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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

HOBBS OCD
MAY 29 2012
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Form C-101
Revised August 1, 2011

Permit

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
ConocoPhillips Company 3300 N "A" Street 3300 N "A" STREET Midland, TX 79705	217817
	[3] API Number 025-35485

[4] Property Code	[5] Property Name	[6] Well No.
31667	HARDY 36 STATE	31

[7] Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
F	36	20S	37E		1900'	NORTH	2310'	WEST	LEA

[8] Pool Information

HARDY; TUBB-DRINKARD, NORTH (96356)	

Additional Well Information

[9] Work Type	[10] Well Type	[11] Cable/Rotary	[12] Lease Type	[13] Ground Level Elevation
RECOMPLETE	OIL	R	S	3500'
[14] Multiple	[15] Proposed Depth	[16] Formation	[17] Contractor	[18] Spud Date
NO	7950'	TUBB-DRINKARD N.		06/05/2001
Depth to Ground water	Distance from nearest fresh water well		Distance to nearest surface water	

[19] Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SURFACE	12 1/4"	J-55, 8-5/8"	24#	1500'	1268	SURFACE
PRODUCTION	7 7/8"	J-55, 5 1/2"	17#	7950'	1560	SURFACE

Casing/Cement Program: Additional Comments

ENCLOSED IS PROCEDURES FOR RECOMPLETE

Permit Expires 2 Years From Approval Date Unless Drilling Underway

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
DOUBLE RAM	2000	2	S

Plugback

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.
Ashley Martin

Printed name: Ashley Martin

Title: Staff Regulatory Technician

E-mail Address: Ashley.Martin@conocophillips.com

Date: 05/24/2012 Phone: (432)688-6938

OIL CONSERVATION DIVISION

Approved By:

Title: PETROLEUM ENGINEER

Approved Date: MAY 30 2012 Expiration Date:

Conditions of Approval Attached

MAY 30 2012

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

HOBBS OCD
MAY 29 2012
RECEIVED

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-35485	96356	HARDY; TUBB-DRINKARD, NORTH

[4] Property Code	[5] Property Name	[6] Well Number
31667	HARDY 36 STATE	31

[7] OGRID No.	[8] Operator Name	[9] Elevation
217817	ConocoPhillips Company	3500'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	36	20S	37E		1900'	NORTH	2310'	WEST	LEA

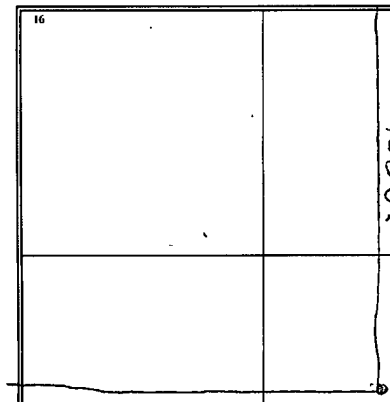
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

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.

[16]



[17] OPERATOR CERTIFICATION

I hereby certify that 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

Ashley Martin 05/24/2012
Signature Date

Ashley Martin
Printed Name

Ashley.Martin@conocophillips.com
E-mail Address

[18] 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.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

COMPLETION PROCEDURE

HARDY 36 STATE # 31

ConocoPhillips

API Number: 30-025-35485

Field: North Hardy

Location: 1900' FNL & 2310' FWL, U.L. F, Sec. 36, T-20-S, R-37-E, Lea County, NM

Depths: TD = 7950' PBTD = 7619'

Elevation: GL = 3500' DF = 3510' KB = 3511' (reference datum)

Casing Data:

Existing & Proposed Casing, Tubing and Packer Information

	OD (in)	Depth (ft)	ID/Drift (inches)	Weight (#/ft)	Grade	Burst (psi)	Burst w/ 1.15 D.F.	Collapse (psi)	Collapse w/ 1.05 D.F.	Volume (Bbls/Ft)
Surf. Csg	8⅝	1500	8.097/7 972	24	J-55	2950	**2565**	1370	**1305**	.0636
Prod. Csg	5½	7950	4.892/4.767	17	J-55	5320	**4626**	4910	**4676**	0232
Prod Tbg	2⅞	7469	2.441/2.347	6.5	L-80	10570	**9191**	11160	**10629**	.00579

