				ATS-12-429	
Form 3160-3 (August 2007)	HOBBS	SOCD	OMB No	APPROVED p. 1004-0137 uly 31, 2010	
UNITED STATES	OCD-HOBB	S- 2017		uly 51, 2010	
DEPARTMENT OF THE I	NIERIOR	3 3 201		(D	
BUREAU OF LAND MANA		<ul> <li>NMLC 068281</li> <li>6. If Indian, Allotee</li> </ul>			
		CEIVED			
la. Type of work: X DRILL REENTE	R			eement, Name and No.	
Ib. Type of Well: X Oil Well Gas Well Other	Single Zone Multip	ole Zone	8. Lease Name and Buck Federal 2		
2. Name of Operator			9. API Well No.	-	
ConocoPhillips Company	La17817		<u>30-025-</u>	05.34	
3a. Address 3300 N "A" St, Bldg 6 Midland, TX 79705	3b. Phone No. (include area code)	(9183	20. Field and Pool, or	Export 0725 G-05	
19103	(432)688-6913 🗲	26320	Rustler Hills; E	Bone Springs	
4. Location of Well (Report location clearly and in accordance with any	State requirements.*)		11. Sec., T. R. M. or B		
At surface 655 FNL 980 FEL, UL A, Sec 20, T 26	5S, R 32E		Sec 20, T 26S,	R 32E	
At proposed prod. zone 330 FSL 980 FEL, UL P, Sec	-				
14. Distance in miles and direction from nearest town or post office*			12. County or Parish	13. State	
30 Miles south west of Jal, NM			Lea	NM	
15. Distance from proposed* 2201 ESI	16. No. of acres in lease	17. Spacin	g Unit dedicated to this v		
location to nearest 550 FSL property or lease line, ft. (Also to nearest drig. unit line, if any)	-640 1841.48	160 Ac	res		
18. Distance from proposed location*	19. Proposed Depth	20. BLM/E	BIA Bond No. on file		
to nearest well, drilling, completed, applied for, on this lease, ft. 325' South of Russell	8828' TVD 12900' MD	ES008:			
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will star	rt*	23. Estimated duration	n	
3150' Gr	05/10/2012		25 Days		
	24. Attachments				
The following, completed in accordance with the requirements of Onshore	e Oil and Gas Order No.1, must be at	ttached to thi	is form:		
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> </ol>	4. Bond to cover the Item 20 above).	he operation	ns unless covered by an	existing bond on file (see	
3. A Surface Use Plan (if the location is on National Forest System I SUPO must be filed with the appropriate Forest Service Office).			ormation and/or plans as	s may be required by the	
25. Signature T	Name (Printed/Typed)			Date	
25. Signature R - h.	Brian D Maiorino			02/21/2012	
Title				,	
Regulatory Specialist	······				
Approved by (Signature) 151 Cody R Layton	Name (Printed/Typed)			Date	
Title Field MANAGER	Office	, CA	RLSBAD FIELD C	FFICE	
Application approval does not warrant or certify that the applicant holds	legal or equitable title to those right	ts in the subj			
conduct operations thereor. Conditions of approved Af any are attached. Of Z			APPROVAL	L FOR TWO YEARS	
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a cri States any false, fictitious or fraudulent statements or representations as to	me for any person knowingly and we any matter within its jurisdiction.	villfully to m	ake to any department o	r agency of the United	

(Continued on page 2)

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Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

\*(Instructions on page 2)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APR 2 5 2012

#### **OPERATORS NAME:**

LEASE NAME AND WELL NO.: SURFACE LOCATION: BHL: FIELD NAME: POOL NAME: COUNTY: ConocoPhillips Company

• ,

Buck Federal 20 #5H	,	
655 FNL & 980 FEL		
330 FSL & 908 FEL		•
Red Hills		·
Bone Spring		
Lea County, New Mexico	•	•

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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 (TVD)	Water
Rustler	991	Salt
Castile	1832	Salt
Delaware Top	4332	Oil/gas/water
Ramsey	4370	Oil/gas/water
Ford Sand	4440	Oil/gas/water
Olds	4444	Oil/gas/water
Cherry Canyon Lower Top	6540	Oil/gas/water
Kick Off Point	8120	
Bone Spring	8163	Oil/gas/water
Bone Spring 1 <sup>st</sup> carbonate	8435	Oil/gas/water
top .		
Bone Spring 1 <sup>st</sup> carbonate	8533	Oil/gas/water
base		
Avalon A shale Top	8682	Oil/gas/water
Avalon A shale base	8947	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.

QuanternarySurface-991' (water)Rustler991'-1832 (Salt)Castile1832'-4332' (Salt)All of the water bearing and salt formations identified above will be protected by theintermediate setting of the 9-5/8" casing and circulating of cement to surface

Bone Spring8163-8947 (gas & gas/oil)The geologic tops identified above from the Bone Spring/Avalon are part of the target<br/>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 nippling 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 790' 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. 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.

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.

Casing Sring	Settig Depth MD	OD""	Wť lb/ft	Grade	Conn	MIY (psi)	Collapse (psi)	Jt Str (Klbs)	MASP	Burst DF	Collapse DF	Axial DF
Surface	900 935	13- 3/8	54.5	J-55	STC	2730	1130	514	1024	2.67	4.92	2.57
Intermdiate	4300	9-5/8	40.0	L-80	BTC	5750	3090	947	1995	2.88	2.62	4.74
Production	12900	5-1/2	17.0	P-110	BTC	10640	7840	568	-	2.17	5.32	2.84

#### <u>NEW CASING:</u>

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/790 sx Class C cement + HalCem-C (Yeild: 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 150% excess
- b. 9-5/8" Csg: lead w/11400 sx 50/50 Class C Poz + 2.5 gal/bbl WG-19 + 1 lbm/sk EconoCem-C (Yield: 2.48 cft/sk) Tail w/270 sx 'H' + HalCem C (Yield 1.33 cft/sk) Circulate to surface. Based on 12.25" hole with 150% excess
- C. 5-1/2" Csg lead w/670 sx HLH+ 0.3% Halad-9 + 5lbs/sk silicalite + 0.3% HR- 800 (Yield: 2.00 cft/sk) Tail w/400 sx 'H' + 0.4% Halad-9 + 0.1% WG-17 + 3.0% KCL + 0.3% HR-800 (Yield 1.2 cft/sk) circulate cement 500' into 9-5/8" casing. Based on 8-3/4" Hole w/150% excess

See Coli

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:

0-900'935	Aquagel/Spudmud Brine	8.9#	Vis 32-36	WL: NC
<i>1</i> 900-4300'	Brine	10.0#	Vis 28-30	WL: 5-8
4300-12,900'	Cut Brine	9.0#	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. See COA

a. DST Program: None

c. Logs to be run: GR-MWD 4300-12900'

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 9.0-9.1 ppg equivalent

.The average anticipated bottom hole pressure ranges on average 4360 psi.

