

HOBBS OCD

OCD-HOBBS

ATG-11-894

OCT 27 2011

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 27508
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator ConocoPhillips Company (217817)		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 3300 N "A" St, Bldg 6 Midland, TX 79705		8. Lease Name and Well No. Wilder Federal 28 (38787) 2H
3b. Phone No. (include area code) (432)688-6913		9. API Well No. 30-025-40329
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface UL B, Sec 28, T26S, R32E 330 FNL 2160 FEL At proposed prod. zone UL O, Sec 28, T26S, R32E 330 FSL 2160 FEL		10. Field and Pool or Exploratory WILDCAT G-05 S 263208P Red Hills; Bone Spring (97878)
11. Sec., T. R. M. or Blk. and Survey or Area 28, T26S, R32E		12. County or Parish Lea
13. State NM		14. Distance in miles and direction from nearest town or post office* 19 miles North East of Orla, TX
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 330 FNL	16. No. of acres in lease 640	17. Spacing Unit dedicated to this well 80 ACRES
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1354' From Wilder Fed 28 #1	19. Proposed Depth 13,461' MD/9364' TVD	20. BLM/BIA Bond No. on file ES 0085
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3156' GL	22. Approximate date work will start* 11/01/2011	23. Estimated duration 44 Days
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature B. D. Maiorino	Name (Printed/Typed) Brian D Maiorino	Date 09/26/2011
Title Regulatory Specialist		
Approved by (Signature) Is/ Don Peterson	Name (Printed/Typed)	Date OCT 25 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval 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.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Artec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Frances Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-40329	Pool Code SLO20 97830	Well Name WILDCAT G-05	Pool Name S263208P
Property Code 38787	Property Name WILDER FEDERAL (28)	Well Number 2H	
OGRID No. 217817	Operator Name CONOCOPHILLIPS	Elevation 3156'	

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	28	26-S	32-E		330	NORTH	2160	EAST	LEA

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
O	28	26-S	32-E		330	SOUTH	2160	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
80			

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

NOTE: 1) Plane Coordinates and Bearings shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.	(Surface Location) Plane Coordinate X = 703,150.4 Y = 371,557.0	330'	2160'
	(Bottom Hole Location) Plane Coordinate X = 703,174.1 Y = 366,873.4	330'	2160'

S 01°17'25" E - 4684.6'

OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

B. J. ... 9/14/11
Signature Date
Brian Mariano
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

September 13, 2011
Date of Survey
Signature & Seal of Professional Surveyor
W.O. Num 2011-1442
Certificate No. **MACON McDONALD** 12185

OPERATORS NAME: ConocoPhillips Company

LEASE NAME AND WELL NO.:

Wilder Federal 28 #2H

SURFACE LOCATION:

330 FNL & 2160 FEL (NWNE) of Section 28-26S-32E

BHL:

330 FSL & 2160 FEL (SWSE) of Section 28-26S-32E

FIELD NAME:

Red Hills

POOL NAME:

Bone Spring

COUNTY:

Lea County, New Mexico

Lease Serial No. NM 27508

The following information is to supplement the Application for Permit to Drill.

DRILLING PLAN

1. Name and estimated tops of all geologic groups, formations, members, or zones.

Quaternary	Surface	Water
Rustler	764	Salt
Delaware Top	4373	water
Bone Spring	8307	Oil/gas/water
Bone Spring 1 st carbonate top	8532	Oil/gas/water
Bone Spring 1 st carbonate base	8578	Oil/gas/water
KOP	8600	Oil/gas/water
Avalon A shale Top	8794	Oil/gas/water
Avalon A shale base	9019	Oil/gas/water
Avalon B zone top	9019	Oil/gas/water
Avalon B zone base	9174	Oil/gas/water
Avalon C shale top	9174	Oil/gas/water
Avalon C Shale horizontal upper target limit	9337	Oil/gas/water
Avalon C Shale Horizontal Target Center	9362	Oil/gas/water
Avalon C Shale Horizontal	9387	Oil/gas/water
Avalon C Shale Horizontal upper target limit	9339	Oil/gas/water
Terminus; Avalon C Shale Horizontal Target Center	9364	Oil/gas/water
Avalon C Shale Horizontal Lower Target Limit	9390	Oil/gas/water

2. Estimated depths and thickness of formations, members or zones potentially containing usable water, oil, gas, or prospectively valuable deposits of other minerals that the operator expects to encounter, and the operator's plans for protecting such resources.

Quanternary	Surface (water)
Rustler	4373 (Salt)

All of the water bearing and salt formations identified above will be protected by the intermediate setting of the 9-5/8" casing and circulating of cement to surface

Bone Spring	8307-9364 TVD (gas & gas/oil)
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The geologic tops identified above from the Bone Spring/Avalon are part of the target formation.

3. The operator's minimum specifications for blowout prevention equipment and diverter systems to be used, including size, pressure rating, configuration, and the testing procedure and frequency.

→ A 5000# system will be installed, used, maintained, and tested accordingly. After nipping up, and every 30 days thereafter, preventors will be pressure tested. BOP will be inspected and operated at least daily to insure good working order. All pressure and operating tests will be recorded on the daily drilling reports. Ram Type preventors will be tested to rated working pressure. Annular type preventer(s) shall be tested to 50% of the approved BOP stack working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer. ConocoPhillips Company request a variance to the testing as follows: The 13 3/8 surface casing will be set at a depth of 740' and a Wood Group Pressure Control SH2 type wellhead will be installed on the 13 3/8" casing string. The SH2 type wellhead is a "multi-bowl" type wellhead system that allows the landing of multiple casing strings without having to remove the BOP to install additional wellhead components. This specific wellhead design consists of a 13 3/8" SOW x 13 5/8" 3M psi lower flange assembly with a 13 5/8" x 5M psi upper flange assembly. For the initial installation on the 13 3/8" surface casing, the maximum pressure application to the wellhead system is limited by the 3M psi flange rating. A planned intermediate casing string (9 5/8" 40# L80 BTC) is designed to be set at a depth of 4350' and isolated in the wellhead with a mandrel hanger and pack off seal system. Once installed, the 3M psi wellhead flange will be isolated and all subsequent BOPE pressure testing can be performed to 5000 psi, consistent with the requirements of a 5M system as set forth in Onshore Order No. 2 and the APD Conditions of Approval. The SH2 wellhead schematic and proposed BOPE configuration is attached for reference. COP also request approval for use of one flex hose on the drilling rig. **See Attached BOPE Schematic and Testing Information and hose specifications.**

location & tie downs
not indicated.

4. The proposed casing program including size, grade, weights, type of thread and coupling, and the setting depth of each string and its condition. For exploratory wells, or for wells as otherwise specified by the authorized officer, the operator shall include the minimum design factors for tensions, burst, and collapse that are incorporated into the casing design. In cases where tapered casing strings are utilized, the operator shall also include and/or setting depths of each portion.

NEW CASING:

Surface: 17 1/2" hole, 13 3/8" 54.5# J-55 STC csg, set @ ~~740'~~ ^{+ 775'} Drill out with 12 1/4" bit and perform shoe test to 11.0 ppg MWE. see COA

Burst: 4.39/Collapse: 1.88/Tension: 5.98/9.13

Inter 1: 12 1/4" hole, 9 5/8" 40# L80 BTC csg, set @ 4350'

Burst: 2.43/Collapse: 1.4/Tension: 5.45/6.44

Inter 2: 8 3/4" hole, 7" 26# P110 BTC csg set @ 9800' MD/9362' TVD

Burst: 2.29/Collapse: 1.74/Tension: 2.81/3.31

Production Liner (Uncemented): 6 1/8" hole, 4 1/2" 18.8# T-95 TB csg set @ 8550'-13,461' Burst 3.25/Collapse 3.36/Tension 5.78/6.80

The rig will run a Packers Plus StackFrac HD or Sliding Sleeve System (spec sheet for T95 casing attached)

The Plan is to set casing and drill open hole in a southern direction to a proposed bottom hole location of 330 FSL 2160 FEL Unit letter "O" Section 28, 26S, 32E

5. The amount and type(s) of cement, including anticipated additives to be used in setting each casing string, shall be described. If stage cementing techniques are to be employed, the setting depth of the stage collars and amount and type of cement, including additives, and preflush amounts to be used in each stage, shall be given. The expected linear fill-up of each cemented string, or each stage when utilizing stage-cementing techniques, shall also be given.