Top of Cement: surface Casing Fluid: Fresh Water

Casing Data:

Existing & Proposed Casing, Tubing and Packer Information

	OD (in)	Depth (ft)	ID/Drift (inches)	Weight (#/ft)	Grade	Burst (psi)	Burst w/ 1.15 D.F.	Collapse (psi)	Collapse w/ 1.05 D.F.	Volume (Bbls/Ft)
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Prod. Tbg	2⅞	7469	2.441/2.347	6.5	L-80	10570	**9191**	11160	**10629**	00579

Top of Cement: surface Casing Fluid: Fresh Water

Proposed Cased Hole Perforations

Formation	Perforations (MD)	Frac Grad	Perf Feet	SPF	Phase	Holes	Anticipated Reservoir Pressure	Reservoir
Tubb	6458-6474	84	16	2	60°	32	3004	109°
Stage 2	6492-6514	84	22	2	60°	44	3019	109°
	6522-6548	.84	26	2	60°	52	3027	109°
	6599-6608	.84	9	2	60°	18	3039	109°
Drinkard	6780-6795	.84	15	2	45°	30	3157	111°
Stage 1	6804-6810	.84	6	2	45°	12	3165	111°
	6812-6822	.84	9	2	45°	18	3169	111°
	6824-6831	.84	6	2	45°	12	3175	111°
	6834-6851	.84	17	2	45°	34	3179	111°

Correlation Log: Schlumberger's Platform Express Three Detector Litho-Density Compensated Neutron-NGT dated 6/21/2001
Gun Type: Schlumberger's 3-1/2" SLB Power Jet Omega 3506 HMX, 27.0 gm.

Hydrogen Sulfide (H_2S) - All persons arriving on location must have H_2S certification & training that occurred within the last year. Have H_2S monitoring equipment rigged up and tested prior to drilling out from underneath surface casing. Each presence of H_2S at surface is to be noted on the Wellview daily reports. Reference ConocoPhillips' Hydrogen Sulfide Policy.

- Spills are to be prevented. Utilize a vacuum truck as necessary.
- Throughout the entire completion process, any fluids from the well-bore that are displaced or produced must be sent through the flow-back equipment so that the fluids can be properly disposed. *This note includes Cross-Link fluid samples during treatment. The samples are to be emptied in an approved "Metal" bucket (read: Not Plastic!!) and disposed of properly. The practice of pouring said samples on the ground is NOT acceptable.*
- **Do not put any fluids/chemicals into the reserve pit, use a steel pit to capture all flowback fluids and liquid waste generated on location.**
- Verify that all pressured lines and fittings meet or exceed the MAWP (Maximum Allowable Working Pressure) for the treatment lines of **5000 psi** for the pressure test prior to stimulation operations.
- Well control for this well will be Class 2, Category 1 before and after stimulation. Expected Shut in Casing Pressures (SICP) before & after stimulation should not exceed 2000 psi

Prejob considerations:

10 frac tanks will be filled with Fresh Water;

- **Schlumberger M-298 (@ 1.2 lbs./mgal)** bactericide **must** be added to the first load when filling each frac tank. The ConocoPhillips' field supervisor must be on location for this activity.

- **Schlumberger's B244 (@ 0.75gal/mgal**) bactericide will also be added on the fly during the treatments.

Prior to service unit MI & RU, dump 20 bbl xylene down 5-1/2" casing. Test anchors. Record casing pressure and verify well is dead.

Procedure:

1. MI & RU service unit. ND WH and NU 1 X 7-1/16" 5K Blowout Preventer (Double BOP: blind ram & pipe ram)and environmental tray.

