

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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.***Carlsbad Field Office**
OCD Hobbs
HOBBS**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

5. Lease Serial No.

UNIT 0069515

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

2. Name of Operator

CONOCOPHILLIPS COMPANY

Contact: ASHLEY BERGEN

E-Mail: ashley.bergen@conocophillips.com

8. Well Name and No.

WAR HAMMER 25 FED COM W2 10H

9. API Well No.

30-025-42561-00-X1

3a. Address

MIDLAND, TX 79710

3b. Phone No. (include area code)

Ph: 432-688-6938

10. Field and Pool, or Exploratory

WC-025 G09 S263225A

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

Sec 25 T26S R32E NWNE 283FNL 1650FEL
32.011256 N Lat, 103.373053 W Lon

11. County or Parish, and State

LEA COUNTY, NM

12. CHECK 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	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ 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 recomple 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomple in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

ConocoPhillips Company respectfully requests to amend the approved APD with revised, 3160-3, plats and drilling plan changes.

The following attachments are included in the proposal:

3160-3 (1 page)
C-102 (1 page)
All well plats (13 pages)
Casing design (3 pages)
Directional Plan (7 pages)
Wellbore Schematic (1 page)
Wellhead Schematic (1 page)
Premium Connection Spec Sheets (4 pages)

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #310152 verified by the BLM Well Information System
For CONOCOPHILLIPS COMPANY, sent to the Hobbs
Committed to AFMSS for processing by LINDA JIMENEZ on 08/18/2015 (15LJ1516SE)

Name (Printed/Typed) ASHLEY BERGEN

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 07/24/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

WITHDRAWN Mustafa Hague

(BLM Approver Not Specified)

Title **PETROLEUM ENGINEER**

Date 05/19/2016

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.

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

K-3

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

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WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-42561	² Pool Code 98081	³ Pool Name WC-025 G-09 5263225A; WC
⁴ Property Code	⁵ Property Name WAR HAMMER 25 FEDERAL COM W2	⁶ Well Number 10H
⁷ OGRID No. 217817	⁸ Operator Name ConocoPhillips Company	⁹ Elevation 3134'

¹⁰ Surface Location

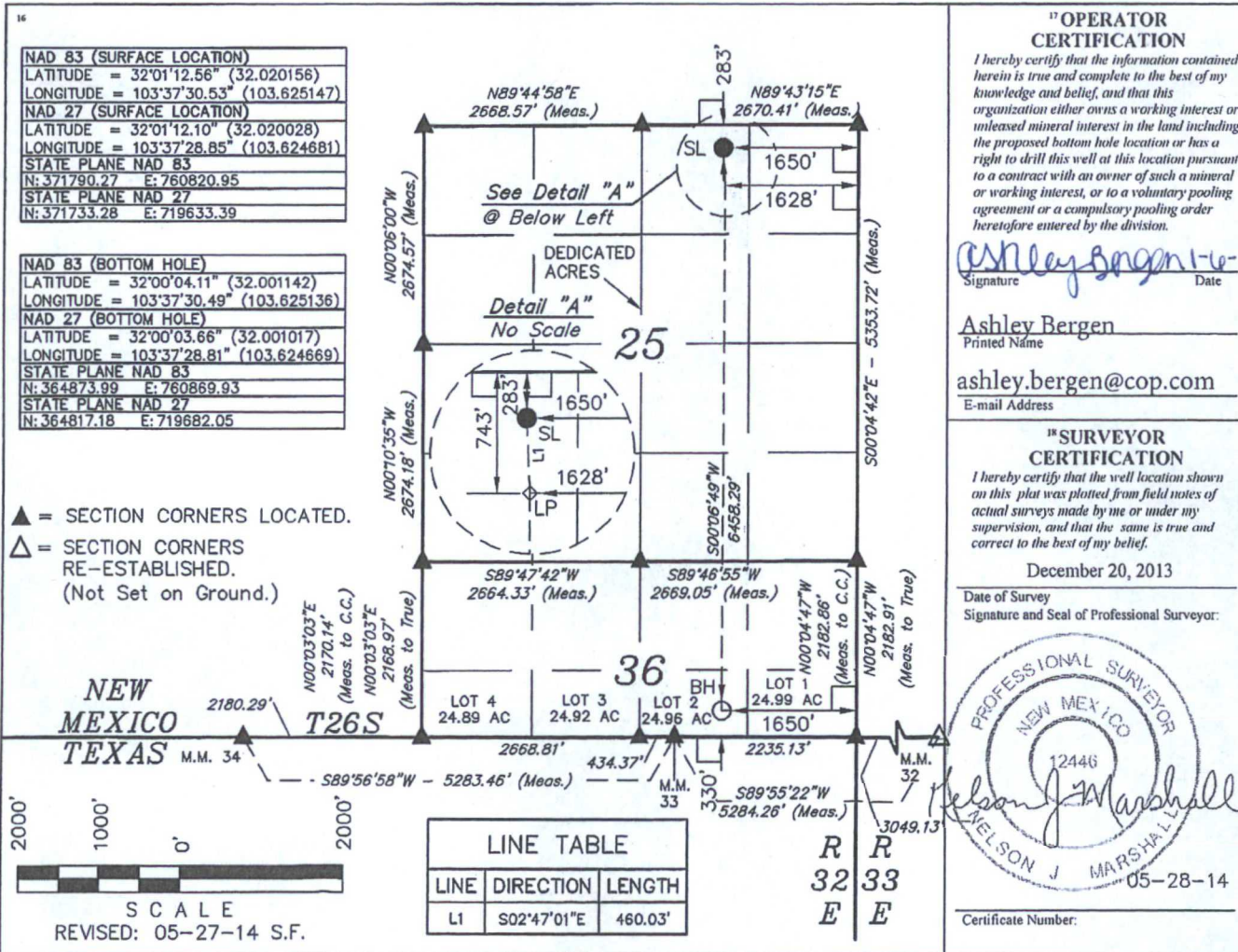
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	25	26 S	32 E		283	NORTH	1650	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	36	26 S	32 E		330	SOUTH	1650	EAST	LEA

¹² Dedicated Acres 224.96	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**Sundry Notice Request
ConocoPhillips Company
Red Hills West, Wolfcamp
War Hammer 25 Federal COM 10H**

Lea County, New Mexico

ConocoPhillips Company respectfully requests to amend the approved sundry with the revised casing and cementing program.

2. Proposed Casing and Cementing Program – Option to Not Run 9-5/8" Casing set at Ford Shale/Delaware Sands

ConocoPhillips Company respectfully requests the option to not run 9-5/8" 40# L-80 BTC Casing and spare it as a contingency if the next hole section failed to support the hydrostatic column of the previous mud weight. The intent for the casing and cementing program – Not Run 9-5/8" Casing Option is to:

- Drill the 12-1/4" and 8-3/4" hole sections with the same density mud (OBM or Saturated Brine).
- Case and cement the well with 13-3/8" surface, 7-5/8" intermediate and 5" production casing (3-strings).
- Isolate the Salt & Delaware utilizing Annulus Casing Packer and Stage Tool if necessary.
- Bring cement from 7-5/8" casing shoe to surface.
- Provided that if the hole can no longer support the hydrostatic column of the previous mud weight, a contingency plan to run the 9-5/8" casing will be the preferred if severe losses occurs during drilling the well.

