10,996 | (7,420) | Gas / Oil |

8 5/8 in. shoe 4820' MD
4785' TVD

Estimated BH Static Temperature (°F): 199
Max. Anticipated BH Pressure: 0.500 psi/ft 5,291 psi
Max Anticipated Surface Pressure: 2,963 psi

## Notes

1) Ensure proper notifications are made to BLM
A) Spud Notice - 24 hours before spud
B) Running / Cementing all strings of casing - 4 hours
C) BOP Tests - 4 hours
2) 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

## CONTACTS

| | | Office | Cell |
|---|---|---|---|
| *Drilling Engineer:* | Matt Smith | 281-206-5199 | 432-269-6432 |
| *Geologist:* | Josh Day | 281-206-5620 | 423-512-0347 |
| *Onsite Drilling Rep.:* | Greg Rivera | 432-234-9399 | |
| | Dennis Hously | | |
| *Drilling Supt.:* | Scott Nicholson | 432-688-9065 | 432-230-8010 |

**DRILLING FLUID:**

| | Type | Interval (MD) | Density ppg | Vis sec/qt | PV cP | YP #/100ft2 | pH | FL mL | LGS % by vol | NaCl ppb sol | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface: | Fresh Water | Surface - ~~931'~~ 950 | 8.4-8.8 | 28-50 | 1-5 | 2-6 | 7.5-8.5 | NC | < 5.0 | 10,000 | Rig Tanks/Closed Loop |
| Intermediate: | Emulsified Brine | 931' - 4820' | 9-9.5 | 28-50 | 1-5 | 2-6 | 7.5-8.5 | NC | < 5.0 | 180,000 | Rig Tanks/Closed Loop |
| Production: | OBM | 4820' - 17703' | 9-9.5 | 50-70 | 18-25 | 8-14 | 9.5-10 | < 8 | < 8.0 | 400 - 00 | Rig Tanks/Closed Loop |

*Reference Drilling Fluids Program*

**CASING:**

| | Hole | TOP (MD) | BTM (MD) | Length | Size | Wt | Grade | Connection |
|---|---|---|---|---|---|---|---|---|
| Surface: | 14 3/4 | 27' | ~~931'~~ 950 | ~~904'~~ 923 | 11 3/4 | 47.00 | J-55 | BTC |
| Intermediate: | 10 5/8 | 27' | 4,820' | 4,793' | 8 5/8 | 32.00 | P-110 | BTC |
| Production: | 7 7/8 | 27' | 17,703' | 17,676' | 5 1/2 | 23.00 | P-110 | TXP |

**CENTRALIZATION:**
Surface Casing: 1 per joint on first 3 joints
Intermediate Casing: Shoe joint. 1 per joint where DLS >0.6 °/100'
Production Liner: Rigid body , 1 every other joint from TD to estimated TOC, 1 every 4 joints above TOC

**BOP:**
Minimum - COP Class 3 Well Control Requirements
Rig - 13-5/8"x10M psi Rams / 4-1/16"x10M psi Manifold
Stackup - Rotating Head, Annular Preventer, Pipe Ram, Blind Ram, Mud Cross (Choke & Kill Valves), Pipe Ram

**Mud Pit:** Float Based Electronic PVT with Flow Sensor and Gravity Trip Tank, Alarms +/- 10 BBLS

**Wellhead:** 13-5/8" x 10M psi (Casing Head - "A" Section)

**CEMENT:**

| | Hole | MD | TVD | Spacer | Lead | Tail | COMMENTS |
|---|---|---|---|---|---|---|---|
| Surface: | 14-3/4"X11-3/4" | 931' | 931' | 20 bbl FW | 400 sx Class C + adds<br>12.8 ppg 1.73ft3/sk | 420 sx Class C+ adds<br>14.8 ppg 1.33 ft3/sk | Cemented to surface w/ 200%XS<br>Add FiberBlock |
| Intermediate: | 10-5/8"X8-5/8" | 4,820' | 4,785 | 40 bbl Spacer | 440 sx Poz/Class C + adds<br>11.8 ppg 2.7 ft3/sk | 280 sx Class H adds<br>15.6 ppg 1.59 ft3/sk | Cemented to surface w/ 70%L /<br>30%T XS calc'd on 10.625" hole<br>Add FiberBlock |
| Production: | 7-7/8"X5-1/2" | 17,703' | 10,581' | 40 bbl OBM spacer | | 2153 sx Class H + adds | Cemented 500' above Int Casing<br>Depth 10% XS calc'd on 7.875" hole |