See - No hydrogen sulfide is expected to be encountered during drilling operations; however, the potential does exist for H2S. Please see attached H2S contingency plan to be used in the event of occurence

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

Anticipated Spud date of May 25, 2012. 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.

Description         Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<>											
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Net_Link         Indicate item         Poil         Pisk         Pisk <th></th> <th>BURLINGTON PERCURPTION</th> <th></th> <th></th> <th>1 5405</th> <th>COUNTY/STATE</th> <th></th> <th>Lea County, NM</th> <th></th> <th></th> <th></th>		BURLINGTON PERCURPTION			1 5405	COUNTY/STATE		Lea County, NM			
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Bit         O.65 pert         Surface Formation:           UD:         Interval         December 300         Max_MW         Via 9.0         ML         Remarks NG           urface:         0'-900         0'-900         No         9.0         22-95         NG         So           infance:         0'-900         0'-900         0'-900         28-30         So         So           roduction Lat         300'-1290'         0'-900         0'-400         So         So         So           ASING:         Size         WL ppf         Hole         Depth         Cement         WOOC         Remarks           irface:         13-3-9'         So         17-14'         4,000'         To Surface         18hrs         So           irface:         13-3-9'         So         17-14'         4,000'         To Surface         18hrs         Leng Strage           irface:         13-14'         4,000'         To Surface         18hrs         Leng Strage         19hrs         Leng Strage         19hrs         Leng Strage         19hrs         Leng Strage         19hrs         Leng Strage         0 0 '100'         19hrs         Leng Strage         19hrs         Leng Strage         19hrs         19hrs         <								13-5/8"-5Mpsi Spacer Si			
UD: urface:         Interval         Uyee (9000)         Max. MW         Vis (900 - 2000)         WIL (900 - 2000)         Remarks (900 - 2000)           ative roduction Lat         900 - 4000         ative (3000 - 12800)         ative (20 Bins)         0.0         22-50         NG           ASING: inface.         300 - 12800'         ative (3000 - 12800')         Cut Bins         0.0         30-40         sets           Immediate 1: orduction Lat         300 - 12800'         Siza         WL ppf         Hole         Death         You Surface         1800C         remarks           Immediate 1: orduction Lat #1         9-50'         40         12-14'         4,300'         To Surface         188:5         1           Size         WL ppf         Hole         Death         Comment         WOC         Remarks           remediate 1: orduction Lat #1         9-50'         40         12-14'         4,300'         To Surface         188:5         1           RECTIONAL PLAN         MD         TVD         Surface:         N/A         N/A <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td>							•				
Of-Sold         Op-Sold         Applicant - Specified         8.9         32-36         NC           Intermediale 1: coduction Lat         900-4300*         Envise         10.0         22-30         5-8.3           ASING: inface:         Size         Wit.ppf         Hole         Denth         Cement         WOC         Remarks           ASING: inface:         Size         Wit.ppf         Hole         Denth         Cement         WOC         Remarks           inface:         5-36*         40         12-147         800°         To Surface         18brs         -           oduction Lat #1         5-12*         17         8-344*         12,900°         500* into 9-516*         18brs         -           RECTIONAL PLAN         MD         TVD         A2         Directional Company. DDC         Vertical Build Rate         8.1 1/100°           Find Build (90* curve)         9.232         8.282*         180.0         Tan Leg Tum Rate         0.0 7/100°           Togethul Build (90* curve)         9.232         8.282*         180.0         Tan Leg Tum Rate         0.0 7/100°           Togethul Build (90* curve)         8.228*         12.900         8.28*         180.0         Tan Leg Tum Rate         0.0 7/100°		(See inclination prediction)	1 0.0F 10 1		Durfe to Fr	:	· . 				
Vision         Vision         No.         N	ax. Anticipated BHP:	· · ·····				rmation:	· . ;	*			
Odd/state         Stor	ax. Anticipated BHP: UD:	Interval	T		Max, MW	rmation: <u>Vis</u>	· · · · · · · · · · · · · · · · · · ·		Remarks		
ASING:         Size         Wtppf         Hole         Depth         Cement         WOC         Remarks           1/face:         13-3/8         54.5         17-1/2         900'         To Surface         18/8         18/8           ermeduale 1         9-//5*         40         12-1/4*         4,300'         To Surface         18/8*         18/8*           oduction Lat #1         5-1/2*         17         8-3/4*         12,900'         To Surface         18/8*         Leng String           RECTIONAL PLAN         MD         TVD         AZ         Directional Company.         DOC           Surface:         N/A         N/A         N/A         MA         N/A         Directional Company.         DOC           Vertical KOP         8,120'         8,120'         18.12'         180.0         Vertical Build Rate         8.1 //100'           End Build/ (90' curve)         92.32'         8,828'         180.0         Tal.eg Turn Rate         0.0 //100'           TD:         12,900'         8,828'         180.0         Yetrical Rule         0.0 //100'	ax. Anticipated BHP: UD: urface: lermediate 1:	interval 0'-900' 900'-4300'	Aquagei	- Spud Mud	Max. MW 8.9	ermation: <u>Vis</u> 32-36	· · · · · · · · · · · · · · · · · · ·	WL NC 5-8	Remarks		