- a. 13-3/8" Csg: lead w/480 sx Class C cement + HalCem-C (Yield: 1.33 cft)
Tail w/230 sx Class C cement + 1 lbm/sk EconoChem-HRLTRRC (Yield 1.85 cft/sk)
Circulate to surface. Based on 17-1/2" OH, with 145% excess
- b. 9-5/8" Csg: lead w/1390 sx 50/50 Class C Poz + 2.5 gal/bbl WG-19 +
1 lbm/sk EconoCem-C (Yield: 2.48 cft/sk) Tail w/350 sx 'H' + HalCem C
(Yield 1.33 cft/sk) Circulate to surface. Based on 12.25" hole with 150% excess
- c. 7" Csg lead w/420 sx 50/50 Class C Poz + 2.5 gal/bbl WG-19 +
1 lbm/sk EconoCem-C (Yield: 2.00 cft/sk) Tail w/79 sx 'H' + HalCem C
(Yield 1.2 cft/sk) circulate cement 500' into 9-5/8" casing. Based on 8-3/4"
Hole w/80% excess
- d. 4-1/2" Liner: No cement is to be pumped

6. The anticipated type and characteristics of the proposed circulating medium or mediums proposed for the drilling of each wellbore section, the quantities and types of mud and weighting material to be maintained, and the monitoring equipment to be used on the circulating system.

Mud Program:

0-740	Aquagel/Spudmud	8.9#	Vis 32-36	WL: NC
740-4350	Brine	10.1#	Vis 28-30	WL: 5-8
4350-9800	Cut Brine	10#	Vis 28-36	WL: 5-8
9800-13,461	Cut Brine	10#	Vis 30-40	WL: <=5

Gas detection equipment and pit level flow monitoring equipment will be on location. ConocoPhillips Company will maintain sufficient mud and weighted material on location at all times.

7. The anticipated testing, logging, and coring procedures to be used, including drill stem testing procedures, equipment, and safety measures.

- a. DST Program: None
- b. Mud Logging: Two-Man – 4373'-13461' Horizontal Lateral
Logs to be run: Open Hole-4350-740'
GR-MWD 13500-4350

8. List the expected bottom-hole pressure and any anticipated abnormal pressures, temperatures or potential hazards that are expected to be encountered, such as lost circulation zones and hydrogen sulfide. The operator's plans for mitigating such hazards shall be discussed. Should the potential to encounter hydrogen sulfide exist, the mitigation procedures shall comply with the provisions of the BLM.

The expected pressure gradient is 0.433 psi/ft or 8.3 ppg equivalent
The average anticipated bottom hole pressure ranges on average 4360 psi.
No hydrogen sulfide is expected.

Any other facets of the proposed operation which the operator wishes to be considered in reviewing the application.

Anticipated construction date of November 1, 2011. Construction of well pad and road will begin as soon as all agency approvals are obtained.

9. Address the proposed directional design, plan view, and vertical section in true vertical and measured depth for directional, horizontal, or coil tubing operations.

The proposed directional/horizontal documents are attached.

BH temperature/
gradient?

ConocoPhillips MCBU

Permian Hz Bonespring/Avalon

Wilder Federal 28

Wilder Federal 28 #1H

Wilder Federal 28 #2H

Plan: Plan #1

Standard Planning Report

19 September, 2011

(Preliminary Plan)

L. Serrano.

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Wilder Federal 28 #1H
Company:	ConocoPhillips MCBU	TVD Reference:	WELL @ 3156.0ft (Original Well Elev)
Project:	Permian Hz Bonespring/Avalon	MD Reference:	WELL @ 3156.0ft (Original Well Elev)
Site:	Wilder Federal 28	North Reference:	True
Well:	Wilder Federal 28 #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wilder Federal 28 #2H		
Design:	Plan #1		

Project:	Permian Hz Bonespring/Avalon		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas South Central 4204		

Site:	Wilder Federal 28		
Site Position:		Northing:	m
From:	None	Easting:	m
Position Uncertainty:	0.0 ft	Slot Radius:	in
		Latitude:	
		Longitude:	
		Grid Convergence:	0.00 °

Well:	Wilder Federal 28 #1H		
Well Position	+N/-S	0.0 ft	Northing: 0.00 m
	+E/-W	0.0 ft	Easting: 0.00 m
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	27° 41' 16.664 N
		Longitude:	105° 10' 51.259 W
		Ground Level:	3,134.0 ft

Wellbore:	Wilder Federal 28 #2H		
Magnetics	Model Name	Sample Date	Declination (°)
	BGGM2011	9/19/2011	7.90
			Dip Angle (°)
			55.40
			Field Strength (nT)
			45,583

Design:	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction (°)
			179.71

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips MCBU
Project: Permian Hz Bonespring/Avalon
Site: Wilder Federal 28
Well: Wilder Federal 28 #1H
Wellbore: Wilder Federal 28 #2H
Design: Plan #1