*Reference Cementing Recommendation* — 15.6 ppg 1.19ft3/sk

**DIRECTIONAL PLAN:**

| Comments | MD (ft) | INC (deg) | AZI (deg) | TVD (ft) | NS (ft) | EW (ft) | DLS (°/100') | VS (ft) | SEC-T-R | Section Line Distance | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Build @ 1.5°/100' | 3,680' | 0 | 0 | 3,680' | 0 | 0 | 0 | 0 | 25-T26S-R32E | 316' FNL | 2310' FEL |
| End Build @ 3° | 3,847' | 3 | 360 | 3,847' | 4 | 0 | 1.5 | -4 | 25-T26S-R32E | 312' FNL | 2310' FEL |
| Intermediate Casing | 4,820' | 3 | 360 | 4,785' | 46 | 0 | 0.0 | -46 | 25-T26S-R32E | 270' FNL | 2310' FEL |
| KOP , Build @ 8°/100' | 9,836' | 3 | 360 | 9,831' | 265 | -2 | 0 | -265 | 25-T26S-R32E | 51' FNL | 2312' FEL |
| Landing Point | 10,997' | 90 | 180 | 10,578' | -454 | 4 | 8 | 454 | 25-T26S-R32E | 770' FNL | 2307' FEL |
| Toe Sleeve 2 | 17,373' | 90 | 180 | 10,540' | -6830 | 50 | 0 | 6,831 | 36-T26S-R32E | 380' FSL | 2310' FEL |
| FTP / Toe Sleeve 1 | 17,423' | 90 | 180 | 10,540' | -6880 | 50 | 0 | 6,881 | 36-T26S-R32E | 330' FSL | 2310' FEL |
| PBHL/TD | 17,703' | 90 | 180 | 10,540' | -7160 | 50 | 0 | 7,161 | 36-T26S-R32E | 50' FSL | 2310' FEL |

*Reference Directional Plan* — MWD Surveys will be taken at 90' interval below surface casing, 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 |
| Cased Hole - | GR/CBL/USIT | None |
| MWD - | GR | Surface Casing Shoe to TD |

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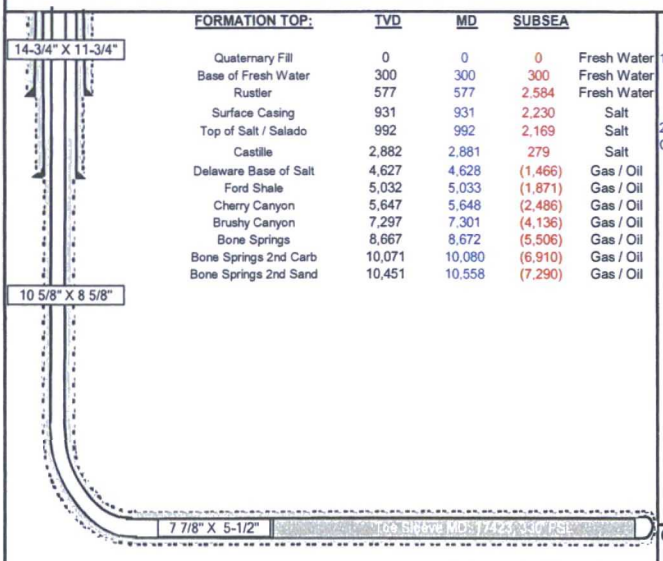


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|---|---|---|---|---|---|---|---|---|
| Surface: | 14 3/4 | 27' | 931' | 904' | 11 3/4 | 47.00 | J-55 | BTC |
| Contingency | | | ACP/DV Tool run 100' below water board depth if necessary | | | | | |
| Intermediate: | 10 5/8 | 27' | 4,820' | 4,793' | 8 5/8 | 32.00 | P-110 | BTC |
| Production: | 7 7/8 | 27' | 17,703' | 17,676' | 5 1/2 | 23.00 | P-110 | TXP |

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| MWD - | GR | Surface Casing Shoe to TD |