The mud systems that are proposed for use are as follows:

DEPTH (FT)	TYPE	Density (ppg)	FV (sec/qt)	API Fluid Loss (cc/30 min)	pH	Vol (bbl)
0 – 950	Fresh Water or Fresh Water Native Mud in Steel Pits	8.5 – 9.0	28 – 40	N.C.	N.C.	700
950 – 4450	Oil Base Mud or Brine (Saturated NaCl ₂) in Steel Pits	8.9 – 10.5	28 – 40	N.C.	10 – 11	700 – 1500
4450 – 12150	Oil Base Mud or Brine (Saturated NaCl ₂) in Steel Pits with Wellbore Strengthening Material (25 – 30 ppb SureSeal)	8.9 – 10.5	28 – 40	5 – 10	10 – 11	1500 – 2300
12150 – TD	Oil Base Mud (O:W 80/20) in Steel Pits	13.5 – 15.0	18 – 30	1 – 3	N.C.	1500 – 2000

The changes proposed will be the use of 5 ppb – 20 ppb Wellbore Strengthening material (Walnut Fine), Cellulosic Polymers and Organic Solid blends in 8.9 ppg to 10.5 ppg OBM or Saturated Brine to increase the fracture initiation pressure above what would have been with clear saturated 10 ppg brine.

All Tubulars used for this design will be new. A multi-bowl system will be utilized. Option Not to Run 9-5/8" will be as follows:

Hole Size (in)	Casing (in)	Wt/Ft	Grade	Connection	Thread & Cplg OD	Depth (ft)	Depth (ftTVD)	Depth (ftMD)	BOPE System
17 1/2	13 3/8	54.5	J-55	BTC	14.375	0-950	950	950	N/A
12 1/4	9 5/8	40	L-80	BTC	10.625	0-4450	4450	4450	5M
9-7/8 or 8-3/4	7 5/8	29.7	P-110	BTC or Tenaris W523	7.752	0-12150	12150	12150	5M
6 3/4	5	18	P-110	Tenaris Blue/TXP	5.720	0-19400	12245	19400	10M

Minimum casing design factors: Burst 1.0, Collapse 1.125, Tensile Strength 1.6 Dry / 1.0 Buoyant

Hole Size (in)	Casing (in)	Burst	Collapse	Tension	Minimum Clearance
17 1/2	13 3/8	5.97	2.46	16.5	1.5625
12 1/4	9 5/8	2.37	1.27	5.15	0.8125
9-7/8 or 8 3/4	7-5/8	1.43	**1.7	2.66	0.4990
6 3/4	5	1.56	1.51	2.63	0.515

**COP Collapse Design
1/3 Partial Evacuation to Next Csg

	Volume (sx)	Type	Weight (ppg)	Yield (ft3/sx)	Water (Gal/sx)	Excess	Cement Top
Surface	Lead	530	Class C	13.6	1.73	10.88	>100% Surface
	Tail	310	Class C	14.8	1.35	6.39	>100% 650ft

Additives (BWOB): 4% Extender, 2% CaCl₂, 0.125 lb/sx LCM, 0.2% Anti-Foam

Intermediate 1	Lead	1430	Tuned Light	11.9	1.91	11.85	>100% Surface
	Tail	380	Class C	14.8	1.33	8.23	>100% 4100ft

Additives (BWOB): 4% Extender, 2% CaCl₂, 0.125 lb/sx LCM, 0.2% Anti-Foam

Intermediate 2	Lead	900	Tuned Light	9.7	2.44	9.116	>30% Surface
	Tail	140	TXI	13.2	1.53	7.474	>30% 11650ft

Additives (BWOB): 0.4% Dispersant, 1 lb/sx Salt, 0.1% Retarder, 0.5% Fluid Loss, 3 lb/sx LCM

Production	Lead						
	Tail	750	Class H	15	1.14	3.216	>35% 11650ft

Additives (BWOB): 0.4% Retarder, 0.2% Anti-foam, 0.7 Anti-gelling, 0.4% Fluid Loss, 2% Expanding Agent, 5.0% Silica

9-5/8" Casing will be set aside as contingency string for cementing with severe losses if necessary.

Attachments:

- ✚ Attachment # 1 Revised Directional Plan
- ✚ Attachment # 2 Wellbore Schematic
- ✚ Attachment # 3 Wellhead Schematic
- ✚ Attachment # 4 Premium Connection Spec Sheets

Sundry request proposed 13 July 2015 by:

James Chen, P.E.