MD         TVD         AZ           RECTIONAL PLAN         MD         TVD         AZ           Surface:         N/A         N/A         N/A           Vertical KOP         8,120         8,120         8,120           Surface:         N/A         N/A         Directional Company, DDC           Vertical KOP         8,120         8,120         180,0           End Build' (90° curve)         9232         8,828'         180,0           Turm,         N/A         N/A         N/A           Turm,         12,800'         8,828'	ax. Anticipated BHP: UD: unface: lermediate 1:	interval 0'-900' 900'-4300'	Aquagel	- Spud Mud Brine	<u>Max. MW</u> 8.9 10 0	ormation: <u>Vis</u> 32-36 28-30	· · · · · · · · · · · · · · · · · · ·	WL NC 5-8	<u>Remarks</u>		
Itermetiate 1 roduction Lat #1         9-5/8*         40         12-1/4*         4,300' 12,900'         To Surface 500' into 9-5/8*         1Bits         Long String           IRECTIONAL PLAN         MD         TVD         AZ         N/A         N/A         Directional Company. DDC           Vertical KOP         8,120'         8,228'         1800,         Vertical Build Rate         8 1 1/100'           Tangent.         N/A         N/A         N/A         N/A         N/A         N/A           Tan Leg Turn Rate         0 0 /100'         8,828'         1800         N/A         N/A           omments:         MD         Exercise         N/A         N/A         N/A         N/A	lax. Anticipated BHP: IUD: urface: termediate 1: roduction Lat	Interval 0-900 900-4300 4300-12900	Aquaget Aquaget Cut	- Spud Mud Brine rt Brine	<u>Max. MW</u> 8.9 10 0	prmation: <u>Vis</u> 32-36 28-30 30-40	· · · · · · · · · · · · · · · · · · ·	WL NC 5-8, <=5	<u>Remarks</u>		
Sold         Sold <th< td=""><td>lax. Anticipated BHP: IUD: urface: termediate 1: roduction Lat ASING:</td><td><u>interval</u> 0·900 900-4300' 4300-12900' Size</td><td>T Aquage Cu Wtppf H</td><td>- Spud Mud Brine It Brine Hole Depth</td><td><u>Max, MW</u> 8.9 10 0 9.0</td><td>rmation: <u>Vis</u> 32-36 28-30 30-40 <u>Cement</u></td><td></td><td>WL NC 5-8, &lt;=5</td><td>Remarks</td><td></td><td></td></th<>	lax. Anticipated BHP: IUD: urface: termediate 1: roduction Lat ASING:	<u>interval</u> 0·900 900-4300' 4300-12900' Size	T Aquage Cu Wtppf H	- Spud Mud Brine It Brine Hole Depth	<u>Max, MW</u> 8.9 10 0 9.0	rmation: <u>Vis</u> 32-36 28-30 30-40 <u>Cement</u>		WL NC 5-8, <=5	Remarks		
MD         TVD         AZ           Surface:         N/A         N/A         N/A         Directional Company. DDC           Vertical KOP         8,120         160.0         Vertical Build Rate         8.1 //100'           End Build' (90° curve).         9232'         8,828'         180.0         Yanu Leg Turn Rate:         0.0 '/100'           Tangent.         N/A         N/A         N/A         N/A         N/A           Turn.         N/A         N/A         N/A         N/A         N/A           Torn.         N/A         N/A </td <td>ax, Anticipated BHP: UD: urface: lermediate 1: oduction Lat ASING: irface.</td> <td><u>interval</u> 0-900 900-4300 4300-12900 <u>Size</u> 3-3-38</td> <td>T Aquagei Cur <u>Wt ppf H</u> 54.5 11</td> <td>- Spud Mud Brine It Brine <u>Hole Depth</u> 7-1/2, 900</td> <td><u>Max, MW</u> 8.9 10 0 9.0</td> <td>Vis           32-36           28-30           30-40           Cement           To Surface</td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td>WL NC 5-8, &lt;&lt;5. WOC 18hrs</td> <td>Remarks</td> <td></td> <td></td>	ax, Anticipated BHP: UD: urface: lermediate 1: oduction Lat ASING: irface.	<u>interval</u> 0-900 900-4300 4300-12900 <u>Size</u> 3-3-38	T Aquagei Cur <u>Wt ppf H</u> 54.5 11	- Spud Mud Brine It Brine <u>Hole Depth</u> 7-1/2, 900	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface	· · · · · · · · · · · · · · · · · · ·	WL NC 5-8, <<5. WOC 18hrs	Remarks		
MD         TVD         AZ           Surface:         N/A         N/A         Directional Company, DDC           Vertical KOP         8,120'         8,828'         180.0,         Vertical Build Rate         8 1 '/100'           End Build/ (90° curve)         9232'         8,828'         180.0,         'Tan Leg Turn Rate'         0 0 '/100'           'Turn,         N/A         N/A         N/A         N/A         N/A         N/A           'Turn, 'Turn,''N/A'         N/A         N/A         N/A         N/A         N/A         N/A	ax. Antricipated BHP: JD: Inface: Inface: oduction Lat SSING: Inface.	<u>interval</u> 0-900 900-4300 4300-12900 <u>Size</u> 13-36 9-568	T Aquaget Cu <u>Wt ppf H</u> 54,5 11 40 12	- Spud Mud Brine It Brine	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface		<u>WL</u> NC 5-8, <≈5 <u>WOC</u> 18hrs 18hrs	Remarks Remarks		
Surface:         N/A         N/A         N/A         N/A         Directional Company. DDC           Vertical KOP         8,120'         8,120'         160.0         Yertical Build Rate         8.1 //100'           End Build (90° curve).         9232'         8,828'         180.0         Yan Leg Turn Rate'         0.0 //100'           Jangent.         N/A         N/A         N/A         N/A         N/A           TD:         12,900'         8,828'         180.0         180.0         180.0           TD:         12,900'         8,828'         180'0         180'         0.0 //100'	ax. Antricipated BHP: JD: Inface: Inface: oduction Lat SSING: Inface.	<u>interval</u> 0-900 900-4300 4300-12900 <u>Size</u> 13-36 9-568	T Aquaget Cu <u>Wt ppf H</u> 54,5 11 40 12	- Spud Mud Brine It Brine	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	· · · · · · · · · · · · · · · · · · ·	WL NC 5-8, <=5. WOC 18hrs 18hrs	Remarks Remarks	· · · · · · · · · · · · · · · · · · ·	
Vertical KOP         8,120'         8,120'         180.0         'Vertical Build Rate         8 1 '/100'           End Build (90° curve)         9232'         8,828'         180.0         'Tan Leg Turn Rate'         0 0 '/100'           Tangent.         N/A         N/A         N/A         N/A         N/A           Turn.         N/A         N/A         N/A         N/A         N/A           Turn.         N/A         N/A         N/A         N/A         N/A           TD:         <12,900'	ax. Anticipated BHP: UD: Inface: termediate 1: oduction Lat ASING: Inface. Inface. Inface. Construction Lat RECTIONAL PLAN	<u>interval</u> 0-900 900-4300 4300-12900 <u>Size</u> 13-36 9-568	T Aquaget Cur <u>Wt ppf H</u> 54.5 11 40 12 17 8-	- Spud Mod Brine t Brine <u>lole Depth</u> 7-1/2, 900' 2-1/4", 4,300' -3/4" 12,900'	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface		WL NC 5-8, <=5. WOC 18hrs 18hrs	Remarks Remarks		