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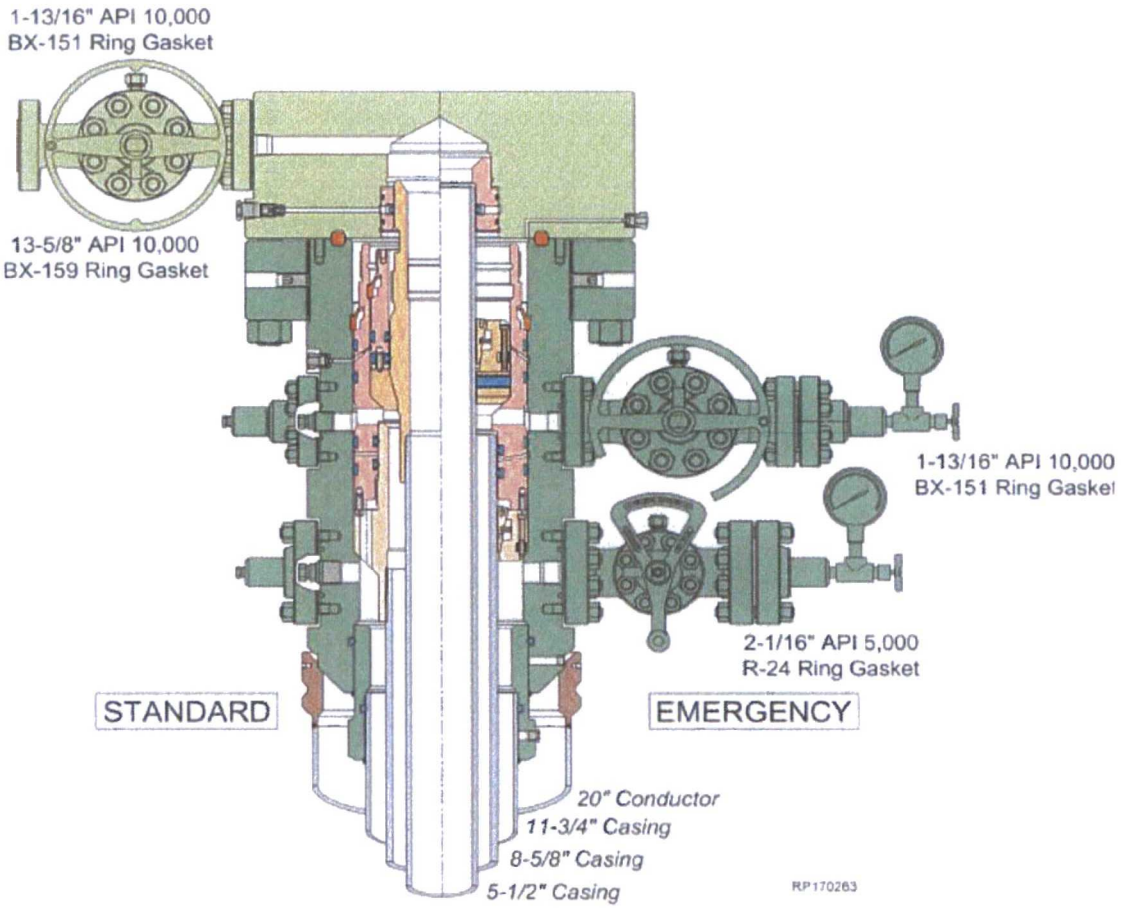
**Batch Drilling Order (Quad Pad)**

| Surface | Intermediate | Lateral |
|---|---|---|
| 1) Well 1 | 1) Well 4 | 1) Well 1 |
| 2) Well 2 | 2) Well 3 | 2) Well 2 |
| 3) Well 3 | 3) Well 2 | 3) Well 3 |
| 4) Well 4 | 4) Well 1 | 4) Well 4 |

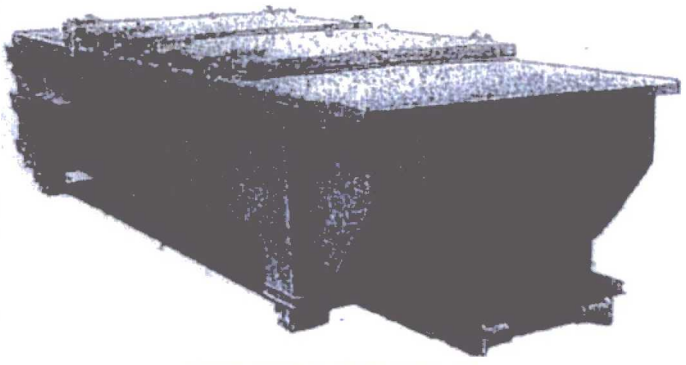

1-13/16" API 10,000
BX-151 Ring Gasket
13-5/8" API 10,000
BX-159 Ring Gasket
1-13/16" API 10,000
BX-151 Ring Gasket
2-1/16" API 5,000
R-24 Ring Gasket
STANDARD
EMERGENCY
20" Conductor
11-3/4" Casing
8-5/8" Casing
5-1/2" Casing
RP170263