Drilling Engineer | ConocoPhillips Permian Shale

Office Phone: 281.206.5244

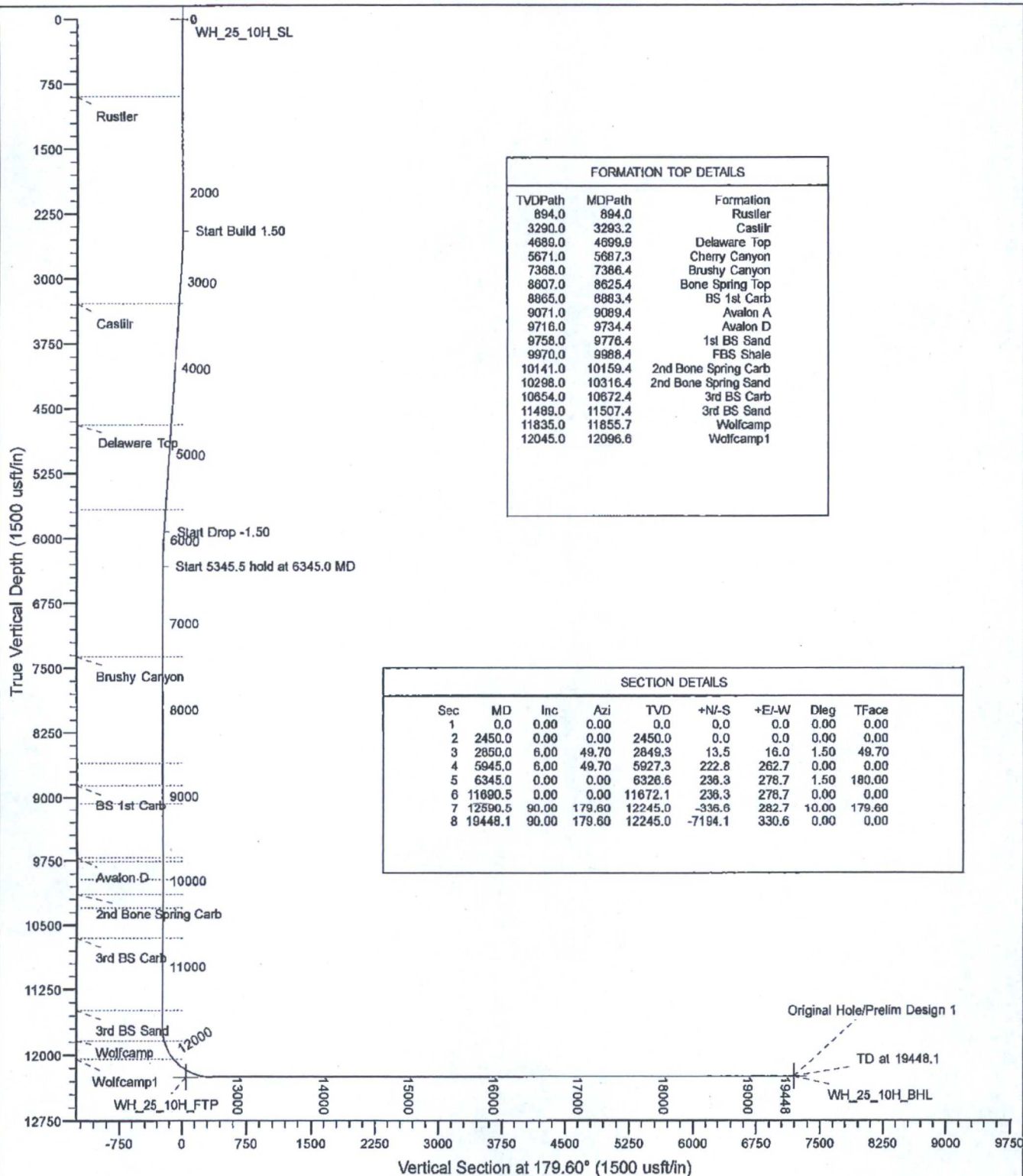
Cell Phone: 832.768.1647



ConocoPhillips MCBU
Permian Delaware H2 New Mexico
WAR HAMMER 25 FEDERAL COM 10H - PS
War Hammer 25 Federal Com 10H - PS
Original Hole
Plan: Prelim Design 1 (War Hammer 25 Federal Com 10H - PS/Original Hole)
GRND+27 SKID @ 3161.0usft
US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001



Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.91°
Magnetic Field
Strength: 48067.7nT
Dip Angle: 59.84°
Date: 7/10/2015
Model: BGGM2015

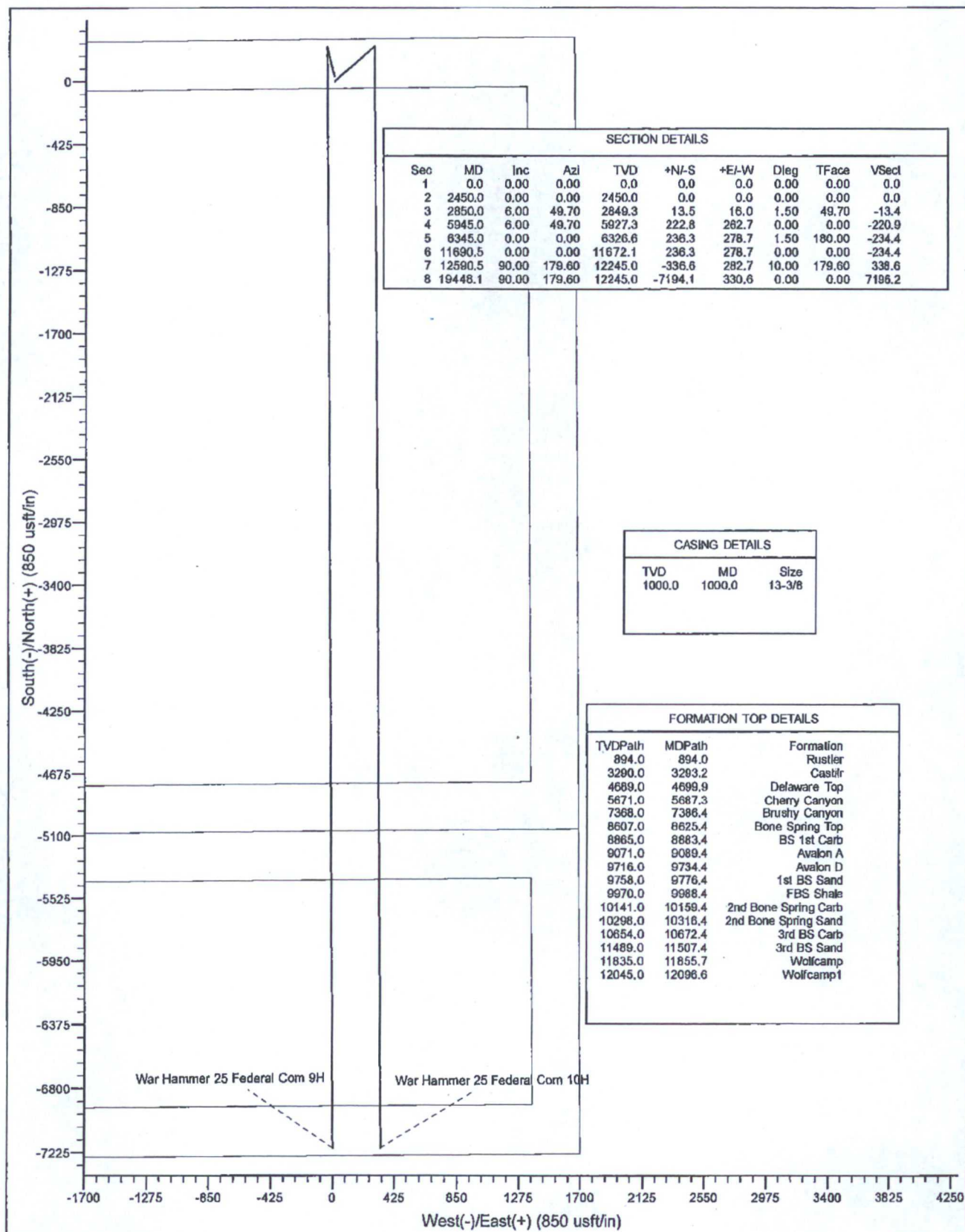




ConocoPhillips MCBU
Permian Delaware Hz New Mexico
WAR HAMMER 25 FEDERAL COM 10H - PS
War Hammer 25 Federal Com 10H - PS
Original Hole
Plan: Prelim Design 1 (War Hammer 25 Federal Com 10H - PS/Original Hole)
GRND+27 SKID @ 3161.0usft
US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001



Azimuths to Grid North
True North: -0.36°
Magnetic North: 8.81°
Magnetic Field
Strength: 46087.7nT
Dip Angle: 59.04°
Date: 7/10/2015
Model: BGGM2015



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ConocoPhillips MCBU

Permian Delaware Hz New Mexico

WAR HAMMER 25 FEDERAL COM 10H - PS

War Hammer 25 Federal Com 10H - PS

Original Hole

Plan: Prelim Design 1

Standard Planning Report

13 July, 2015

ConocoPhillips Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Site WAR HAMMER 25 FEDERAL COM 10H - P
Company:	ConocoPhillips MCBU	TVD Reference:	GRND+27 SKID @ 3161.0usft
Project:	Permian Delaware Hz New Mexico	MD Reference:	GRND+27 SKID @ 3161.0usft
Site:	WAR HAMMER 25 FEDERAL COM 10H - PS	North Reference:	Grid
Well:	War Hammer 25 Federal Com 10H - PS	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Prelim Design 1		

Project	Permian Delaware Hz New Mexico, Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	WAR HAMMER 25 FEDERAL COM 10H - PS, Section 25 and Section 36				
Site Position:		Northing:	371,733.28 usft	Latitude:	32° 1' 12.105 N
From:	Map	Easting:	719,633.39 usft	Longitude:	103° 37' 28.849 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.38 °

Well	War Hammer 25 Federal Com 10H - PS, Horizontal - Development					
Well Position	+N/-S	0.0 usft	Northing:	371,733.28 usft	Latitude:	32° 1' 12.105 N
	+E/-W	0.0 usft	Easting:	719,633.39 usft	Longitude:	103° 37' 28.849 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,134.0 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	7/10/2015	7.28	59.94	48,088