End Build' (9° curve). 9232' 8,828' 180.0 'Tan Leg Turn Rate' 0 0 '7100' Tangent N/A N/A N/A N/A Turn. N/A N/A 12,900' 8,828' 180.0 180.0 1 Turn. N/A N/A 180.0 1 Turn. N/A N/A 180.0 1 180.0 1 180	ax, Anticipated BHP: UD: urface: termediate 1: roduction Lat ASING: urface. ermediate 1, roduction Lat#1 RECTIONAL PLAN	Interval 0'-900' 900'-4300' 4300'-12900' <u>Sire</u> 13-318' 9-518' 5-112'	T Aquagei Cur 	- Spud Mud Brine t Brine - 10 <u>le Depth</u> 7-1/2, 900' -3/4" 12,900' TVD	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	Α <u>Ζ</u>	WL           NC           5-8,           <25	Remarks Remarks		
Jangent         N/A	ax, Antreipated BHP: UD: unface: termediate 1: oduction Lat ASING: inface. elermediate 1. oduction Lat#1 RECTIONAL PLAN	Interval 0-900 900-4300 4300-12900 Size 13-3/8* 9-5/8* 5-1/2* Surfi	T Aquaget Cu <u>Wtppf H</u> 54,5 17 40 12 17 8- <u>MD I</u> acc: N/A I	- Spud Mud Brine t Brine - 10le Depth 7-1/2, 900' 2-1/4' 4,300' -3/4' 12,900'	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A	WL NC 5-8, <=5 18hrs 18hrs	Remarks Remarks Long String		
Tum. N/A N/A TD: 12,900 8,828 mments:	Anticipated BHP: JD: Inface: ermediate 1: oduction Lat SING: Inface: ermediate 1: oduction Lat #1 RECTIONAL PLAN	interval 0-900 900-4300-12900 3225 13-36 9-567 5-1/2" Surfit Vertical K	T Aquaget Cur Wt ppf H 54.5 11 40 12 17 8 MD I acc: N/A f 0P. 8,120 8,	- Spud Mud Brine Totice - Depth 7-1/2 2-1/4" 4,300' - 3/4" 12,900' - 3/4" 12,900' - 1/4", 4,300' - 3/4" 12,900'	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0,	WL NC 5-8, <=5 WOC 18hrs 18hrs 18hrs 18hrs 18hrs	Remarks Remarks Leng String DDC 8 1 1/100'		
mments:	ax. Antrcipated BHP: JD: Inface: ermediate 1: oduction Lat ASING: Inface: ermediate 1: oduction Lat #1 RECTIONAL PLAN	interval 0'-900' 900'-4300' 4300'-12900' Size 13-3/8' 9-5/8' 5-1/2' Surfr Vertical KC End Build/ (90' cu (] Tang	MD         I           acc:         N/A           MD         I           acc:         N/A           MD         State           IT         8-           MD         I           acc:         N/A           N/A         Y	- Spud Mud Brine A Brine - 102 Depth 7-1/2, 900' - 3/4" 12,900' - 3/4" 12,900' - 12,90	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0	WL NC 5-8, <=5 WOC 18hrs 18hrs 18hrs Directional Company. Vertical Build Rate	Remarks Remarks Leng String DDC 8 1 1/100'		
mments:	ax. Antrcipated BHP: JD: Inface: ermediate 1: oduction Lat ASING: Inface: ermediate 1: oduction Lat #1 RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2 Vertical K End Build/ (90° cur 13-3/8 9-5/8	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 - N/A , N/A	WL NC 5-8, <=5 WOC 18hrs 18hrs 18hrs Directional Company. Vertical Build Rate	Remarks Remarks Leng String DDC 8 1 1/100'		
omments:	ax, Antreipated BHP: UD: unface: termediate 1: oduction Lat ASING: inface. elermediate 1. oduction Lat#1 RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 - N/A , N/A	WL NC 5-8, <=5 WOC 18hrs 18hrs 18hrs Directional Company. Vertical Build Rate	Remarks Remarks Leng String DDC 8 1 1/100'		
omments:	ax, Anticipated BHP: UD: urface: termediate 1: roduction Lat ASING: urface. termediate 1; roduction Lat#1 IRECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 - N/A , N/A	WL NC 5-8, <=5 WOC 18hrs 18hrs 18hrs Directional Company. Vertical Build Rate	Remarks Remarks Leng String DDC 8 1 1/100'		
an a	ax. Anticipated BHP: IUD: UUD: urface: termediale 1: roduction Lat ASING: urface. urface. urface. Irrection Lat #1 IRECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 1800, 180,0 - N/A - N/A 1800	WL NC 5-8, <=5 <u>WOC</u> 18hrs 18hrs 18hrs 18hrs 18hrs 18hrs 18hrs	Remarks Remarks Leng String DDC 8 1 1/100'		
a and a second	ax, Anticipated BHP: UD: urface: termediate 1: roduction Lat ASING: urface. ermediate 1, roduction Lat#1 RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 1800, 180,0 - N/A - N/A 1800	WL NC 5-8, <=5 <u>WOC</u> 18hrs 18hrs 18hrs 18hrs 18hrs 18hrs 18hrs	Remarks Remarks Leng String DDC 8 1 1/100'		
	ax. Anticipated BHP: UD: unface: termediate 1: oduction Lat ASING: inface: termediate 1: oduction Lat #1 RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 N/A 180 0 1	WL NC 5-8, 	Remarks Remarks Leng String DDC 8 1 1/100'		
	ax. Anticipated BHP: UD: urface: lermediate 1: oduction Lat ASING: irface: lermediate 1: oduction Lat #1 RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 N/A 180 0 1	WL NC 5-8, 	Remarks Remarks Leng String DDC 8 1 1/100'		
	ax. Anticipated BHP: JD: inface: ermediate 1: oduction Lat SING: inface: ermediate 1: oduction Lat #1 RECTIONAL PLAN Moments:	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max, MW</u> 8.9 10 0 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0, 180.0 N/A 180 0 1	WL NC 5-8, 	Remarks Remarks Leng String DDC 8 1 1/100'		
ep By: 'Luis Serrano Date: 2/22/12 Doc 'REV 0	ax. Antrcipated BHP: JD: inface: ermediate 1: oduction Lat ASING: inface: ermediate 1: oduction Lat #1 RECTIONAL PLAN RECTIONAL PLAN	interval 0-900 900-4300-42900 35ize 13-3/8 9-5/8 5-1/2* Surfit End Build/ (90* cur Tang	Image         Image           Aquaget         Cut           Wt ppf         H           54.5         11           40         12           17         8	- sport Mod Brine Tothe 101e Depth 7-1/2, 900' 2-1/4" 4,300' -3/4" 12,900' IVD IVD IVD IZD ,828' N/A N/A	<u>Max. MV</u> 8.9 100 9.0	Vis           32-36           28-30           30-40           Cement           To Surface           To Surface	N/A 180 0 180.0 N/A N/A 180 0	WL NC S-8, <=5. WOC 18hrs 18hrs 18hrs JBhr	Remarks Remarks Long String DDC 8 1 //100' 0 0 //100'		