Waste will be hauled off daily to an approved disposal site

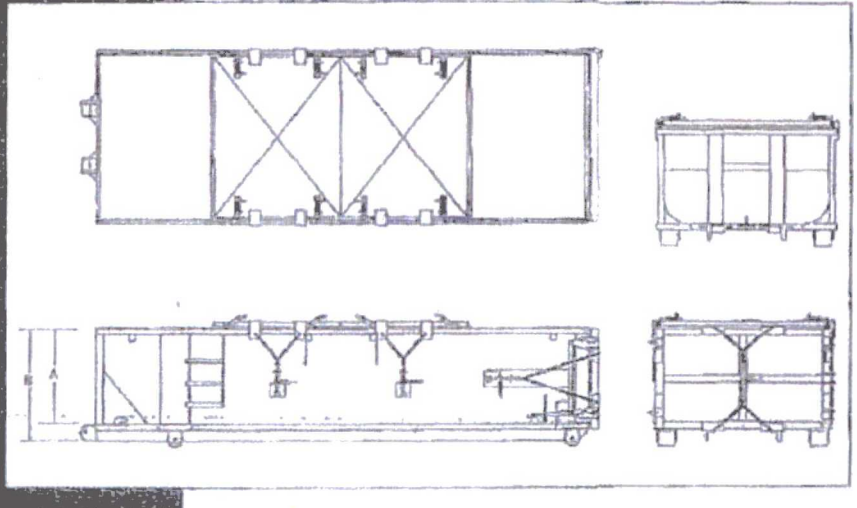
# SPECIFICATIONS

FLOOR: 3/16" PL one piece
CROSS MEMBER: 8 x 4.1 channel 16" on center
WALLS: 3/16" PL solid welded with tubing top inside liner hooks
DOOR: 3/16" PL with tubing frame
FRONT: 3/16" PL slant formed
PICK UP: Standard cable with 2" x 6" x 1/4" rails, gusset at each crossmember
WHEELS: 10 DIA x 4 long with grease fittings
DOOR LATCH: 3 Independent ratchet binders with chain & vertical second latch
GASKET: Tail extruded rubber seal with metal retainers
WELDS: All welds continuous except sub structure crossmembers
FINISH: Coated inside and out with a rust to metal, rust inhibiting acrylic enamel color coat
HYDROTESTING: Full capacity static test
DIMENSIONS: 22'-11" long (21'-6" inside), 89" wide (86" inside), see drawing for height
OPTIONS: Shot grit blast and special paint, Arm roll, Hook and Chain pickup
ROOF: 3/16" PL roof panels with tubing and channel support frame
LIDS: (2) 68" x 93" metal rolling lids spring loaded, self raising
ROLLERS: 4" V-groove rollers with delrin bearings and grease fittings
OPEN ING: (2) 80" x 82" openings with 4" divider centered on container
LATCH: (2) Independent ratchet binders with chains on lid
GASKETS: Extruded rubber seal with metal retainers

## Heavy Duty Split Metal Rolling Lid



| CONT. | A | B |
|---|---|---|
| 20 YD | 41 | 53 |
| 25 YD | 53 | 65 |
| 30 YD | 65 | 77 |



Zia Hills 25E Fed Com 403H
NWNE 25-T26S-R32E

**11-3/4" Surface Casing:**

| | |
|---|---|
| Surface Casing Depth (Ft) | 931 |
| Surface Casing O.D. (In.) | 11 3/4 |
| Surface Casing ID (In) | 11 |
| Hole O.D. (In) | 14 3/4 |
| Excess (%) | 200% |
| **Volume Tail (Sx)** | 420 |
| Yield Tail (Cu. Ft./Sx) | 1.33 |
| Yield Lead (Cu. Ft./Sx) | 1.73 |
| Shoe Joint (Ft) | 40 |
| Shoe Volume (Cu. Ft) | 26.4 |
| Top Feet of cement | 400 |
| Calculated Total Volume (Cu. Ft.) | 1,237 |
| Calc. Tail Volume (Cu. Ft.) | 547 |
| Calc. Lead Volume (Cu. Ft.) | 691 |
| **Calc. Lead Volume (Sx)** | 400 |
| | |
| Lead Volume (bbls) | 123.0 |
| Tail volume (bbls) | 97.4 |
| Displacement Volume (bbls) | 104.7 |