Design	Prelim Design 1				
Audit Notes:					
Version:	1	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	179.60	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,450.0	0.00	0.00	2,450.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,850.0	6.00	49.70	2,849.3	13.5	16.0	1.50	1.50	0.00	49.70	
5,945.0	6.00	49.70	5,927.3	222.8	262.7	0.00	0.00	0.00	0.00	
6,345.0	0.00	0.00	6,326.6	236.3	276.7	1.50	-1.50	0.00	180.00	
11,690.5	0.00	0.00	11,672.1	236.3	276.7	0.00	0.00	0.00	0.00	
12,590.5	90.00	179.60	12,245.0	-336.6	282.7	10.00	10.00	19.96	179.60	
19,448.1	90.00	179.60	12,245.0	-7,194.1	330.6	0.00	0.00	0.00	0.00	WH_25_10H_BHL

ConocoPhillips

Planning Report

Database: EDM Central Planning
 Company: ConocoPhillips MCBU
 Project: Permian Delaware Hz New Mexico
 Site: WAR HAMMER 25 FEDERAL COM 10H - PS
 Well: War Hammer 25 Federal Com 10H - PS
 Wellbore: Original Hole
 Design: Prelim Design 1

Local Co-ordinate Reference: Site WAR HAMMER 25 FEDERAL COM 10H - P
 TVD Reference: GRND+27 SKID @ 3161.0usft
 MD Reference: GRND+27 SKID @ 3161.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,450.0	0.00	0.00	2,450.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.75	49.70	2,500.0	0.2	0.2	-0.2	1.50	1.50	0.00
2,600.0	2.25	49.70	2,600.0	1.9	2.2	-1.9	1.50	1.50	0.00
2,700.0	3.75	49.70	2,699.8	5.3	6.2	-5.2	1.50	1.50	0.00
2,800.0	5.25	49.70	2,799.5	10.4	12.2	-10.3	1.50	1.50	0.00
2,850.0	6.00	49.70	2,849.3	13.5	16.0	-13.4	1.50	1.50	0.00
2,900.0	6.00	49.70	2,899.0	16.9	19.9	-16.8	0.00	0.00	0.00
3,000.0	6.00	49.70	2,998.4	23.7	27.9	-23.5	0.00	0.00	0.00
3,100.0	6.00	49.70	3,097.9	30.4	35.9	-30.2	0.00	0.00	0.00
3,200.0	6.00	49.70	3,197.4	37.2	43.9	-36.9	0.00	0.00	0.00
3,300.0	6.00	49.70	3,296.8	44.0	51.8	-43.6	0.00	0.00	0.00
3,400.0	6.00	49.70	3,396.3	50.7	59.8	-50.3	0.00	0.00	0.00
3,500.0	6.00	49.70	3,495.7	57.5	67.8	-57.0	0.00	0.00	0.00
3,600.0	6.00	49.70	3,595.2	64.2	75.7	-63.7	0.00	0.00	0.00
3,700.0	6.00	49.70	3,694.6	71.0	83.7	-70.4	0.00	0.00	0.00
3,800.0	6.00	49.70	3,794.1	77.8	91.7	-77.1	0.00	0.00	0.00
3,900.0	6.00	49.70	3,893.5	84.5	99.7	-83.8	0.00	0.00	0.00
4,000.0	6.00	49.70	3,993.0	91.3	107.6	-90.5	0.00	0.00	0.00
4,100.0	6.00	49.70	4,092.4	98.0	115.6	-97.2	0.00	0.00	0.00
4,200.0	6.00	49.70	4,191.9	104.8	123.6	-103.9	0.00	0.00	0.00
4,300.0	6.00	49.70	4,291.3	111.6	131.6	-110.6	0.00	0.00	0.00
4,400.0	6.00	49.70	4,390.8	118.3	139.5	-117.3	0.00	0.00	0.00
4,500.0	6.00	49.70	4,490.2	125.1	147.5	-124.1	0.00	0.00	0.00
4,600.0	6.00	49.70	4,589.7	131.8	155.5	-130.8	0.00	0.00	0.00
4,700.0	6.00	49.70	4,689.1	138.6	163.4	-137.5	0.00	0.00	0.00
4,800.0	6.00	49.70	4,788.6	145.4	171.4	-144.2	0.00	0.00	0.00
4,900.0	6.00	49.70	4,888.0	152.1	179.4	-150.9	0.00	0.00	0.00
5,000.0	6.00	49.70	4,987.5	158.9	187.4	-157.6	0.00	0.00	0.00
5,100.0	6.00	49.70	5,086.9	165.7	195.3	-164.3	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database: EDM Central Planning
 Company: ConocoPhillips MCBU
 Project: Permian Delaware Hz New Mexico
 Site: WAR HAMMER 25 FEDERAL COM 10H - PS
 Well: War Hammer 25 Federal Com 10H - PS
 Wellbore: Original Hole
 Design: Prelim Design 1