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#### Bonespring/Red Hills BURLINGTON RESOURCES BuckFederal 20 #5H

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Surface Casing:	
Surface Casing Depth (Ft)	
Surface Casing O.D. (In.)	
Surface Casing ID (In)	
Hole O.D. (In)	
Excess (%)	
Volume Tail (Sx)	÷
Yield Tail (Cu. Ft./Sx)	
Yield Lead (Cu. Ft./Sx)	
Shoe Joint (Ft)	
Shoe Volume (Cu. Ft)	
Tail feet of cement	
Calculated Total Volume (Cu. Ft.)	
Calc. Tail Volume (Cu. Ft.)	
Calc. Lead Volume (Cu. Ft.)	
Calc. Lead Volume (Sx)	

-	Intermediate1 Casing (Lead):		Intermediate1 Casing (Tail):	
-900	Intermediate Casing O.D. (In.)	9.625	Intermediate Casing O.D. (In.)	
13.375	Intermediate Casing ID (In)	8.835	Production Casing ID (In)	
12.715	Hole O.D. (In)	12.25	Hole O.D. (In)	
17.5	Excess (%)	150%	Excess (%)	
150%	cap 12-1/4 - 9-5/8"	0.0558	cap 12-1/4 - 9-5/8"	
230	Calculated fill:	3,600'	Calculated fill:	
1.85	•		Yield Tail (Cu. Ft./Sx)	
1.33	Yield Lead (Cu. Ft./Sx)	2,48	Shoe Joint (Ft)	
40			Shoe Volume (Cu. Ft)	
35.3	Calculated Total Lead (Cu. Ft.)	2,819		
300			Calc. Tail Volume (Cu. Ft.)	
1,494	Calc. Lead Volume (Sx)	1140		
417			Required Tail Volume (Sx)	
1,042				
790				•
	Production Casing (Lead):		Production Casing (Tail):	
	Intermediate Casing O.D. (In.)	5,500	Intermediate Casing O.D. (In.)	
	Intermediate Casing ID (In)	4.892	Intermediate Casing ID (In)	
	Hole O.D. (In)	8.75	Hole O.D. (In)	
	Excess (%)	100%	Excess (%)	
	cap 5-1/2" - 8-3/4" bls/ft	0.0450	cap 5-1/2" - 8-3/4" bis/ft	
	cap 5-1/2 - 9-5/8" bls/ft	0.0408	cap 7 - 9-5/8" bls/ft	
	Calculated fill: (500' into 9-5/8")	5,300'	Calculated fill:	
	Yield Lead (Cu. Ft./Sx)	2,0	Yield Lead (Cu. Ft./Sx)	

Calculated Total Lead (Cu. Ft.)

Calc. Lead Volume (Sx)

670	Required Tail Volume (Sx)	400	
1,339	Calculated Total Tail (Cu. Ft.)	480	
2.0	Yield Lead (Cu. Ft./Sx)	1.2	
5,300'	Calculated fill:	3,800'	3,800'
0.0408	cap 7 - 9-5/8" bls/ft		
0.0450	cap 5-1/2" - 8-3/4" bis/ft	0.0450	
100%	Excess (%)	50%	
8,75	Hole O.D. (In)	8.75	

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9-5/8"

8.835

12.25

150% 0.0558 700' 1.33 40

17.0

346

270

5.500 4.982

> 9100 5300

5480

7850

Luis Alejandro Serrano S. CONOCOPHILLIPS/MCBU Staff Drilling Engineer - PERMIAN Off. 832-486-2346 Cell. 432-599.1926 1000