**8-5/8" Intermediate Casing (Lead):**

| | |
|---|---|
| Production Casing O.D. (In.) | 8.625 |
| Production Casing ID (In) | 7.921 |
| Hole O.D. (In) | 10.63 |
| Excess (%) | 70% |
| | |
| | |
| Yield Lead (Cu. Ft./Sx) | 2.7 |
| | |
| Calculated Total Lead (Cu. Ft.) | 1,185 |
| | |
| **Calc. Lead Volume (Sx)** | 440 |
| | |
| **Lead Volume (bbls)** | 211 |

**8-5/8" Intermediate Casing (Tail):**

| | |
|---|---|
| Production Casing Depth (Ft) | 4,820' |
| Production Casing O.D. (In.) | 8.625 |
| Production Casing ID (In) | 7.921 |
| Hole O.D. (In) | 10.63 |
| Excess (%) | 30% |
| | |
| Top Tail (Ft) (1500' above shoe) | 3,320' |
| Yield Tail (Cu. Ft./Sx) | 1.59 |
| Shoe Joint (Ft) | 90 |
| Shoe Volume (Cu. Ft) | 30.8 |
| | |
| Calc. Tail Volume (Cu. Ft.) | 440 |
| | |
| **Required Tail Volume (Sx)** | 280 |
| | |
| **Tail Volume (bbls)** | 78 |
| **Displacement Volume (bbls)** | 288 |

**5-1/2" Production Liner (Tail):**

| | | |
|---|---|---|
| Intermediate Casing Depth (Ft) | 4,820' | |
| Intermediate Casing O.D. (In.) | 8.625 | |
| Intermediate Casing ID (In) | 7.921 | |
| Production Casing Top Depth (Ft) | 27' | |
| Production Casing Depth (Ft) | 17,703' | |
| Production Casing O.D. (In.) | 5.500 | |
| Production Casing ID (In) | 4.670 | |
| Hole O.D. (In) | 7.88 | |
| Excess (%) | 10% | |
| Yield Tail (Cu. Ft./Sx) | 1.19 | |
| Shoe Joint (Ft) | 120 | |
| Shoe Volume (Cu. Ft) | 14.3 | |
| TOC (500' above intermediate shoe) | 4,320' | |
| Calc. Tail Volume (Cu. Ft.) | 2,562 | 2550.757 |
| | | |
| **Required Tail Volume (Sx)** | 2153 | |
| | | |
| **Tail Volume (bbls)** | 456 | |
| **Displacement Volume (bbls)** | 373 | |

**Lead Cement Description:**
Mix Weight 12.8 ppg
Class C
5% BWOW $NaCl$
1.9% bwoc SMS
0.004 gal/sk Defoamer
¼ lb/sk Polyflake
3 lb/sk Gasonite

**Tail Cement Description:**
Mix Weight 14.8 ppg
Class C
2% bwoc $CaCl2$
¼ lb/sk Polyflake
0.004 gal/sk Defoamer

**Intermediate Lead Cement Description:**
Mix Weight 11.8 ppg
Poz/Class C
5% bwow $NaCl$
10% bwoc Gel
0.3% bwoc Retarder
0.004 gal/sk Defoamer
¼ lb/sk Polyflake
3 lb/sk Gasonite

**Intermediate Tail Cement Description:**
Mix Weight 15.6 ppg
Class H
0.3% bwoc Fluid Loss
0.1% bwoc Retarder
0.004 gal/sk Defoamer
¼ lb/sk Polyflake

**Production Liner Tail Cement Description:**
Mix Weight 15.6 ppg
Class H
0.5% bwoc Fluid Loss
0.05% bwoc Anti-Settling Agent
0.35% bwoc Retarder
0.004 gal/sk Defoamer

**Zia Hills 25E Fed Com 403H** **NWNE 25-T26S-R32E** **Lea, Co, NM** **1/8/2018**

## SURFACE CASING DESIGN INFORMATION

**Setting Depth: 931' MD 931' TVD**

**PIPE BODY DIMENSIONAL / PERFORMANCE DATA:**

| SIZE (Inches) | WEIGHT (LB/FT) | GRADE | CPLG TYPE | BORE ID (Inches) | DRIFT ID (Inches) | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|---|---|
| 11.75 | 47 | J-55 | BTC | 11 | 10.844 | 1,510 / 1,438 | 3,070 / 2,669 | 737 / 526 |