Local Co-ordinate Reference: Well Wilder Federal 28 #1H
TVD Reference: WELL @ 3156.0ft (Original Well Elev)
MD Reference: WELL @ 3156.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,700.0	3.78	179.71	8,693.7	-286.9	1.5	0.04	0.04	0.00	179.71	
8,750.0	7.78	179.71	8,743.4	-291.9	1.5	8.00	8.00	0.00	0.00	
8,800.0	11.78	179.71	8,792.7	-300.4	1.5	8.00	8.00	0.00	0.00	
8,850.0	15.78	179.71	8,841.3	-312.3	1.6	8.00	8.00	0.00	0.00	
8,900.0	19.78	179.71	8,888.9	-327.6	1.7	8.00	8.00	0.00	0.00	
8,950.0	23.78	179.71	8,935.3	-346.1	1.8	8.00	8.00	0.00	0.00	
9,000.0	27.78	179.71	8,980.3	-367.9	1.9	8.00	8.00	0.00	0.00	
9,050.0	31.78	179.71	9,023.7	-392.7	2.0	8.00	8.00	0.00	0.00	
9,100.0	35.78	179.71	9,065.2	-420.5	2.1	8.00	8.00	0.00	0.00	
9,150.0	39.78	179.71	9,104.7	-451.1	2.3	8.00	8.00	0.00	0.00	
9,200.0	43.78	179.71	9,142.0	-484.4	2.5	8.00	8.00	0.00	0.00	
9,250.0	47.78	179.71	9,176.9	-520.2	2.6	8.00	8.00	0.00	0.00	
9,300.0	51.78	179.71	9,209.2	-558.4	2.8	8.00	8.00	0.00	0.00	
9,350.0	55.78	179.71	9,238.7	-598.7	3.0	8.00	8.00	0.00	0.00	
9,400.0	59.78	179.71	9,265.4	-641.0	3.2	8.00	8.00	0.00	0.00	
9,450.0	63.78	179.71	9,289.0	-685.1	3.5	8.00	8.00	0.00	0.00	
9,500.0	67.78	179.71	9,309.5	-730.7	3.7	8.00	8.00	0.00	0.00	
9,550.0	71.78	179.71	9,326.8	-777.6	3.9	8.00	8.00	0.00	0.00	
9,600.0	75.78	179.71	9,340.7	-825.6	4.2	8.00	8.00	0.00	0.00	
9,650.0	79.78	179.71	9,351.3	-874.4	4.4	8.00	8.00	0.00	0.00	
9,700.0	83.78	179.71	9,358.5	-923.9	4.7	8.00	8.00	0.00	0.00	
9,750.0	87.78	179.71	9,362.2	-973.8	4.9	8.00	8.00	0.00	0.00	
9,777.8	90.00	179.71	9,362.7	-1,001.6	5.1	7.99	7.99	0.00	0.00	
9,800.0	90.00	179.71	9,362.7	-1,023.8	5.2	0.00	0.00	0.00	0.00	
9,900.0	90.00	179.71	9,362.7	-1,123.8	5.7	0.00	0.00	0.00	0.00	
10,000.0	90.00	179.71	9,362.7	-1,223.8	6.2	0.00	0.00	0.00	0.00	
10,100.0	90.00	179.71	9,362.7	-1,323.8	6.7	0.00	0.00	0.00	0.00	
10,200.0	90.00	179.71	9,362.7	-1,423.8	7.2	0.00	0.00	0.00	0.00	
10,300.0	90.00	179.71	9,362.7	-1,523.8	7.7	0.00	0.00	0.00	0.00	
10,400.0	90.00	179.71	9,362.7	-1,623.8	8.2	0.00	0.00	0.00	0.00	
10,500.0	90.00	179.71	9,362.7	-1,723.8	8.7	0.00	0.00	0.00	0.00	
10,600.0	90.00	179.71	9,362.7	-1,823.7	9.2	0.00	0.00	0.00	0.00	
10,700.0	90.00	179.71	9,362.7	-1,923.7	9.7	0.00	0.00	0.00	0.00	
10,800.0	90.00	179.71	9,362.7	-2,023.7	10.2	0.00	0.00	0.00	0.00	
10,900.0	90.00	179.71	9,362.7	-2,123.7	10.7	0.00	0.00	0.00	0.00	
11,000.0	90.00	179.71	9,362.7	-2,223.7	11.3	0.00	0.00	0.00	0.00	
11,100.0	90.00	179.71	9,362.7	-2,323.7	11.8	0.00	0.00	0.00	0.00	
11,200.0	90.00	179.71	9,362.7	-2,423.7	12.3	0.00	0.00	0.00	0.00	
11,300.0	90.00	179.71	9,362.7	-2,523.7	12.8	0.00	0.00	0.00	0.00	
11,400.0	90.00	179.71	9,362.7	-2,623.7	13.3	0.00	0.00	0.00	0.00	
11,500.0	90.00	179.71	9,362.7	-2,723.7	13.8	0.00	0.00	0.00	0.00	
11,600.0	90.00	179.71	9,362.7	-2,823.7	14.3	0.00	0.00	0.00	0.00	
11,700.0	90.00	179.71	9,362.7	-2,923.7	14.8	0.00	0.00	0.00	0.00	
11,800.0	90.00	179.71	9,362.7	-3,023.7	15.3	0.00	0.00	0.00	0.00	
11,900.0	90.00	179.71	9,362.7	-3,123.7	15.8	0.00	0.00	0.00	0.00	
12,000.0	90.00	179.71	9,362.7	-3,223.7	16.3	0.00	0.00	0.00	0.00	
12,100.0	90.00	179.71	9,362.7	-3,323.7	16.8	0.00	0.00	0.00	0.00	

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Wilder Federal 28 #1H
Company:	ConocoPhillips MCBU	TVD Reference:	WELL @ 3156.0ft (Original Well Elev)
Project:	Permian Hz Bonespring/Avalon	MD Reference:	WELL @ 3156.0ft (Original Well Elev)
Site:	Wilder Federal 28	North Reference:	True
Well:	Wilder Federal 28 #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wilder Federal 28 #2H		
Design:	Plan #1		

12,200.0	90.00	179.71	9,362.7	-3,423.7	17.3	0.00	0.00	0.00	0.00
12,300.0	90.00	179.71	9,362.7	-3,523.7	17.8	0.00	0.00	0.00	0.00
12,400.0	90.00	179.71	9,362.7	-3,623.7	18.3	0.00	0.00	0.00	0.00
12,500.0	90.00	179.71	9,362.7	-3,723.7	18.8	0.00	0.00	0.00	0.00
12,600.0	90.00	179.71	9,362.7	-3,823.7	19.4	0.00	0.00	0.00	0.00
12,700.0	90.00	179.71	9,362.7	-3,923.7	19.9	0.00	0.00	0.00	0.00
12,800.0	90.00	179.71	9,362.7	-4,023.7	20.4	0.00	0.00	0.00	0.00
12,900.0	90.00	179.71	9,362.7	-4,123.7	20.9	0.00	0.00	0.00	0.00
13,000.0	90.00	179.71	9,362.7	-4,223.7	21.4	0.00	0.00	0.00	0.00
13,100.0	90.00	179.71	9,362.7	-4,323.7	21.9	0.00	0.00	0.00	0.00
13,461.0	90.00	179.71	9,362.7	-4,684.7	23.7	0.00	0.00	0.00	0.00

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips MCBU
Project: Permian Hz Bonespring/Avalon
Site: Wilder Federal 28
Well: Wilder Federal 28 #1H
Wellbore: Wilder Federal 28 #2H
Design: Plan #1

Local Co-ordinate Reference: Well Wilder Federal 28 #1H
TVD Reference: WELL @ 3156.0ft (Original Well Elev)
MD Reference: WELL @ 3156.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.04	179.71	100.0	0.0	0.0	0.0	0.04	0.04	0.00
200.0	0.09	179.71	200.0	-0.2	0.0	0.2	0.04	0.04	0.00
300.0	0.13	179.71	300.0	-0.3	0.0	0.3	0.04	0.04	0.00
400.0	0.17	179.71	400.0	-0.6	0.0	0.6	0.04	0.04	0.00
500.0	0.22	179.71	500.0	-0.9	0.0	0.9	0.04	0.04	0.00
600.0	0.26	179.71	600.0	-1.4	0.0	1.4	0.04	0.04	0.00
700.0	0.30	179.71	700.0	-1.9	0.0	1.9	0.04	0.04	0.00
800.0	0.35	179.71	800.0	-2.4	0.0	2.4	0.04	0.04	0.00
900.0	0.39	179.71	900.0	-3.1	0.0	3.1	0.04	0.04	0.00
1,000.0	0.43	179.71	1,000.0	-3.8	0.0	3.8	0.04	0.04	0.00
1,100.0	0.48	179.71	1,100.0	-4.6	0.0	4.6	0.04	0.04	0.00
1,200.0	0.52	179.71	1,200.0	-5.5	0.0	5.5	0.04	0.04	0.00
1,300.0	0.56	179.71	1,300.0	-6.4	0.0	6.4	0.04	0.04	0.00
1,400.0	0.61	179.71	1,400.0	-7.4	0.0	7.4	0.04	0.04	0.00
1,500.0	0.65	179.71	1,500.0	-8.5	0.0	8.5	0.04	0.04	0.00
1,600.0	0.70	179.71	1,600.0	-9.7	0.0	9.7	0.04	0.04	0.00
1,700.0	0.74	179.71	1,700.0	-11.0	0.1	11.0	0.04	0.04	0.00
1,800.0	0.78	179.71	1,799.9	-12.3	0.1	12.3	0.04	0.04	0.00
1,900.0	0.83	179.71	1,899.9	-13.7	0.1	13.7	0.04	0.04	0.00
2,000.0	0.87	179.71	1,999.9	-15.2	0.1	15.2	0.04	0.04	0.00
2,100.0	0.91	179.71	2,099.9	-16.7	0.1	16.7	0.04	0.04	0.00
2,200.0	0.96	179.71	2,199.9	-18.4	0.1	18.4	0.04	0.04	0.00
2,300.0	1.00	179.71	2,299.9	-20.1	0.1	20.1	0.04	0.04	0.00
2,400.0	1.04	179.71	2,399.9	-21.8	0.1	21.8	0.04	0.04	0.00
2,500.0	1.09	179.71	2,499.9	-23.7	0.1	23.7	0.04	0.04	0.00
2,600.0	1.13	179.71	2,599.8	-25.6	0.1	25.6	0.04	0.04	0.00
2,700.0	1.17	179.71	2,699.8	-27.6	0.1	27.6	0.04	0.04	0.00
2,800.0	1.22	179.71	2,799.8	-29.7	0.2	29.7	0.04	0.04	0.00
2,900.0	1.26	179.71	2,899.8	-31.9	0.2	31.9	0.04	0.04	0.00
3,000.0	1.30	179.71	2,999.7	-34.1	0.2	34.1	0.04	0.04	0.00
3,100.0	1.35	179.71	3,099.7	-36.4	0.2	36.4	0.04	0.04	0.00
3,200.0	1.39	179.71	3,199.7	-38.8	0.2	38.8	0.04	0.04	0.00
3,300.0	1.43	179.71	3,299.7	-41.3	0.2	41.3	0.04	0.04	0.00
3,400.0	1.48	179.71	3,399.6	-43.8	0.2	43.8	0.04	0.04	0.00
3,500.0	1.52	179.71	3,499.6	-46.4	0.2	46.4	0.04	0.04	0.00
3,600.0	1.56	179.71	3,599.6	-49.1	0.2	49.1	0.04	0.04	0.00
3,700.0	1.61	179.71	3,699.5	-51.9	0.3	51.9	0.04	0.04	0.00
3,800.0	1.65	179.71	3,799.5	-54.7	0.3	54.7	0.04	0.04	0.00
3,900.0	1.69	179.71	3,899.4	-57.7	0.3	57.7	0.04	0.04	0.00
4,000.0	1.74	179.71	3,999.4	-60.7	0.3	60.7	0.04	0.04	0.00
4,100.0	1.78	179.71	4,099.3	-63.7	0.3	63.7	0.04	0.04	0.00
4,200.0	1.82	179.71	4,199.3	-66.9	0.3	66.9	0.04	0.04	0.00
4,300.0	1.87	179.71	4,299.2	-70.1	0.4	70.1	0.04	0.04	0.00
4,400.0	1.91	179.71	4,399.2	-73.4	0.4	73.4	0.04	0.04	0.00
4,500.0	1.96	179.71	4,499.1	-76.8	0.4	76.8	0.04	0.04	0.00
4,600.0	2.00	179.71	4,599.1	-80.2	0.4	80.2	0.04	0.04	0.00
4,700.0	2.04	179.71	4,699.0	-83.7	0.4	83.7	0.04	0.04	0.00
4,800.0	2.09	179.71	4,798.9	-87.3	0.4	87.3	0.04	0.04	0.00
4,900.0	2.13	179.71	4,898.9	-91.0	0.5	91.0	0.04	0.04	0.00
5,000.0	2.17	179.71	4,998.8	-94.8	0.5	94.8	0.04	0.04	0.00
5,100.0	2.22	179.71	5,098.7	-98.6	0.5	98.6	0.04	0.04	0.00
5,200.0	2.26	179.71	5,198.7	-102.5	0.5	102.5	0.04	0.04	0.00
5,300.0	2.30	179.71	5,298.6	-106.5	0.5	106.5	0.04	0.04	0.00