HOBBS OCD

APR 2 3 2012

RECEIVED

# **ConocoPhillips MCBU**

Permian Hz Bonespring/Avalon Buck Federal 20 Buck Federal 20 #5H

Wellbore #1

Plan: Plan BLM

# **Standard Planning Report**

22 February, 2012



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Conoc	oPhillips

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Database:	EDM Cen	tral Planning			Local Co-ordina	ate Referer		uck Federa		
Company:		hillips MCBU			TVD Reference		· 1	0	t (Original W	
Project:	Permian H	Iz Bonespring	g/Avalon		MD Reference:		WELL	@ 3172.0f	t (Original W	/ell Elev)
Site:	Buck Fed	•			North Referenc		🔆 🖓 🚽 True			
Well:		eral 20 #5H			Survey Calcula	tion Metho	d: Minimu	ım Curvatu	re	
Wellbore:	Wellbore					,. <b>.</b> .	· .]			
Design:	Plan BLM				I summer and	he dis 1	.c. 116 Support many			
Project	Perm	ian Hz Bones	pring/Avalon	میرد. مربع از میروند بر میروند میروند و میروند از میروند از میروند و میروند و میروند و میروند و میروند و میروند میروند و میروند و می	**************************************	,,,,,,,				
Map System:			7 (Exact solut	ion)	System Datum	1:	Mean S	Sea Level		
Geo Datum:		927 (NADCO								
Map Zone:	Texas	South Centra	4204						<u></u>	
Site	Buck	Federal 20								
Site Position:		erinde touksener:	Nort	ina:	erence statisticswa	m La	ititude:	SANGGRANES M	201910-0222,0222	and all and a second states (
From:	No	ne	East	0			ongitude:			
Position Uncer		0.0 f		Radius:			rid Convergen	ce:		0.00 °
							e eenreigen			
Well	Buck	Federal 20 #5	iΗ		n ang ang ang ang ang ang ang ang ang an					
Well Position	+N/-S	C	).0 ft N	orthing:		0.00 m	Latitude	<b>:</b>		27° 41' 16.664 N
	+E/-W		).0 ft E	asting:		0.00 m	Longitu	de:		105° 10' 51.259 W
Position Uncer	tainty	(	).0 ft W	ellhead Elev	vation:	ft	Ground	Level:		3,150.0 ft
						-				
Wellbore	Wellt	oore #1		and the state of the second	الله المراجع ا المراجع المراجع المراجع المراجع المراجع	······································				
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haidentieten ausenheitete une "ilet		BGGM2011	an a	2/22/2012	al and the descent of the second s	7.85	unter municipalité annoncerè	55.38		45,534
Design	Plan I		. en 1995 féligina, de Barta, frencestra, en 1995 a	<b></b>	والمحاسبة والإسراف والمراجع والمحافظ والمحافظ والمحافظ		and a transmitted by the first stage			
Audit Notes:										
Version:			Pha	<u>م</u> ،	PROTOTYPE	Tie O	n Depth:	0	.0	
							-			
Vertical Section	n: 	, i i i i i i i i i i i i i i i i i i i	epth From (1		+N/-S (ft)	+E/-W		Direc		
E <u>E C. LANDA</u>		and the second	0.0		00	0.0	· ····································	<mark>) (</mark> 180		Academister V
					~~~	0.0				
Plan Sections		ala ana ana ang ana ang ang ang ang ang an		مىمىمىدىمارىتىنى بىلار يېرىمىيە بىرىمىيە		مېر وهدو مکامه ولي ورو مرد د در در مکامه ولي کرد				
Measured	14 4 - 18 18 19 - 19 - 19 - 19 - 19 - 19 - 1	1. 19 4 - 19 X 4 - 1	Vertical			gleg	Build	urn	116432	
Depth In	clination	Azimuth	Depth	+N/-S	+F/-W R	até		ate	TFO	
(ft)	(°)	(°).	(Ťt)	(ft)	(ft) (°/1			00ft)	(°)	Target
Land Land Street Street	- dis aller and		<u>مىيىتىتىتىتە</u>	فيغيث سننف	- And		<u>من شیخت می من می من می من می من </u>	<u>in al</u>		
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9,232.1 12,882.0	90.00 90.00	180.00 180.00	8,828.0	-708 0 -4.357.9	0.0 0.0	8.09	8 09	0.00	180.00	
12,002.U	30.00	100.00	8,828.0	-4,307.9	0.0	0.00	0.00	0.00	0.00	

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Planning Report



P. 15. 7			Well Buck Federal 20 #5H
Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Buck Federal 20 #5H
Company:	ConocoPhillips MCBU	TVD Reference:	WELL @ 3172.0ft (Original Well Elev)
Project:	Permian Hz Bonespring/Avalon	MD Réference:	WELL @ 3172.0ft (Original Well Elev)
Site:	Buck Federal 20	North Reference:	True
Well:	Buck Federal 20 #5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan BLM		
Land and the second		Carlos de la los los deservos	
Planned Survey			landaran katikan manangkan katikan katikan katikan di katikan katikan katikan katikan katikan katikan katikan k

Planned Survey	a state and the second s	تت الم		ه سه به شوه و م	****	ś		نېو <del>د</del> و شمې سېمې سېمې د و شمې د سېمې سېمې	·
Mana			Vertical	, 4		Vertical	Dogleg	Build	Turn
Meaşured Depth		A Zanata S	Depth	1100	+E/-W	Section	Rate	Rate	Rate
(ft)	(Inclination)	Azimuth (°)	(ft)	+N/-S (ft)	(ft)	(ft)	(°/100ft)	(°/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	0.00	180 00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	180.00	200 0	0.0	0.0	0.0	0.00	0.00	0 00
300.0	0.00	180.00	300 0	0.0	0.0	0.0	0.00	0 00	0 00
400.0	0.00	180.00	400 0	0.0	0.0	0.0	0 00	0.00	0.00
500.0	0.00	180.00	500.0	0.0	0.0	0 0	0 00	0.00	0.00
600.0	0.00	180.00	600 0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	· 0.00	180 00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	180.00	800.0	0.0	0.0	0.0	. 0.00	0.00	0.00
900.0	0.00	180.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	180.00	1,000.0	0.0	0.0	0.0	0.00	0 00	0.00
1,100.0	0.00	180 00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	180.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	180.00	1,300.0	0.0	. 0.0	0.0	0.00	0.00	0.00
1,400 0	0.00	180.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	180.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	180.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700 0	0.00	180.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	180.00	1,800.0	0.0	0.0	0 0	0.00	0.00	0.00
1,900.0	0.00	180.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	180.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	180.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	180.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	180.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	180.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	180.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600 0	0.00 .	180.00	2,600.0	0.0	0.0	0.0	0 00	. 0.00	0.00
2,700 0	0.00	180.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	180.00	2,800 0	0.0	0.0	0.0	0.00	0.00	0 00
2,900.0	0.00	180.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000 0	0.00	180.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	180.00	3,100 0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	180.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	180.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	180.00	3,400.0	, 0.0 <sub>.</sub>	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	180.00	3,500 0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0 3,700.0	0.00	180.00 180.00	3,600.0 3,700.0	0.0	0.0	0.0	0.00	0 00	0.00
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3,900.0	0.00	180.00	3,900.0	0.0	0.0	0 0 0.0	0.00	0.00	0.00 0.00
4,000.0	0.00	180.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	180.00	4,100.0	0.0	0.0	0.0	0.00-	0.00	0.00 -
4,200.0	0.00	180.00	4,200 0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	180 00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	180.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	180.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	180.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	180.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	180.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	180.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	180.00	5,000.0	0.0	0.0	0.0	0 00	0.00	0.00
5,100.0	0.00	180.00	5,100.0	0.0	0.0	0.0	0 00	0.00	0.00
5,200.0	0.00	180.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
	0.00	180.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

2/22/2012 4:41:48PM

COMPASS 2003.16 Build 69



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Planning Report



Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Buck Federal 20 #5H
Company:	ConocoPhillips MCBU	TVD Reference:	WELL @ 3172.0ft (Original Well Elev)
Project:	Permian Hz Bonespring/Avalon	MD Reference.	WELL @ 3172 Oft (Original Well Elev)
Site:	Buck Federal 20	North Reference:	True
Well:	Buck Federal 20 #5H	Survey Calculation Method:	Minimum Curvature
Wellbore.	Wellbore #1		
Design:	Plan BLM		
			Free and the second sec