Local Co-ordinate Reference: Site WAR HAMMER 25 FEDERAL COM 10H - P
 TVD Reference: GRND+27 SKID @ 3161.0usft
 MD Reference: GRND+27 SKID @ 3161.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.0	6.00	49.70	5,186.4	172.4	203.3	-171.0	0.00	0.00	0.00
5,300.0	6.00	49.70	5,285.8	179.2	211.3	-177.7	0.00	0.00	0.00
5,400.0	6.00	49.70	5,385.3	185.9	219.2	-184.4	0.00	0.00	0.00
5,500.0	6.00	49.70	5,484.8	192.7	227.2	-191.1	0.00	0.00	0.00
5,600.0	6.00	49.70	5,584.2	199.5	235.2	-197.8	0.00	0.00	0.00
5,700.0	6.00	49.70	5,683.7	206.2	243.2	-204.5	0.00	0.00	0.00
5,800.0	6.00	49.70	5,783.1	213.0	251.1	-211.2	0.00	0.00	0.00
5,900.0	6.00	49.70	5,882.6	219.7	259.1	-217.9	0.00	0.00	0.00
5,945.0	6.00	49.70	5,927.3	222.8	262.7	-220.9	0.00	0.00	0.00
6,000.0	5.18	49.70	5,982.1	226.2	266.8	-224.4	1.50	-1.50	0.00
6,100.0	3.68	49.70	6,081.8	231.2	272.7	-229.3	1.50	-1.50	0.00
6,200.0	2.18	49.70	6,181.6	234.5	276.6	-232.6	1.50	-1.50	0.00
6,300.0	0.68	49.70	6,281.6	236.1	278.5	-234.2	1.50	-1.50	0.00
6,345.0	0.00	0.00	6,326.6	236.3	278.7	-234.4	1.50	-1.50	0.00
6,400.0	0.00	0.00	6,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
6,700.0	0.00	0.00	6,681.6	236.3	278.7	-234.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,781.6	236.3	278.7	-234.4	0.00	0.00	0.00
6,900.0	0.00	0.00	6,881.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,981.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,100.0	0.00	0.00	7,081.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,200.0	0.00	0.00	7,181.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,300.0	0.00	0.00	7,281.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,500.0	0.00	0.00	7,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,700.0	0.00	0.00	7,681.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,800.0	0.00	0.00	7,781.6	236.3	278.7	-234.4	0.00	0.00	0.00
7,900.0	0.00	0.00	7,881.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,000.0	0.00	0.00	7,981.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,100.0	0.00	0.00	8,081.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,200.0	0.00	0.00	8,181.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,300.0	0.00	0.00	8,281.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,400.0	0.00	0.00	8,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,500.0	0.00	0.00	8,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,600.0	0.00	0.00	8,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,700.0	0.00	0.00	8,681.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,800.0	0.00	0.00	8,781.6	236.3	278.7	-234.4	0.00	0.00	0.00
8,900.0	0.00	0.00	8,881.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,000.0	0.00	0.00	8,981.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,100.0	0.00	0.00	9,081.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,200.0	0.00	0.00	9,181.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,300.0	0.00	0.00	9,281.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,400.0	0.00	0.00	9,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,500.0	0.00	0.00	9,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,600.0	0.00	0.00	9,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,700.0	0.00	0.00	9,681.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,800.0	0.00	0.00	9,781.6	236.3	278.7	-234.4	0.00	0.00	0.00
9,900.0	0.00	0.00	9,881.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,000.0	0.00	0.00	9,981.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,100.0	0.00	0.00	10,081.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,200.0	0.00	0.00	10,181.6	236.3	278.7	-234.4	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Site WAR HAMMER 25 FEDERAL COM 10H - P
Company:	ConocoPhillips MCBU	TVD Reference:	GRND+27 SKID @ 3161.0usft
Project:	Permian Delaware Hz New Mexico	MD Reference:	GRND+27 SKID @ 3161.0usft
Site:	WAR HAMMER 25 FEDERAL COM 10H - PS	North Reference:	Grid
Well:	War Hammer 25 Federal Com 10H - PS	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Prelim Design 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.0	0.00	0.00	10,281.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,400.0	0.00	0.00	10,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,500.0	0.00	0.00	10,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,600.0	0.00	0.00	10,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,700.0	0.00	0.00	10,681.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,800.0	0.00	0.00	10,781.6	236.3	278.7	-234.4	0.00	0.00	0.00
10,900.0	0.00	0.00	10,881.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,000.0	0.00	0.00	10,981.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,100.0	0.00	0.00	11,081.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,200.0	0.00	0.00	11,181.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,300.0	0.00	0.00	11,281.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,400.0	0.00	0.00	11,381.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,500.0	0.00	0.00	11,481.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,600.0	0.00	0.00	11,581.6	236.3	278.7	-234.4	0.00	0.00	0.00
11,690.5	0.00	0.00	11,672.1	236.3	278.7	-234.4	0.00	0.00	0.00
11,700.0	0.95	179.60	11,681.6	236.2	278.7	-234.3	10.00	10.00	0.00
11,800.0	10.95	179.60	11,780.9	225.9	278.7	-223.9	10.00	10.00	0.00
11,900.0	20.95	179.60	11,876.9	198.4	278.9	-196.5	10.00	10.00	0.00
12,000.0	30.95	179.60	11,966.8	154.7	279.2	-152.8	10.00	10.00	0.00
12,100.0	40.95	179.60	12,047.6	96.1	279.6	-94.2	10.00	10.00	0.00
12,200.0	50.95	179.60	12,117.0	24.3	280.1	-22.4	10.00	10.00	0.00
12,300.0	60.95	179.60	12,173.0	-58.4	280.7	60.4	10.00	10.00	0.00
12,400.0	70.95	179.60	12,213.7	-149.6	281.3	151.6	10.00	10.00	0.00