**CONNECTION DIMENSIONAL / PERFORMANCE DATA:**

| OD (Inches) | ID (Inches) | DRIFT (Inches) | CPLG TYPE | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|
| 12.75 | 11 | 10.844 | BTC | 1,510 / 1,438 | 3,070 / 2,669 | 807 / 576 |

Surface Casing Test Pressure = 1,500 psi

Pressure Test Prior to Drill Out

COP Minimum Design / Safety Factor

| Burst | Collapse | Tension (Body & |
|---|---|---|
| 1.15 | 1.05 | 1.40 |

BLM Actual Design / Safety Factors

| Burst | Collapse | Tension (Body) |
|---|---|---|
| 7.37 | 3.63 | 16.84 |
| | | 19.39 |

## INTERMEDIATE CASING DESIGN INFORMATION

**Setting Depth: 4,820' MD 4,785' TVD**

**PIPE BODY DIMENSIONAL / PERFORMANCE DATA:**

| SIZE (Inches) | WEIGHT (LB/FT) | GRADE | CPLG TYPE | BORE ID (Inches) | DRIFT ID (Inches) | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|---|---|
| 8.625 | 32.0 | P-110 | BTC | 7.921 | 7.875 | 3,420 / 3,257 | 7,860 / 6,834 | 1,006 / 718 |

**CONNECTION DIMENSIONAL / PERFORMANCE DATA:**

| OD (Inches) | ID (Inches) | DRIFT (Inches) | CPLG TYPE | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|
| 9.625 | 7.921 | 7.875 | BTC | 3,420 / 3,257 | 7,860 / 6,834 | 1,002 / 715 |

Intermediate Casing Test Pressure = 1500 psi

Pressure Test Prior to Drill Out

COP Minimum Design / Safety Factors

| Burst | Collapse | Tension (Body & |
|---|---|---|
| 1.15 | 1.05 | 1.40 |

BLM Actual Design / Safety Factors

| Burst | Collapse | Tension (Body) |
|---|---|---|
| 3.43 | 1.49 | 6.54 |
| | | 7.61 |

## PRODUCTION LINER DESIGN INFORMATION

**Setting Depth: 17,703' MD 10,540' TVD**
**Hanger: 27' MD / TVD**

**PIPE BODY DIMENSIONAL / PERFORMANCE DATA:**

| SIZE (Inches) | WEIGHT (LB/FT) | GRADE | CPLG TYPE | BORE ID (Inches) | DRIFT ID (Inches) | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|---|---|
| 5.5 | 23 | P-110 | TXP | 4.670 | 4.54 | 14,520 / 13,828 | 12,630 / 10,982 | 729 / 520 |

**CONNECTION DIMENSIONAL / PERFORMANCE DATA:**

| OD (Inches) | ID (Inches) | DRIFT (Inches) | CPLG TYPE | COLLAPSE (PSI) API / CoP | BURST (PSI) API / CoP | TENSION (1k LBS) API / CoP |
|---|---|---|---|---|---|---|
| 6.1 | 4.670 | 4.54 | TXP | 14,520 / 13,828 | 12,630 / 10,982 | 729 / 520 |

Production Casing Test Pressure = TBD

COP Minimum Design / Safety Factors

| Burst | Collapse | Tension (Body & Connection) |
|---|---|---|
| 1.15 | 1.05 | 1.40 |

BLM Actual Design / Safety Factors

| Burst | Collapse | Tension (Body) |
|---|---|---|
| 2.50 | 2.19 | 2.63 |
| | | 3.06 |