Measured pepth         inclination         Azimuth         Veritical bepth.         iter (f)         Veritical (f)         veritical section         Degles (f)         Build Rate (f)         Turn Rate (f)           5,400.0         0.00         180.00         5,400.0         0.0         0.0         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0	Planned Survey	ST.		A DECEMPTION OF THE PARTY OF TH				<u></u>	LANGE STRAND	
Depth         Inclination         Azimuth         Depth         HU-S         E-E/MV         Section         Rate         Rate         Rate         Rate           (f)         (f			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	and the second s	and the second se	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	A A LA LA A A A A A A A A A A A A A A A	¥		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
(n)         (r)         (n)         (n)         (n)         (n)         (r)         (r) <th></th> <th>Carteria South State</th> <th></th> <th></th> <th>136 1</th> <th></th> <th>Vertical</th> <th>Dogleg</th> <th>Build</th> <th></th>		Carteria South State			136 1		Vertical	Dogleg	Build	
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	, <b>(ft)</b> , , , ,	ુ (૧) ન્ટ્રેલ	. (°)	(ft),	(ft)	(ft)	(ff)	(%/100ft)	(100π)	(*/100ff)
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COMPASS 2003.16 Build 69



## ConocoPhillips or its affiliates

Planning Report



CONTRACTOR - COLORADO

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Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Buck Federal 20 #5H
	ConocoPhillips MCBU	TVD Reference:	WELL @ 3172.0ft (Original Well Elev)
Project:	Permian Hz Bonespring/Avalon	MD Reference:	WELL @ 3172.0ft (Original Well Elev)
Site:	Buck Federal 20	North Reference:	True
Well:	Buck Federal 20 #5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1	12	
Design:	Plan BLM	w	

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)
10,500.0 10,600.0	90.00 90.00	180.00 180.00	8,828.0	-1,975.9 -2,075.9	0.0 0.0	1,975 9 2,075.9	0.00 0.00	0.00 0 00	0.00 0.00
10,700.0	90.00	180.00	8,828.0	-2,175.9	0.0	2,175.9	0.00	0.00	0.00
10,800.0 10,900.0 11,000.0	90.00 90.00 90 00	180.00 180.00 180.00	8,828 0 8,828.0 8,828.0	-2,275.9 -2,375.9 -2,475.9	0.0 0.0 0 0	2,275.9 2,375.9 2,475.9	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
11,100.0 11,200.0	90 00 90.00	180.00 180.00	8,828.0 8,828.0	-2,575.9 -2,675.9	0.0 0.0	2,575.9 2,675.9	0.00 0.00	0.00 0.00	0.00 0.00
11,300.0 11,400.0 11,500.0 11,600 0 11,700.0	90.00 90.00 90.00 90.00 90.00	180.00 180.00 180.00 180.00 180.00	8,828.0 8,828.0 8,828.0 8,828.0 8,828.0 8,828.0	-2,775.9 -2,875.9 -2,975.9 -3,075.9 -3,175.9	0.0 0.0 0.0 0.0 0.0	2,775.9 2,875.9 2,975.9 3,075.9 3,175.9	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00
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12,300.0 12,400.0 12,500.0 12,600.0 12,700.0	90.00 90.00 90.00 90.00 90.00	180.00 180.00 180.00 180.00 180.00	8,828.0 8,828.0 8,828.0 8,828.0 8,828.0 8,828.0	-3,775.9 -3,875.9 -3,975.9 -4,075.9 -4,175.9	0.0 0.0 0.0 0 0 0.0	3,775.9 3,875.9 3,975.9 4,075.9 4,175.9	0.00 0.00 0.00 . 0.00 0.00	0 00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
12,800 0 12,882.0	90.00 90.00	180.00 180.00	8,828.0 8,828.0	-4,275.9 -4,357.9	0.0 0.0	4,275.9 4,357.9	0.00 0.00	0.00 0.00	0.00 0.00



- Item Description
  - Rotating Head (13-5/8", 3M) 1
  - Fill up Line and Valve 2A
  - 2B Flow Line (8")
  - 2C Shale Shakers and Solids Settling Tank
  - 2D Cuttings Bins for Zero Discharge
  - Rental Mud Gas Separator with vent line to flare and return line to mud system 2E
  - Annular BOP (13-5/8", 5M) 3
  - 4 Double Ram BOP (13-5/8", 5M with Blind Rams in Upper Set and Pipe Rams in Lower Set)
  - Kill Line (2" chicksan, 5000 psi WP) 5
  - 6
  - 7
  - Kill Line Valve, Inner (2", 5000 psi WP) Kill Line Check Valve (2", 5000 psi WP Choke Line (4" Flexible Steel Line, 5000 psi WP) 8
  - Choke Line Valve, Inner (4", 5000 psi WP) 9
  - 10 Choke Line Valve, Outer, (Hydraulically operated, 4", 5000 psi WP
  - 11 Spacer Spool (13-5/8" 5M)
  - Spacer Spool (13-5/8" 5M) 12
  - 13 Casing Head (13-5/8" 5M)
  - 14 Ball Valve and Threaded Nipple on Casing Head Outlet, 2" 5M
  - 15 Surface Casing

Drawn by: Steven O. Moore, Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company, 22-Dec-2011



- Item Description
  - 1 Manual Adjustable Choke, 3-1/16, 10M
  - 2 Manual Adjustable Choke, 3-1/16, 10M
  - 3 Gate Valve, 2-1/16 10M
  - 4 Gate Valve, 3-1/16 10M
  - 5 Gate Valve, 3-1/16 10M
  - 6 Gate Valve, 3-1/16 10M
  - 7 Gate Valve, 4-1/16" 10M
  - 7 Gate valve, 4-1/10 1010
  - 8 Gate Valve, 3-1/16 10M
  - 9 Gate Valve, 3-1/16 10M
  - 10 Gate Valve, 4-1/16" 10M
  - 11 Gate Valve, 3-1/16 5M
  - 12 Gate Valve, 3-1/16 10M
  - 13 Gate Valve, 3-1/16 10M
  - 14 Pressure Gauge
  - 15 2" hammer union tie-in point for BOP Tester

#### Drawn by:

Steven O. Moore Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company

01-Feb-2012

## 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 SH2Riser 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 può 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.
- Slowly and carefully lower the assembly 7. 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. Rigup the cement head and cement the surface casing string as per program, taking returns through the circulation ports in the baseplate.
- 13. After the coment job is completed, bleed off and remove the cement head.
- 14. Remove the landing flange with landing joint and set aside.