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips MCBU
Project: Permian Hz Bonespring/Avalon
Site: Wilder Federal 28
Well: Wilder Federal 28 #1H
Wellbore: Wilder Federal 28 #2H
Design: Plan #1

Local Co-ordinate Reference: Well Wilder Federal 28 #1H
TVD Reference: WELL @ 3156.0ft (Original Well Elev)
MD Reference: WELL @ 3156.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.0	2.35	179.71	5,398.5	-110.5	0.6	110.5	0.04	0.04	0.00
5,500.0	2.39	179.71	5,498.4	-114.7	0.6	114.7	0.04	0.04	0.00
5,600.0	2.43	179.71	5,598.3	-118.9	0.6	118.9	0.04	0.04	0.00
5,700.0	2.48	179.71	5,698.2	-123.2	0.6	123.2	0.04	0.04	0.00
5,800.0	2.52	179.71	5,798.1	-127.5	0.6	127.5	0.04	0.04	0.00
5,900.0	2.56	179.71	5,898.0	-132.0	0.7	132.0	0.04	0.04	0.00
6,000.0	2.61	179.71	5,997.9	-136.5	0.7	136.5	0.04	0.04	0.00
6,100.0	2.65	179.71	6,097.8	-141.1	0.7	141.1	0.04	0.04	0.00
6,200.0	2.69	179.71	6,197.7	-145.7	0.7	145.7	0.04	0.04	0.00
6,300.0	2.74	179.71	6,297.6	-150.5	0.8	150.5	0.04	0.04	0.00
6,400.0	2.78	179.71	6,397.5	-155.3	0.8	155.3	0.04	0.04	0.00
6,500.0	2.82	179.71	6,497.4	-160.2	0.8	160.2	0.04	0.04	0.00
6,600.0	2.87	179.71	6,597.3	-165.1	0.8	165.1	0.04	0.04	0.00
6,700.0	2.91	179.71	6,697.1	-170.2	0.9	170.2	0.04	0.04	0.00
6,800.0	2.95	179.71	6,797.0	-175.3	0.9	175.3	0.04	0.04	0.00
6,900.0	3.00	179.71	6,896.9	-180.5	0.9	180.5	0.04	0.04	0.00
7,000.0	3.04	179.71	6,996.7	-185.7	0.9	185.7	0.04	0.04	0.00
7,100.0	3.08	179.71	7,096.6	-191.1	1.0	191.1	0.04	0.04	0.00
7,200.0	3.13	179.71	7,196.4	-196.5	1.0	196.5	0.04	0.04	0.00
7,300.0	3.17	179.71	7,296.3	-202.0	1.0	202.0	0.04	0.04	0.00
7,400.0	3.22	179.71	7,396.1	-207.6	1.1	207.6	0.04	0.04	0.00
7,500.0	3.26	179.71	7,496.0	-213.2	1.1	213.2	0.04	0.04	0.00
7,600.0	3.30	179.71	7,595.8	-218.9	1.1	218.9	0.04	0.04	0.00
7,700.0	3.35	179.71	7,695.6	-224.7	1.1	224.7	0.04	0.04	0.00
7,800.0	3.39	179.71	7,795.5	-230.6	1.2	230.6	0.04	0.04	0.00
7,900.0	3.43	179.71	7,895.3	-236.6	1.2	236.6	0.04	0.04	0.00
8,000.0	3.48	179.71	7,995.1	-242.6	1.2	242.6	0.04	0.04	0.00
8,100.0	3.52	179.71	8,094.9	-248.7	1.3	248.7	0.04	0.04	0.00
8,200.0	3.56	179.71	8,194.7	-254.9	1.3	254.9	0.04	0.04	0.00
8,300.0	3.61	179.71	8,294.5	-261.1	1.3	261.1	0.04	0.04	0.00
8,400.0	3.65	179.71	8,394.3	-267.4	1.4	267.4	0.04	0.04	0.00
8,500.0	3.69	179.71	8,494.1	-273.8	1.4	273.8	0.04	0.04	0.00
8,600.0	3.74	179.71	8,593.9	-280.3	1.4	280.3	0.04	0.04	0.00
8,700.0	3.78	179.71	8,693.7	-286.9	1.5	286.9	0.04	0.04	0.00
8,750.0	7.78	179.71	8,743.4	-291.9	1.5	291.9	8.00	8.00	0.00
8,800.0	11.78	179.71	8,792.7	-300.4	1.5	300.4	8.00	8.00	0.00
8,850.0	15.78	179.71	8,841.3	-312.3	1.6	312.3	8.00	8.00	0.00
8,900.0	19.78	179.71	8,888.9	-327.6	1.7	327.6	8.00	8.00	0.00
8,950.0	23.78	179.71	8,935.3	-346.1	1.8	346.1	8.00	8.00	0.00
9,000.0	27.78	179.71	8,980.3	-367.9	1.9	367.9	8.00	8.00	0.00
9,050.0	31.78	179.71	9,023.7	-392.7	2.0	392.7	8.00	8.00	0.00
9,100.0	35.78	179.71	9,065.2	-420.5	2.1	420.5	8.00	8.00	0.00
9,150.0	39.78	179.71	9,104.7	-451.1	2.3	451.1	8.00	8.00	0.00
9,200.0	43.78	179.71	9,142.0	-484.4	2.5	484.4	8.00	8.00	0.00
9,250.0	47.78	179.71	9,176.9	-520.2	2.6	520.3	8.00	8.00	0.00
9,300.0	51.78	179.71	9,209.2	-558.4	2.8	558.4	8.00	8.00	0.00
9,350.0	55.78	179.71	9,238.7	-598.7	3.0	598.8	8.00	8.00	0.00
9,400.0	59.78	179.71	9,265.4	-641.0	3.2	641.0	8.00	8.00	0.00
9,450.0	63.78	179.71	9,289.0	-685.1	3.5	685.1	8.00	8.00	0.00
9,500.0	67.78	179.71	9,309.5	-730.7	3.7	730.7	8.00	8.00	0.00
9,550.0	71.78	179.71	9,326.8	-777.6	3.9	777.6	8.00	8.00	0.00
9,600.0	75.78	179.71	9,340.7	-825.6	4.2	825.6	8.00	8.00	0.00
9,650.0	79.78	179.71	9,351.3	-874.4	4.4	874.4	8.00	8.00	0.00