12,500.0	80.95	179.60	12,237.9	-246.5	282.0	248.5	10.00	10.00	0.00
12,590.5	90.00	179.60	12,245.0	-338.6	282.7	338.6	10.00	10.00	0.00
12,600.0	90.00	179.60	12,245.0	-346.1	282.7	348.1	0.00	0.00	0.00
12,700.0	90.00	179.60	12,245.0	-446.1	283.4	448.1	0.00	0.00	0.00
12,800.0	90.00	179.60	12,245.0	-546.1	284.1	548.1	0.00	0.00	0.00
12,900.0	90.00	179.60	12,245.0	-646.1	284.8	648.1	0.00	0.00	0.00
13,000.0	90.00	179.60	12,245.0	-746.1	285.5	748.1	0.00	0.00	0.00
13,100.0	90.00	179.60	12,245.0	-846.1	286.2	848.1	0.00	0.00	0.00
13,200.0	90.00	179.60	12,245.0	-946.1	286.9	948.1	0.00	0.00	0.00
13,300.0	90.00	179.60	12,245.0	-1,046.1	287.6	1,048.1	0.00	0.00	0.00
13,400.0	90.00	179.60	12,245.0	-1,146.1	288.3	1,148.1	0.00	0.00	0.00
13,500.0	90.00	179.60	12,245.0	-1,246.1	289.0	1,248.1	0.00	0.00	0.00
13,600.0	90.00	179.60	12,245.0	-1,346.1	289.7	1,348.1	0.00	0.00	0.00
13,700.0	90.00	179.60	12,245.0	-1,446.1	290.4	1,448.1	0.00	0.00	0.00
13,800.0	90.00	179.60	12,245.0	-1,546.1	291.1	1,548.1	0.00	0.00	0.00
13,900.0	90.00	179.60	12,245.0	-1,646.1	291.8	1,648.1	0.00	0.00	0.00
14,000.0	90.00	179.60	12,245.0	-1,746.1	292.5	1,748.1	0.00	0.00	0.00
14,100.0	90.00	179.60	12,245.0	-1,846.1	293.2	1,848.1	0.00	0.00	0.00
14,200.0	90.00	179.60	12,245.0	-1,946.1	293.9	1,948.1	0.00	0.00	0.00
14,300.0	90.00	179.60	12,245.0	-2,046.1	294.6	2,048.1	0.00	0.00	0.00
14,400.0	90.00	179.60	12,245.0	-2,146.1	295.3	2,148.1	0.00	0.00	0.00
14,500.0	90.00	179.60	12,245.0	-2,246.1	296.0	2,248.1	0.00	0.00	0.00
14,600.0	90.00	179.60	12,245.0	-2,346.1	296.7	2,348.1	0.00	0.00	0.00
14,700.0	90.00	179.60	12,245.0	-2,446.1	297.4	2,448.1	0.00	0.00	0.00
14,800.0	90.00	179.60	12,245.0	-2,546.1	298.1	2,548.1	0.00	0.00	0.00
14,900.0	90.00	179.60	12,245.0	-2,646.1	298.8	2,648.1	0.00	0.00	0.00
15,000.0	90.00	179.60	12,245.0	-2,746.1	299.5	2,748.1	0.00	0.00	0.00
15,100.0	90.00	179.60	12,245.0	-2,846.1	300.2	2,848.1	0.00	0.00	0.00
15,200.0	90.00	179.60	12,245.0	-2,946.1	300.9	2,948.1	0.00	0.00	0.00
15,300.0	90.00	179.60	12,245.0	-3,046.1	301.6	3,048.1	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database: EDM Central Planning
 Company: ConocoPhillips MCBU
 Project: Permian Delaware Hz New Mexico
 Site: WAR HAMMER 25 FEDERAL COM 10H - PS
 Well: War Hammer 25 Federal Com 10H - PS
 Wellbore: Original Hole
 Design: Prelim Design 1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Site WAR HAMMER 25 FEDERAL COM 10H - P
 GRND+27 SKID @ 3161.0usft
 GRND+27 SKID @ 3161.0usft
 Grid
 Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,400.0	90.00	179.60	12,245.0	-3,146.1	302.3	3,148.1	0.00	0.00	0.00
15,500.0	90.00	179.60	12,245.0	-3,246.1	303.0	3,248.1	0.00	0.00	0.00
15,600.0	90.00	179.60	12,245.0	-3,346.1	303.7	3,348.1	0.00	0.00	0.00
15,700.0	90.00	179.60	12,245.0	-3,446.1	304.4	3,448.1	0.00	0.00	0.00
15,800.0	90.00	179.60	12,245.0	-3,546.1	305.1	3,548.1	0.00	0.00	0.00
15,900.0	90.00	179.60	12,245.0	-3,646.0	305.8	3,648.1	0.00	0.00	0.00
16,000.0	90.00	179.60	12,245.0	-3,746.0	306.5	3,748.1	0.00	0.00	0.00
16,100.0	90.00	179.60	12,245.0	-3,846.0	307.2	3,848.1	0.00	0.00	0.00
16,200.0	90.00	179.60	12,245.0	-3,946.0	307.9	3,948.1	0.00	0.00	0.00
16,300.0	90.00	179.60	12,245.0	-4,046.0	308.6	4,048.1	0.00	0.00	0.00
16,400.0	90.00	179.60	12,245.0	-4,146.0	309.3	4,148.1	0.00	0.00	0.00
16,500.0	90.00	179.60	12,245.0	-4,246.0	310.0	4,248.1	0.00	0.00	0.00
16,600.0	90.00	179.60	12,245.0	-4,346.0	310.7	4,348.1	0.00	0.00	0.00
16,700.0	90.00	179.60	12,245.0	-4,446.0	311.4	4,448.1	0.00	0.00	0.00
16,800.0	90.00	179.60	12,245.0	-4,546.0	312.1	4,548.1	0.00	0.00	0.00
16,900.0	90.00	179.60	12,245.0	-4,646.0	312.8	4,648.1	0.00	0.00	0.00
17,000.0	90.00	179.60	12,245.0	-4,746.0	313.5	4,748.1	0.00	0.00	0.00
17,100.0	90.00	179.60	12,245.0	-4,846.0	314.2	4,848.1	0.00	0.00	0.00
17,200.0	90.00	179.60	12,245.0	-4,946.0	314.9	4,948.1	0.00	0.00	0.00
17,300.0	90.00	179.60	12,245.0	-5,046.0	315.6	5,048.1	0.00	0.00	0.00
17,400.0	90.00	179.60	12,245.0	-5,146.0	316.3	5,148.1	0.00	0.00	0.00
17,500.0	90.00	179.60	12,245.0	-5,246.0	317.0	5,248.1	0.00	0.00	0.00
17,600.0	90.00	179.60	12,245.0	-5,346.0	317.7	5,348.1	0.00	0.00	0.00
17,700.0	90.00	179.60	12,245.0	-5,446.0	318.4	5,448.1	0.00	0.00	0.00
17,800.0	90.00	179.60	12,245.0	-5,546.0	319.1	5,548.1	0.00	0.00	0.00
17,900.0	90.00	179.60	12,245.0	-5,646.0	319.8	5,648.1	0.00	0.00	0.00
18,000.0	90.00	179.60	12,245.0	-5,746.0	320.5	5,748.1	0.00	0.00	0.00
18,100.0	90.00	179.60	12,245.0	-5,846.0	321.2	5,848.1	0.00	0.00	0.00
18,200.0	90.00	179.60	12,245.0	-5,946.0	321.8	5,948.1	0.00	0.00	0.00
18,300.0	90.00	179.60	12,245.0	-6,046.0	322.5	6,048.1	0.00	0.00	0.00
18,400.0	90.00	179.60	12,245.0	-6,146.0	323.2	6,148.1	0.00	0.00	0.00
18,500.0	90.00	179.60	12,245.0	-6,246.0	323.9	6,248.1	0.00	0.00	0.00
18,600.0	90.00	179.60	12,245.0	-6,346.0	324.6	6,348.1	0.00	0.00	0.00
18,700.0	90.00	179.60	12,245.0	-6,446.0	325.3	6,448.1	0.00	0.00	0.00
18,800.0	90.00	179.60	12,245.0	-6,546.0	326.0	6,548.1	0.00	0.00	0.00
18,900.0	90.00	179.60	12,245.0	-6,646.0	326.7	6,648.1	0.00	0.00	0.00
19,000.0	90.00	179.60	12,245.0	-6,746.0	327.4	6,748.1	0.00	0.00	0.00
19,100.0	90.00	179.60	12,245.0	-6,846.0	328.1	6,848.1	0.00	0.00	0.00
19,200.0	90.00	179.60	12,245.0	-6,946.0	328.8	6,948.1	0.00	0.00	0.00
19,300.0	90.00	179.60	12,245.0	-7,046.0	329.5	7,048.1	0.00	0.00	0.00
19,400.0	90.00	179.60	12,245.0	-7,146.0	330.2	7,148.1	0.00	0.00	0.00
19,448.1	90.00	179.60	12,245.0	-7,194.1	330.6	7,196.2	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips MCBU
Project: Permian Delaware Hz New Mexico
Site: WAR HAMMER 25 FEDERAL COM 10H - PS
Well: War Hammer 25 Federal Com 10H - PS
Wellbore: Original Hole
Design: Prelim Design 1