**BOPE Configuration & Specifications**
**13-5/8" x 10,000 psi System**

Rotating Head (w/ fill up line)
13-5/8" x 5k psi

Annular Preventer
13-5/8" x 5k psi

Pipe Ram
13-5/8" x 10k psi

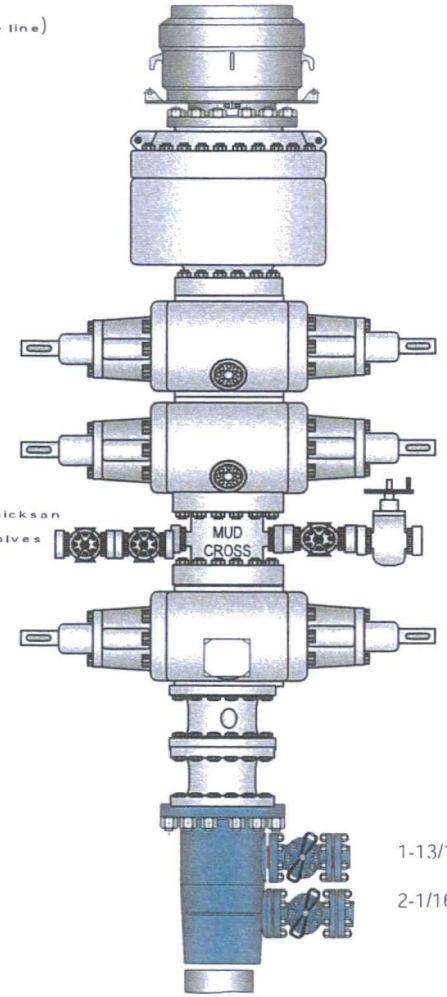
Blind Ram
13-5/8" x 10k psi

Kill Line 2-1/16" x 5k Chicksan
(2) 2-1/16" x 5k Gate Valves
Outer Check Valve

Pipe Ram
13-5/8" x 10k psi

Spacer Spool
13-5/8" x 10k psi

Casing Head
13-5/8" x 10k psi




Choke Line 6" x 3" x 10k psi
4-1/16" x 10k psi Inner Manual Valve
4 - 1/16" x 10k psi Outer Remote HCR

1-13/16" x 10k psi

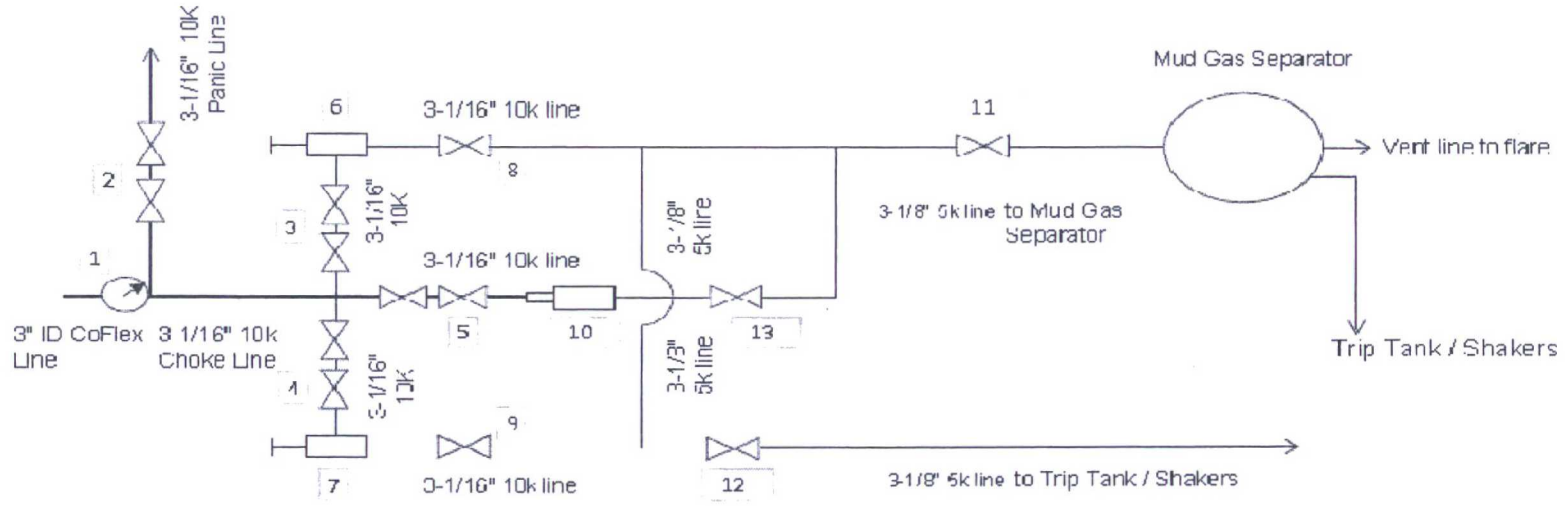
2-1/16" 5k psi

Variance is requested to to install a flexible choke line, instead of staright choke line prescribed in Onshore Order No 2,III.A.2.b