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips MCBU
Project: Permian Hz Bonespring/Avalon
Site: Wilder Federal 28
Well: Wilder Federal 28 #1H
Wellbore: Wilder Federal 28 #2H
Design: Plan #1

Local Co-ordinate Reference: Well Wilder Federal 28 #1H
TVD Reference: WELL @ 3156.0ft (Original Well Elev)
MD Reference: WELL @ 3156.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,700.0	83.78	179.71	9,358.5	-923.9	4.7	923.9	8.00	8.00	0.00
9,750.0	87.78	179.71	9,362.2	-973.8	4.9	973.8	8.00	8.00	0.00
9,777.8	90.00	179.71	9,362.7	-1,001.6	5.1	1,001.6	7.99	7.99	0.00
9,800.0	90.00	179.71	9,362.7	-1,023.8	5.2	1,023.8	0.00	0.00	0.00
9,900.0	90.00	179.71	9,362.7	-1,123.8	5.7	1,123.8	0.00	0.00	0.00
10,000.0	90.00	179.71	9,362.7	-1,223.8	6.2	1,223.8	0.00	0.00	0.00
10,100.0	90.00	179.71	9,362.7	-1,323.8	6.7	1,323.8	0.00	0.00	0.00
10,200.0	90.00	179.71	9,362.7	-1,423.8	7.2	1,423.8	0.00	0.00	0.00
10,300.0	90.00	179.71	9,362.7	-1,523.8	7.7	1,523.8	0.00	0.00	0.00
10,400.0	90.00	179.71	9,362.7	-1,623.8	8.2	1,623.8	0.00	0.00	0.00
10,500.0	90.00	179.71	9,362.7	-1,723.8	8.7	1,723.8	0.00	0.00	0.00
10,600.0	90.00	179.71	9,362.7	-1,823.7	9.2	1,823.8	0.00	0.00	0.00
10,700.0	90.00	179.71	9,362.7	-1,923.7	9.7	1,923.8	0.00	0.00	0.00
10,800.0	90.00	179.71	9,362.7	-2,023.7	10.2	2,023.8	0.00	0.00	0.00
10,900.0	90.00	179.71	9,362.7	-2,123.7	10.7	2,123.8	0.00	0.00	0.00
11,000.0	90.00	179.71	9,362.7	-2,223.7	11.3	2,223.8	0.00	0.00	0.00
11,100.0	90.00	179.71	9,362.7	-2,323.7	11.8	2,323.8	0.00	0.00	0.00
11,200.0	90.00	179.71	9,362.7	-2,423.7	12.3	2,423.8	0.00	0.00	0.00
11,300.0	90.00	179.71	9,362.7	-2,523.7	12.8	2,523.8	0.00	0.00	0.00
11,400.0	90.00	179.71	9,362.7	-2,623.7	13.3	2,623.8	0.00	0.00	0.00
11,500.0	90.00	179.71	9,362.7	-2,723.7	13.8	2,723.8	0.00	0.00	0.00
11,600.0	90.00	179.71	9,362.7	-2,823.7	14.3	2,823.8	0.00	0.00	0.00
11,700.0	90.00	179.71	9,362.7	-2,923.7	14.8	2,923.8	0.00	0.00	0.00
11,800.0	90.00	179.71	9,362.7	-3,023.7	15.3	3,023.8	0.00	0.00	0.00
11,900.0	90.00	179.71	9,362.7	-3,123.7	15.8	3,123.8	0.00	0.00	0.00
12,000.0	90.00	179.71	9,362.7	-3,223.7	16.3	3,223.8	0.00	0.00	0.00
12,100.0	90.00	179.71	9,362.7	-3,323.7	16.8	3,323.8	0.00	0.00	0.00
12,200.0	90.00	179.71	9,362.7	-3,423.7	17.3	3,423.8	0.00	0.00	0.00
12,300.0	90.00	179.71	9,362.7	-3,523.7	17.8	3,523.8	0.00	0.00	0.00
12,400.0	90.00	179.71	9,362.7	-3,623.7	18.3	3,623.8	0.00	0.00	0.00
12,500.0	90.00	179.71	9,362.7	-3,723.7	18.8	3,723.8	0.00	0.00	0.00
12,600.0	90.00	179.71	9,362.7	-3,823.7	19.4	3,823.8	0.00	0.00	0.00
12,700.0	90.00	179.71	9,362.7	-3,923.7	19.9	3,923.8	0.00	0.00	0.00
12,800.0	90.00	179.71	9,362.7	-4,023.7	20.4	4,023.8	0.00	0.00	0.00
12,900.0	90.00	179.71	9,362.7	-4,123.7	20.9	4,123.8	0.00	0.00	0.00
13,000.0	90.00	179.71	9,362.7	-4,223.7	21.4	4,223.8	0.00	0.00	0.00
13,100.0	90.00	179.71	9,362.7	-4,323.7	21.9	4,323.8	0.00	0.00	0.00
13,200.0	90.00	179.71	9,362.7	-4,423.7	22.4	4,423.8	0.00	0.00	0.00
13,300.0	90.00	179.71	9,362.7	-4,523.7	22.9	4,523.8	0.00	0.00	0.00
13,400.0	90.00	179.71	9,362.7	-4,623.7	23.4	4,623.8	0.00	0.00	0.00
13,461.0	90.00	179.71	9,362.7	-4,684.7	23.7	4,684.8	0.00	0.00	0.00