Local Co-ordinate Reference: Site WAR HAMMER 25 FEDERAL COM 10H - P
TVD Reference: GRND+27 SKID @ 3161.0usft
MD Reference: GRND+27 SKID @ 3161.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WH_25_10H_FTP - plan misses target center by 70.5usft at 12316.2usft MD (12180.6 TVD, -72.7 N, 280.8 E) - Point	0.00	0.00	12,245.0	-44.0	280.3	371,689.28	719,913.68	32° 1' 11.651 N	103° 37' 25.597 W
WH_25_10H_BHL - plan hits target center - Point	0.00	0.00	12,245.0	-7,194.1	330.6	364,539.22	719,963.96	32° 0' 0.891 N	103° 37' 25.558 W
WH_25_10H_SL - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	371,733.28	719,633.39	32° 1' 12.105 N	103° 37' 28.849 W

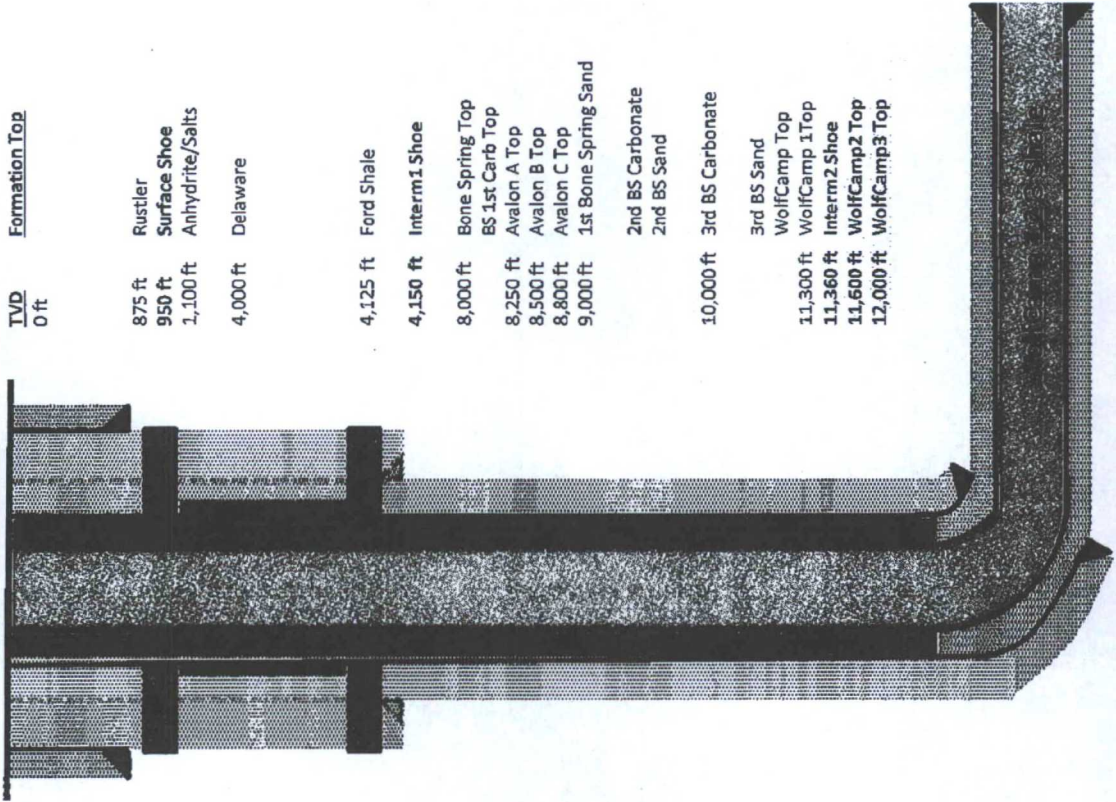
Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.0	1,000.0	13 3/8"	13-3/8	17-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,687.3	5,671.0	Cherry Canyon		0.00	
8,625.4	8,607.0	Bone Spring Top		0.00	
7,386.4	7,368.0	Brushy Canyon		0.00	
12,096.6	12,045.0	Wolfcamp1		0.00	
10,316.4	10,298.0	2nd Bone Spring Sand		0.00	
894.0	894.0	Rustler		0.00	
9,734.4	9,716.0	Avalon D		0.00	
3,293.2	3,290.0	Castile		0.00	
9,988.4	9,970.0	FBS Shale		0.00	
8,883.4	8,865.0	BS 1st Carb		0.00	
4,699.9	4,689.0	Delaware Top		0.00	
10,159.4	10,141.0	2nd Bone Spring Carb		0.00	
10,672.4	10,654.0	3rd BS Carb		0.00	
9,089.4	9,071.0	Avalon A		0.00	
11,855.7	11,835.0	Wolfcamp		0.00	
9,776.4	9,758.0	1st BS Sand		0.00	
11,507.4	11,489.0	3rd BS Sand		0.00	

Attachment #2 – Option not to run 9-5/8" Csg



TVD	Formation Top
0 ft	
875 ft	Rustler
950 ft	Surface Shoe
1,100 ft	Anhydrite/Salts
4,000 ft	Delaware
4,125 ft	Ford Shale
4,150 ft	Interm1 Shoe
8,000 ft	Bone Spring Top
8,250 ft	BS 1st Carb Top
8,500 ft	Avalon A Top
8,800 ft	Avalon B Top
9,000 ft	Avalon C Top
	1st Bone Spring Sand
	2nd BS Carbonate
	2nd BS Sand
10,000 ft	3rd BS Carbonate
	3rd BS Sand
	WolfCamp Top
11,300 ft	WolfCamp 1Top
11,360 ft	Interm2 Shoe
11,600 ft	WolfCamp2 Top
12,000 ft	WolfCamp3 Top

19,200 ft. TD
~6,500 ft Lateral

Surface Section:

- Objective: Protect fresh water horizons.
- Drill 17-1/2" hole to +/- 950 ft. "Rustler"
- Mud weight: 8.6 – 9.1 ppg FW-Native Mud
- Set 13-3/8" 54.5# J-55 BTC casing.
- Cement to surface.

Intermediate1 Section (Only for Contingency):

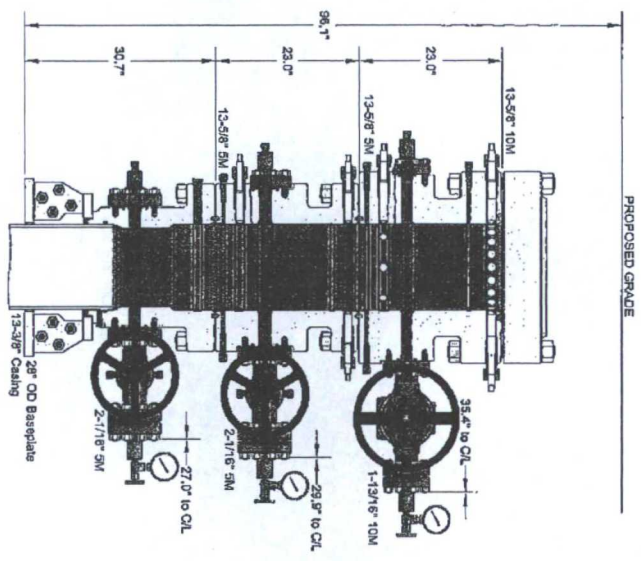
- Objective: Isolate the Salado Salt and Delaware Sand interval.
- Drill 12-1/4" hole to +/- 4,150 ft. "Ford Shale"
- Mud weight: 10.0 ppg Brine.
- Set 9-5/8" 40# L-80 BTC casing.
- Cement to surface.

Intermediate2 Section:

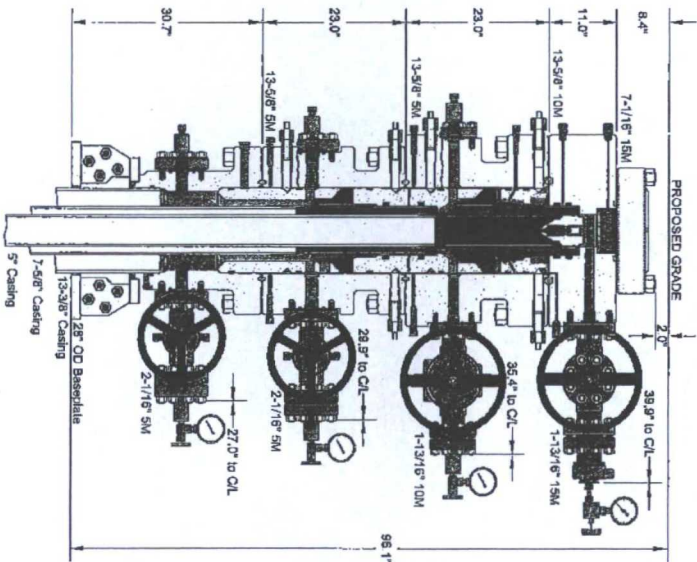
- Objective: Isolate depleted/weak formations above WC1.
- Drill 8-3/4" hole to +/- 11,360 ft. 110'-120' inside WC1 Top.
- Mud weight: 8.9 – 10.5 ppg Brine or OBM w/ 25 ppb WBS
- Set 7-5/8" 29.7# P-110 Tenaris W523 casing.
- Cement to surface.
- 2 or 3-Stage Contingency with 2ea. Packer/Stage Collars
- Bond Coat ~ 3000' of Csg covering the Delaware Sands

Production Section:

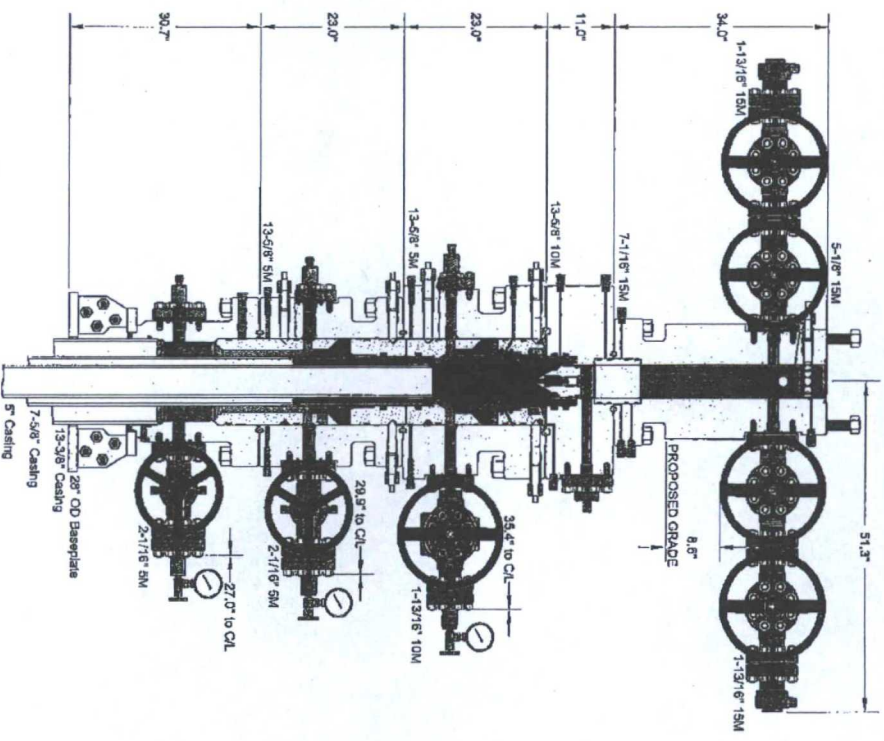
- Objective: Provide zonal isolation of production interval and provide medium for stimulation.
- Drill 6-3/4" hole to +/-18,000ft – 20,000ft. "Production TD"
- Mud Weight: 13.5 – 15.2 ppg OBM.
- Set 5" 18# P-110 TenBlue/TXP casing.
- Cement lap 500 ft above previous shoe (near KOP).



SPUD CONFIGURATION



DRILL & SKID CONFIGURATION



COMPLETION CONFIGURATION

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CACTUS WELLHEAD LLC		CONOCOPHILLIPS	
13-3/8" x 7-5/8" x 5" 5M MBS2 Wellhead System		3 STRING CONFIGURATION	
With 13-5/8" 10M x 7-1/16" 15M DBLHPS DSPA And		DRAWN	THH
7-1/16" 15M x 5-1/8" 15M CMT-FB-EN Tubing Head, 34" Tall		APPRV	09JUN15
		DRAWING NO.	ODE0000491-A

January 28 2014



Connection: Wedge 523™
Casing/Tubing: CAS

Size: 7.625 in.
Wall: 0.375 in.
Weight: 29.70 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

PIPE BODY DATA

GEOMETRY			
Nominal OD	7.625 in.	Nominal Weight	29.70 lbs/ft
Nominal ID	6.875 in.	Wall Thickness	0.375 in.
Plain End Weight	29.06 lbs/ft	Standard Drift Diameter	6.750 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	940 x 1000 lbs	Internal Yield	9470 psi
Collapse	5350 psi	SMYS	110000 psi

WEDGE 523™ CONNECTION DATA

GEOMETRY			
Connection OD	7.752 in.	Connection ID	6.800 in.
Critical Section Area	6.021 sq. in.	Threads per in.	3.29
Make-Up Loss	4.420 in.		
PERFORMANCE			
Tension Efficiency	70.5 %	Joint Yield Strength	663 x 1000 lbs
Compression Strength	768 x 1000 lbs	Compression Efficiency	81.7 %
External Pressure Capacity	5350 psi	Internal Pressure Capacity	9470 psi
		Bending	47 °/100 ft
MAKE-UP TORQUES			
Minimum	9900 ft-lbs	Target	11900 ft-lbs
		Maximum (±)	17300 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	52000 ft-lbs	Yield Torque	78000 ft-lbs

BLANKING DIMENSIONSBlanking Dimensions

* If you need to use torque values that are higher than the maximum indicated, please contact a local Tenaris technical sales representative.

October 21 2014



Connection: Blue®
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 5.000 in.
Wall: 0.362 in.
Weight: 18.00 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

PIPE BODY DATA

GEOMETRY			
Nominal OD	5.000 in.	Nominal Weight	18.00 lbs/ft
Nominal ID	4.276 in.	Wall Thickness	0.362 in.
Plain End Weight	17.95 lbs/ft	Standard Drift Diameter	4.151 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	580 x 1000 lbs	Internal Yield	13940 psi
Collapse	13470 psi	SMYS	110000 psi

BLUE® CONNECTION DATA

GEOMETRY			
Connection OD	5.630 in.	Coupling Length	10.551 in.
Critical Section Area	5.275 sq. in.	Make-Up Loss	4.579 in.
		Connection ID	4.264 in.
		Threads per in.	5.00
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	580 x 1000 lbs
Compression Efficiency	100 %	Compression Strength	580 x 1000 lbs
External Pressure Capacity	13470 psi	Internal Pressure Capacity	13940 psi
		Bending	101 °/100 ft

MAKE-UP TORQUES

Minimum	6400 ft-lbs	Target	7110 ft-lbs	Maximum	7820 ft-lbs
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OPERATIONAL LIMIT TORQUES

Operating Torque	ASK	Yield Torque	17600 ft-lbs
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SHOULDER TORQUES

Minimum	1070 ft-lbs	Maximum	6040 ft-lbs
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BLANKING DIMENSIONS

Blanking Dimensions

Datasheet is also valid for Special Bevel option when applicable.

December 18 2014



Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 5.000 in.
Wall: 0.362 in.
Weight: 18.00 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

PIPE BODY DATA

GEOMETRY

Nominal OD	5.000 in.	Nominal Weight	18.00 lbs/ft	Standard Drift Diameter	4.151 in.
Nominal ID	4.276 in.	Wall Thickness	0.362 in.	Special Drift Diameter	N/A
Plain End Weight	17.95 lbs/ft				

PERFORMANCE

Body Yield Strength	580 x 1000 lbs	Internal Yield	13940 psi	SMYS	110000 psi
Collapse	13470 psi				

TENARISXP™ BTC CONNECTION DATA

GEOMETRY

Connection OD	5.720 in.	Coupling Length	9.325 in.	Connection ID	4.264 in.
Critical Section Area	5.275 sq. in.	Threads per in.	5.00	Make-Up Loss	4.141 in.

PERFORMANCE

Tension Efficiency	100 %	Joint Yield Strength	580 x 1000 lbs	Internal Pressure Capacity ⁽¹⁾	13940 psi
Structural Compression Efficiency	100 %	Structural Compression Strength	580 x 1000 lbs	Structural Bending ⁽²⁾	101 °/100 ft
External Pressure Capacity	13470 psi				

ESTIMATED MAKE-UP TORQUES⁽³⁾

Minimum	N/A ft-lbs	Target	N/A ft-lbs	Maximum	N/A ft-lbs
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OPERATIONAL LIMIT TORQUES

Operating Torque	ASK	Yield Torque	N/A ft-lbs		
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BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com