ConocoPhillips Wood Group **RP-1904** 13-3/8" x 9-5/8" x 5-1/2" x 2-7/8" 10/3M Page 6 SH2/SH2-RWellhead System

## **Pressure Control**

#### 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	5FT	IN.
CONNECTIONS:	4-1/	/16" 10,000 PSI API FLA	NGE	
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• •	VISUAL INSP	ECTION		
		· ·		
(A) END CAPS / SLE (B) EXTERIOR / COV	VER / BRANDING:	OK OK	2	
(C) INTERIOR TUBE		OK	· · · · · · · · · · · · · · · · · · ·	
	:			•
•	HYDROSTAT	IC TEST	· · ·	
5 MIN. @ 10,000	PSI		· .	• *
2 MIN. @ 0 PSI	25'	3"	OAL	
3 MIN. @ 15,000 F	PSI .			· · ·
			••••	
• .	DA.16			•
WITNESSED BY:	[ hand how	· .		
DATE	February 23, 2007			
FORM QA-21- REV-2 3-22-00	<b>,</b>			



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<u> </u>	109 CHOKE H	OSE SPEC	CIFICA	TIONS	5	
	· · · · · · · · · · · · · · · · · · ·			1	<b></b>	
HOSE	HOSE	HOSE	HOSE	HOSE	WORKING	TEST
MANUFACTURER	, MANUFACTURED	SERIAL #	OD	. ID	PSI	PSI
COPPER STATE RUBBER	2/2007 USA	22269	6.25	3	10K	15K
	FLANGE					
FLANGE	. MANUFACTERED	RING TYPE				
	DATE					
4 1/16 10M	11/8/2006	BX153		·	· · · · · · · · · · · · · · · · · · ·	

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ConocoPhillips Company Closed Loop System Design, Operating and Maintenance, and Closure Plan

Well: Buck Federal 20 #5H

Date: February 21, 2012

ConocoPhillips proposes the following plan for design, operating and maintenance, and closure of our proposed closed loop system for the above named well:

 We propose to use a closed loop system with steel pits, haul-off bins, and frac tanks for containing all cuttings, solids, mud, water, brine, and liquids. We will not dig a pit, nor will we use a drying pad, nor will we dispose of or bury any waste on location.

All drilling waste and all drilling fluids (fresh water, brine, mud, cuttings, drill solids, cement returns, and any other liquid or solid that may be involved) will be contained on location in the rig's steel pits or in hauloff bins or in frac tanks as needed. The intent is as follows:

- We propose to use the rigs's steel pits for containing and maintaining the drilling fluids.
- We propose to remove cuttings and drilled solids from the mud by using solids control equipment and to contain such cuttings and drilled solids on location in haul-off bins.
- We propose that any excess water that may need to be stored on location will be stored in a fresh water pond.

The closed loop system components will be inspected daily by each tour and any needed repairs will be made immediately. Any leak in the system will be repaired immediately, and any spilled liquids and / or solids will be cleaned immediately, and the area where any such spill occurred will be remediated immediately.

2. Cuttings and solids will be removed from location in haul-off bins by an authorized contractor and disposed of at an authorized facility. For this well, we propose the following disposal facility:

Controlled Recovery Inc, 4507 West Carlsbad Hwy, Hobbs, NM 88240, P.O. Box 388 Hobbs, New Mexico 88241 Toll Free Phone: 877.505.4274, Local Phone Number: 432-638-4076

The physical address for the plant where the disposal facility is located is Highway 62/180 at mile marker 66 (33 miles East of Hobbs, NM and 32 miles West of Carlsbad, NM).

The Permit Number for CRI is R9166

A photograph showing the type of haul-off bins that will be used is attached.

- 3. Mud will be transported by vacuum truck and disposed of at Controlled Recovery Inc at the facility described above.
- 4. Fresh Water and Brine will be hauled off by vacuum truck and disposed of at an authorized salt water disposal well. We propose the following for disposal of fresh water and brine as needed:
  - Nabors Well Services Company, 3221 NW County Rd, Hobbs, NM 88240, PO 5208 Hobbs, NM, 88241, Permit SWD 092. (Well Location: Section 3, T19S R37E)
  - Basic Energy Services, PO Box 1869 Eunice, NM 88231 Phone Number 575 394 2545, Facility located at Hwy 18, Mile Marker 19, Eunice, NM.

Luis Serrano Drilling Engineer

ConocoPhillips Company, 600 North Dairy Ashford, Room #2WL-13016, Houston, TX 77079-1175 Office: 832-486-2346

# SPECIFICATIONS

FLOOR: 3/16 PL one piece CROSS MEMBER -3 x 4.1 channel 16" on -

CROSSIMEMEERICS CONTINUES and with rubing Cantern WALLEST S/16<sup>1</sup> PL colid welded with rubing top inst de line nooks DOOR S/16<sup>1</sup> PL with Obing frame FRONT SCIO PL stant formed. PICK UR: Standard cable with 2 × 6 × 1/4 alls guisses at each crossmerniber WHEELS, 10 DIA x/9 long with rease littings DOOR LATOH S Independent ratchet binders with chains venical escond latch CASKETIS Extruded rubber seal with metal teamers WEEDS: All welds continuous except sub-sincture crossmembers EINISH: Coaled inside and out with direction

Structure crossmembers EINISH Costed inside and out with direction metal institution activity cancel color cost P/DROTESTING: Full cancely static test DIMEN SIONS: 22-11 flong (21-8' inside); 99 vide (88 inside); see drawing for height OPTIONS: Steel gitt blast and special painly Amelinalis Heilland Dire olckup ROOF: 3/16' PLirool panels with tubing and channel support frame UDS: 21-88 v 90 imetal rolling lids spling loaded self raising ROLLERS: 4' Vigroove rollers with defini-pearings and grease littings OPENING (2) 50' v 82 openings with 6 divider centered on container

container LATOFR(2) Independent ratchetkoinders With chains

GASKETS) Extruded rubber seal with metal retainers

Heavy Duty Split Metal Rolling Lid



CONI.	A	В
20 YD	41	·53
25 YD	53	65
30 YD	65	77



31