DRILLING PLAN

PROSPECT/FIELD	Bonespring/Red Hills	LEASE	COUNTY/STATE	Lea County, NM
OWNERS	BURLINGTON RESOURCES	FSL	FEL	FWL
WELL NO.	Wilder Federal 28 #2H	FNL	FEL	FWL
LOCATION	Surface Location	330	2160	
	Bottom Hole Location	330	2160	
EST. T.D.	Leg #1 13,461' MD	GROUND ELEV.		3,178' (est)
PROGNOSIS:	Based on 3,200' KB(est)		LOGS:	Type Interval
MARKER	S.S. DEPTH	TVD	Open Hole:	4350' - 740'
Quaternary	Surface	Surface	GR-MWD	13,500' - 4350'
Rustler	2,414	764		
Delaware Top	-1,195	4,373	DEVIATION:	
Bone Spring	-5,129	8,307	Surf	3" max, svy every 500'
Bone Spring 1st Carbonate Top	-5,354	8,532	Int1/2	3" max, svy every 90'
Bone Spring 1st Carbonate Base	-5,398	8,576	Prod	
KOP (est)	-5,422	8,600		
Avalon A Shale Top	-5,616	8,794	DST'S:	
Avalon A Shale Base	-5,841	9,019		
Avalon B Zone Top	-5,841	9,019		
Avalon B Zone Base	-5,996	9,174		
Avalon C Shale Top	-5,996	9,174		
Avalon C Shale Horizontal Upper Target Limit	-6,159	9,337		
LANDING: Avalon C Shale Horizontal Target Center	-6,184	9,362	CORES:	
Avalon C Shale Horizontal Lower Target Limit	-6,209	9,387	No coring	
Avalon C Shale Horizontal Upper Target Limit	-6,161	9,339		
TERMINUS: Avalon C Shale Horizontal Target Center	-6,186	9,364	SAMPLES:	
Avalon C Shale Horizontal Lower Target Limit	-6,211	9,390	Mudlogging	Start End
	-6,255	9,434	Two-Man:	4,373 13461' Horizontal Lateral
			BOP:	
			COP Category 3 Well Control Requirements	
			Nabors Rig M-09 BOPE 13-5/8"-5Mpsi Annular (Hydril GK)	
			(With Rotating Head) 13-5/8"-5Mpsi Blind Ram (Cameron U)	
			13-5/8"-5Mpsi Cross / Choke & Kill Lines	
			13-5/8"-5M psi Pipe Ram (Cameron U)	
			13-5/8"-5Mpsi Spacer Spool	
Dip Rate	(See inclination prediction)	0 65 psi/ft	Surface Formation:	
Max. Anticipated BHP:			Max MW	Vis
MUD:	Interval	Type	W/L	Remarks
Surface	0'-700'	Aquagel - Spud Mud	8 9	32-36
Intermediate 1	700'-4350'	Brine	10 1	28-30
Intermediate 2	4350'-9800'	Cut Brine	10	28-36
Production Lat	9800'-13461'	Cut Brine	10	30-40
CASING:	Size	Wt ppf	Hole	Depth
Surface	13-3/8"	54.5	17-1/2"	740'
Intermediate 1	9-5/8"	40	12-1/4"	4,350'
Intermediate 2	7"	26	8-3/4"	9,800'
Production Lat #1	4-1/2"	18.8	6-1/8"	13,461'
Cement				
To Surface				12 hrs
To Surface				24 hrs
500' into 9-5/8"				24 hrs
				Long String
				No Cement Liner Top @ KOP +/- 8550'
DIRECTIONAL PLAN	MD	TVD	AZ	
Surface	N/A	N/A	N/A	Directional Company DDC
Vertical KOP	8,600'	8,600'	180.0	Vertical Build Rate 8.0 °/100'
End Build/ 7" Casing (90° curve):	9,800'	9,362'	180.0	Tan Leg Turn Rate 0.0 °/100'
Tangent:	N/A	N/A	N/A	
Turn	N/A	N/A	N/A	
TD	13,461'	-9,364'	180.0	
Comments:				Land curve at 90° inc. and 180Az hold flat to TD
Prep By:	Luis Serrano	Date:	9/21/11	Doc: REV.0

Bonespring/Red Hills
BURLINGTON RESOURCES
Wilder Federal 28 #2H
#REF!

Surface Casing:

Surface Casing Depth (Ft) 750
Surface Casing O.D. (In.) 13.375
Surface Casing ID (In) 12.715
Hole O.D. (In) 17.5
Excess (%) 100%
Volume Tail (Sx) 230
Yield Tail (Cu. Ft./Sx) 1.85
Yield Lead (Cu. Ft./Sx) 1.33
Shoe Joint (Ft) 40
Shoe Volume (Cu. Ft) 35.3
Tail feet of cement 300
Calculated Total Volume (Cu. Ft.) 1,077
Calc. Tail Volume (Cu. Ft.) 417
Calc. Lead Volume (Cu. Ft.) 625
Calc. Lead Volume (Sx) 480

see COA

Intermediate1 Casing (Lead):

Intermediate Casing O.D. (In.) 9.625
Intermediate Casing ID (In) 8.835
Hole O.D. (In) 12.25
Excess (%) 200%
cap 12-1/4 - 9-5/8"
Calculated fill: 0.0558
3,650'
Yield Lead (Cu. Ft./Sx) 2.48
Calculated Total Lead (Cu. Ft.) 3,430
Calc. Lead Volume (Sx) 1390

Intermediate1 Casing (Tail):

Intermediate Casing O.D. (In.) 9-5/8"
Production Casing ID (In) 8.835
Hole O.D. (In) 12.25
Excess (%) 200%
cap 12-1/4 - 9-5/8"
Calculated fill: 0.0558
700'
Yield Tail (Cu. Ft./Sx) 1.33
Shoe Joint (Ft) 40
Shoe Volume (Cu. Ft) 17.0
Calc. Tail Volume (Cu. Ft.) 456
Required Tail Volume (Sx) 350

5480

Intermediate2 Casing (Lead):

Intermediate Casing O.D. (In.) 7.000
Intermediate Casing ID (In) 6.184
Hole O.D. (In) 8.75
Excess (%) 100%
cap 7" - 8-3/4" bls/ft
cap 7 - 9-5/8" bls/ft
Calculated fill: (800' into 9-5/8")
Yield Lead (Cu. Ft./Sx) 2
Calculated Total Lead (Cu. Ft.) 828
Calc. Lead Volume (Sx) 420

Intermediate2 Casing (Tail):

Intermediate Casing O.D. (In.) 7.000
Intermediate Casing ID (In) 6.184
Hole O.D. (In) 8.75
Excess (%) 100%
cap 7" - 8-3/4" bls/ft
cap 7 - 9-5/8" bls/ft
Calculated fill: 0.02823
Yield Lead (Cu. Ft./Sx) 600'
1.2
Calculated Total Tail (Cu. Ft.) 95
Required Tail Volume (Sx) 79

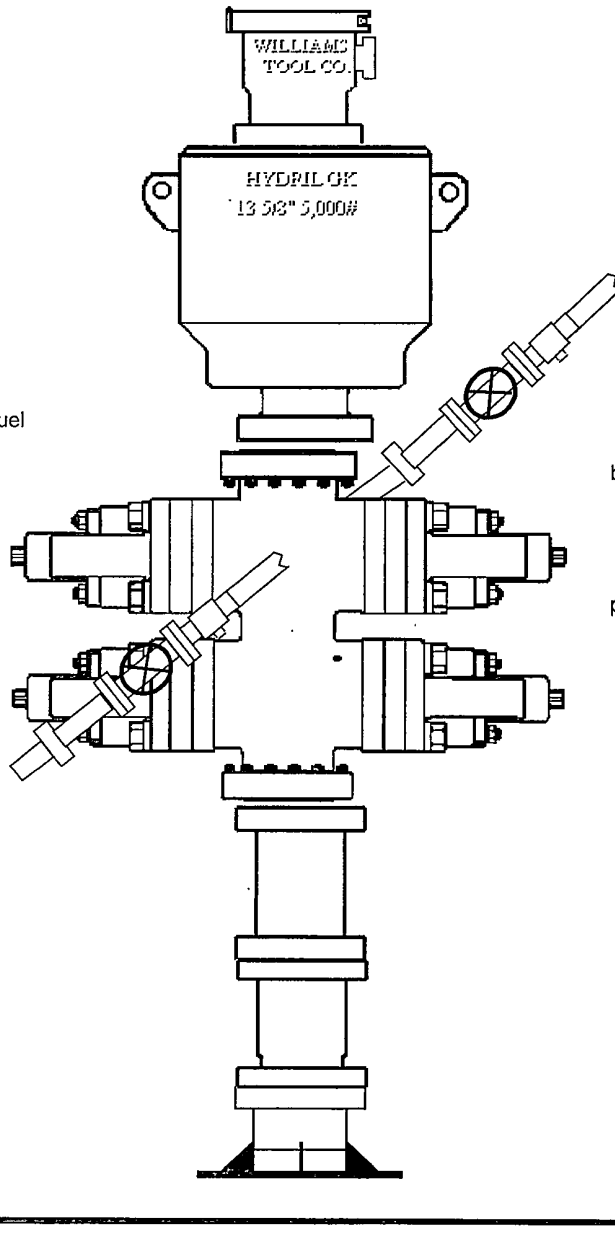
#REF!