Choke Manifold 5M psi

**CHOKE MANIFOLD ARRANGEMENT - 10M Choke**

per Onshore Oil and Gas Order No. 2 utilizing 5M/10M Equipment




All Tees must be Targeted

| Item | Description |
|---|---|
| 1 | Pressure Gauge |
| 2 | 2 Gate Valves, 3-1/16" 10M |
| 3 | 2 Gate Valves, 3-1/16" 10M |
| 4 | 2 Gate Valves, 3-1/16" 10M |
| 5 | 2 Gate Valves, 3-1/16" 10M |
| 6 | Upper Manual Adjustable Choke, 4-1/16", 10M |
| 7 | Lower Manual Adjustable Choke, 4-1/16", 10M |
| 8 | Gate Valve, 3-1/16" 10M |
| 9 | Gate Valve, 3-1/16" 10M |
| 10 | Remote Controlled Hydraulic Adjustable Choke, 4-1/16", 10M |
| 11 | Gate Valve, 3-1/8" 5M |
| 12 | Gate Valve, 3-1/8" 5M |
| 13 | Gate Valve, 3-1/16" 10M |

The 10M Choke Manifold & Valves will be tested to rated working pressure.

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **CONOCOPHILLIPS COMPANY** |
| **LEASE NO.:** | **NMLC069515** |
| **WELL NAME & NO.:** | **ZIA HILLS 25E FED COM 403H** |
| **SURFACE HOLE FOOTAGE:** | **316' FNL & 2310' FEL** |
| **BOTTOM HOLE FOOTAGE** | **50' FSL & 2310' FEL; Sec. 36** |
| **LOCATION:** | **Section 25, T. 26 S., R 32 E., NMPM** |
| **COUNTY:** | **Lea County, New Mexico** |

COA

**All pervious COA still apply expect the following:**

| | | | |
|---|---|---|---|
| H2S | ◉ Yes | ○ No | |
| Potash | ◉ None | ○ 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 **950** 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. **Addititonal cement maybe required. Excess calculates to 18%.**

**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 County
Call 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 030118**

263225B SUNDRY ZIA HILLS 25E FED COM 403H 30015 NMLC069515 CONOCOPHILLIPS COMPANY 12-55 399958 0312018 ZS

| 11 3/4 | surface csg in a | | 14 3/4 | inch hole. | | Design Factors | | SURFACE | |
|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | | Coupling | Body | Collapse | Burst | Length | Weight |
| "A" | 47.00 | J 55 | | BUTT | 16.51 | 3.48 | 1.29 | 950 | 44,650 |
| "B" | | | | | | | | 0 | 0 |
| w/8.4#/g mud, 30min Sfc Csg Test psig: | 1,500 | | | Tail Cmt | does | circ to sfc. | Totals: | 950 | 44,650 |

Comparison of Proposed to Minimum Required Cement Volumes

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 14 3/4 | 0.4336 | 820 | 1251 | 442 | 183 | 8.80 | 1318 | 2M | 1.00 |

| 8 5/8 | casing inside the | | 11 3/4 | | | Design Factors | | INTERMEDIATE | |
|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | | Coupling | Joint | Collapse | Burst | Length | Weight |
| "A" | 32.00 | P 110 | | TXPBTC | 6.52 | 1.44 | 1.51 | 4,820 | 154,240 |
| "B" | | | | | | | | 0 | 0 |
| w/8.4#/g mud, 30min Sfc Csg Test psig: | | | | | | | Totals: | 4,820 | 154,240 |

The cement volume(s) are intended to achieve a top of 0 ft from surface or a 950 overlap.

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 10 5/8 | 0.2100 | 720 | 1633 | 1069 | 53 | 9.50 | 2883 | 3M | 0.50 |

Class 'C' tail cmt yld > 1.35

Tail cmt

| 5 1/2 | casing inside the | | 8 5/8 | | | Design Factors | | PRODUCTION | |
|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | | Coupling | Joint | Collapse | Burst | Length | Weight |
| "A" | 23.00 | P 110 | | TXP | 3.01 | 3 | 2.79 | 9,836 | 226,228 |
| "B" | 23.00 | P 110 | | TXP | 9.35 | 2.55 | 2.79 | 7,267 | 167,141 |
| w/8.4#/g mud, 30min Sfc Csg Test psig: | 2,164 | | | | | | Totals: | 17,103 | 393,369 |
| B would be: | | | | | 45.02 | 2.80 | if it were a vertical wellbore. | | |

| No Pilot Hole Planned | MTD | Max VTD | Csg VD | Curve KOP | Dogleg° | Severity° | MEOC |
|---|---|---|---|---|---|---|---|
| | 17103 | 10540 | 10540 | 9836 | 90 | 8 | 10997 |

The cement volume(s) are intended to achieve a top of 4620 ft from surface or a 200 overlap.

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 7 7/8 | 0.1733 | 2153 | 2562 | 2169 | 18 | 9.50 | | | 0.84 |