Nabors M09

3" hydraulic valve w/ manuel
on v-door side on blinds
2" valves on w/ check
valve on other side of
blinds. Pumps below
blinds.

5

G.L.



Weatherford head
13 5/8" 3m rotating
head

13 5/8" 5M Hydril

13 5/8" 5M
Blind rams
3" Manuel w/ 3" Hydr
valve on V-door side
2-2" manuel valve w/
2" check valve.

13 5/8" 5m
▲ 5 1/2" Pipe Rams

13 5/8" 5m spool

13 5/8" 5m spool

Stage 2 — Install Split Speed Head With Riser Assembly

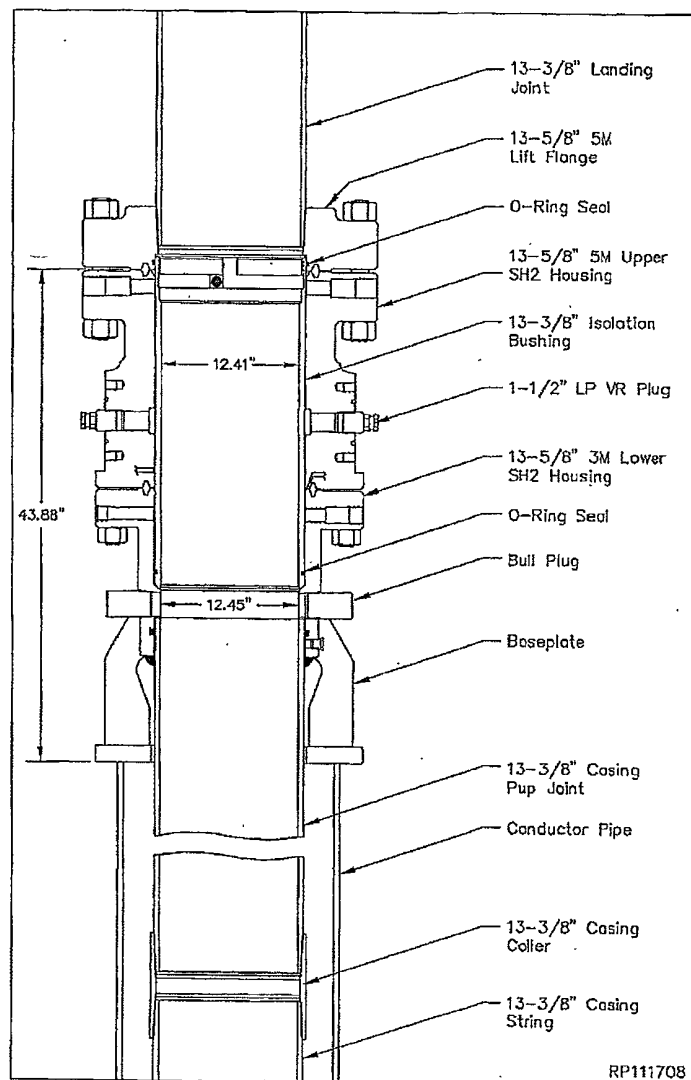
1. Drill and condition hole for surface casing.
2. Cut the conductor pipe off at the correct height above the cellar floor and grind stub level.

Note: The SH2 Riser Assembly is pre-assembled and tested prior to being shipped to location. The assembly is made up of a full length landing joint with flange, upper and lower SH2 housings, and a 10' long pup joint.

3. Examine the 13-5/8" 5M x 13-3/8" SOW SH2 Speed Head/Riser Assembly (Items A1 & B1). Verify the following:
 - 10' pup joint is properly welded in place and casing threads are clean and in good condition
 - all outlet equipment has been removed including all studs and nuts, and valves
 - VR plugs are in place and tight
 - base plate is intact and properly welded to the casing head
 - isolation bushing is in place and properly retained with landing flange
 - landing flange with landing joint are in place and connection is properly made up

Note: Lockscrews are removed to clear 27-1/2" rotary.

4. Run the surface casing to the required depth and then set the last joint of casing run in the floor slips.
5. Pick up the SH2 Riser Assembly and make up the assembly in the casing string, tightening the thread connection to the thread manufacturers optimum make up torque.
6. Pick up the casing string and remove the floor slips and rotary bushings.
7. Slowly and carefully lower the assembly through the rotary table until the baseplate contacts the conductor pipe stub. Slack off all weight.
9. Remove the duct tape from the O.D. of both the upper and lower flanges of the assembly and lightly grease all threaded lockscrew holes.
10. Locate the (six) 1-1/4" and the (twelve) 1-1/2" lockscrew assemblies.



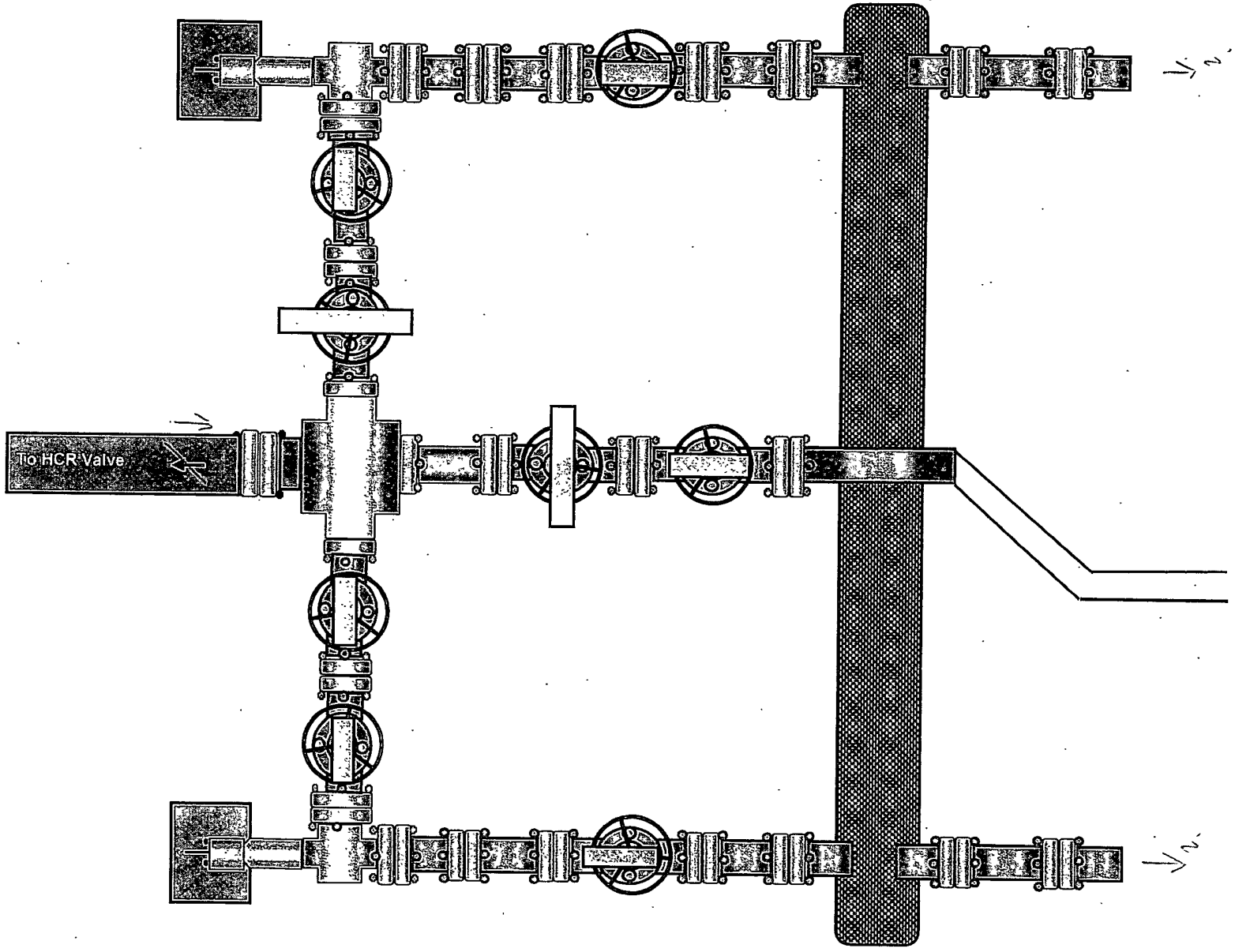
11. Install the 1-1/4" integral lockscrew assemblies in the upper flange and the 1-1/4" assemblies in the lower flange as indicated. (Ref. Dwg. RP111709)
12. Rig up the cement head and cement the surface casing string as per program, taking returns through the circulation ports in the baseplate.
13. After the cement job is completed, bleed off and remove the cement head.
14. Remove the landing flange with landing joint and set aside.

RP-1904

Page 6

ConocoPhillips
13-3/8" x 9-5/8" x 5-1/2" x 2-7/8" 10/3M
SH2/SH2-R Wellhead System

Wood Group
Pressure Control



To Separator

COPPER STATE RUBBER
VISUAL INSPECTION / HYDROSTATIC TEST REPORT
CHOKE & KILL HOSE
10,000 P.S.I. W/P X 15,000 P.S.I. T/P
SPEC: 090-1915 HS
H2S SUITABLE

SHOP ORDER NO.: 16528 SIZE: 3" I.D.
SERIAL NO.: 22269 LENGTH 25 FT. IN.

CONNECTIONS: 4-1/16" 10,000 PSI API FLANGE

VISUAL INSPECTION

(A) END CAPS / SLEEVE RECESS: OK
(B) EXTERIOR / COVER / BRANDING: OK
(C) INTERIOR TUBE: OK

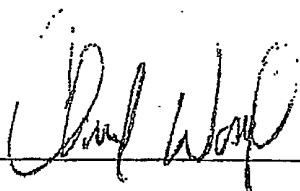
HYDROSTATIC TEST

5 MIN. @ 10,000 PSI

2 MIN. @ 0 PSI 25' 3" OAL

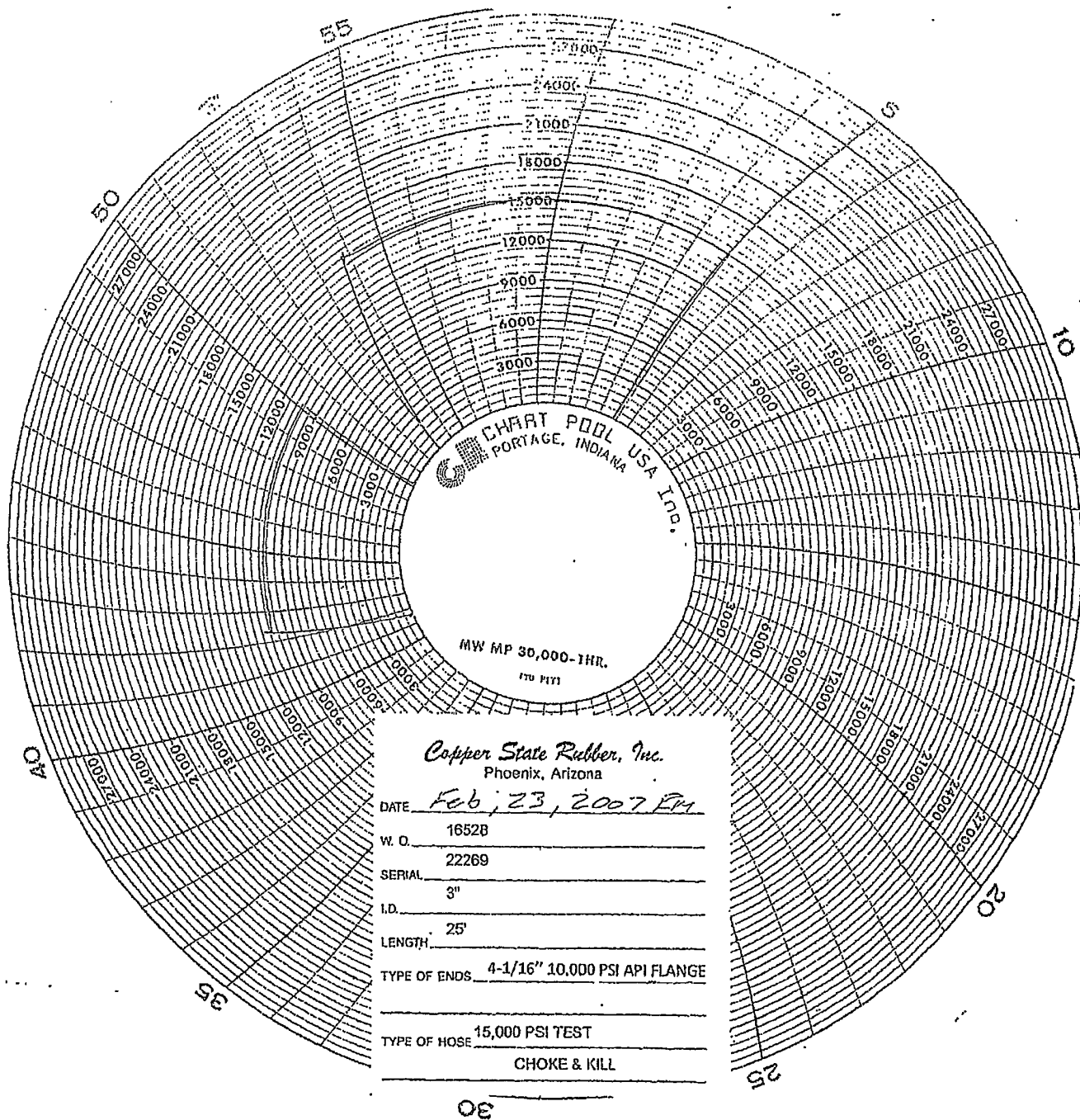
3 MIN. @ 15,000 PSI

WITNESSED BY:



DATE

February 23, 2007





TenarisHydril

August 09 2011

Size: 4.500 in.
Grade: API T95

Wall: 0.430 in.
Weight: 18.900 lbs/ft
Connection: Blue™

PIPE BODY DATA

GEOMETRY					
Nominal OD	4.500 in.	Nominal Weight	18.90 lbs/ft	Standard Drift Diameter	3.515 in.
Nominal ID	3.640 in.	Wall Thickness	0.430 in.	Special Drift Diameter	N/A
Plain End Weight	18.71 lbs/ft				

PERFORMANCE

Body Yield Strength	522 x 1000 lbs	Internal Yield	15890 psi	Collapse	16410 psi
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BLUE™ CONNECTION DATA

GEOMETRY

Regular OD	5.189 in.	Special Clearance OD	5.051 in.	Connection ID	3.740 in.
Critical Section Area	5.768 sq. in.	Critical Section Area (Special Clearance)	4.659 sq. in.	Make-Up Loss	4.012 in.
Threads per in.	5.00	Coupling Length	9.213 in.		

PERFORMANCE

Regular OD Tension Efficiency	100 %	Joint Yield Strength	522 x 1000 lbs	Internal Yield	15890 psi
Compression Efficiency	100 %	Compression Rating	522 x 1000 lbs	Collapse	16410 psi
Special Clearance Tension Efficiency	85.0 %	Bending	97 °/100 ft		

MAKE-UP TORQUES

Minimum Yield Torque	8630 ft-lbs	Target	9590 ft-lbs	Maximum	10550 ft-lbs
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BLANKING DIMENSIONS

Blanking Dimensions

M09 CHOKE HOSE SPECIFICATIONS							
HOSE MANUFACTURER	HOSE MANUFACTURED DATE	HOSE SERIAL #	HOSE OD	HOSE ID	WORKING PSI	TEST PSI	
COPPER STATE RUBBER	2/2007 USA	22269	6.25	3	10K	15K	
FLANGE	FLANGE MANUFACTURED DATE	RING TYPE					
4 1/16 10M	11/8/2006	BX153					

Need location indicated
on closed loop diagram
of Rig/BOPE. *Tim*