2. Haul in 2 7/8" L80 , 6.5 #/ft WS enough for 7600 ft. RIH w/ 5 ½" RBP , retrieval/setting tool, sub joint and 5 ½" treatment packer on 2 7/8" WS. Forward Circulate 1 tubing volume (44 bbls).Set 5 ½" RBP @ 6951' . PU load and set 5 ½" Treatment Packer @ 6500'.

3. RU **5000 psi** lubricator with grease injector.

4. Test the lubricator to **3000 psi**. Use a pump kill truck.

5. RIH w/ CCL and Gamma Ray* and SLB capsule gun 1 11/16" Power Spiral Enerjet HMX, 8gr **on 45 degree phasing**. Shots per foot information on table below. Hold **500 psi** on casing for first interval shot and perforate the following intervals

stage	*interval*		*ft.*	*spf*	*holes*
Stage 1	6780	6795	15	2	30
Drinkard	6804	6810	6	2	12
	6812	6822	10	2	20
	6824	6831	7	2	14
	6834	6851	17	2	34
				Total Holes	**110**

6. Correlate gamma ray from Schlumberger Compensated Neutron Log, dated **06/24/2010** on first gun run only.

7. Pull fired guns into lubricator. Close lower manual valve and bleed lubricator. ND/LD lubricator and guns. . Verify that all shots have fired. Report "stabilized" shut-in pressure after perforating.

8. MIRU Schlumberger acidizing equipment.

9. Conduct a safety meeting reviewing test pressure and procedure **before** pressure testing all connections.

10. Pressure test the service company's treating lines to **5000 psi**. Make sure the pressure does not decrease more than 200 psi over 5 minutes.

11. Set treating line pop-off at 4500 psi. Set pump trips at 4200 psi. Set annulus pop-off at 700 psi.(load 2 7/8" x 5 ½" annuluss and hold 500 psi during job)

12. Pump 8000 gals of 15% NEFE HCL acid job as follows:

Pump 8000 gals of 15% NEFE HCL @ 2-4 Bpm using 100 5/8" .9 SG ball sealers evenly spaced in the acid. Flush to ' with fresh water (26± bbls).Record ISIP

Acid to contain the following additives in at least the following concentration per 1000 gals of acid:
3.0 gal of corrosion inhibitor
4.0 gal of Iron control agent
0.5 gal of Non-emulsifier agent

13. Unset 5 ½ " treating packer and reverse circulate remaining balls off. Close Hydraulic master valve. Reset treating packer @ 6500'. RDMO pumping services equipment.

14. RU swab equipment and swab test. Start swabbing recording recovered volumes. Swab until 80% of volume recovered or fluid clears up, whichever comes first. RD swab equipment.

15. Unset 5 ½" treating and retrieve RBP. PU and reset RBP @ 6650'. TOH with 5 ½" treating packer on 2 7/8" WS. LD Packer and WS.

16. Install 7 1/16" 5K Manual frac valve on top of BOP.

17. Install a 10K rated isolation tool incorporating a 10K hydraulic frac valve.

18. Install a 10K rated goat head. Ensure at least 2 X 4" connections on either side of a full bore opening in the middle to accommodate lubricator.

19. Test wellhead assembly and casing to **5000 psi**. Use a C&A (aka "Kill") pumps truck or equivalent to pressure test.

    a. Conduct a safety meeting reviewing test pressure and procedure **before** pressure testing all connections..
    b. Connect pump truck to one 2-1/16" 5K casing valve.
    c. Close 7-1/16" 5K manual frac valve and ensure rams on BOP are open.

d. Commence internal testing of BOP, manual frac valve and casing.
e. Check for leaks on flange connections, frac valves, and casing valves.
f. Bleed pressure off. Ensure bleed off line does not empty fluid on lease; direct fluid to open top tank.
g. Close manual 7 1/16" 5K valve.
h. Ensure both 2-1/16" 5K casing valves are closed.

Record time, date, pressure, & comments related to pressure test.

20. RU 5K psi lubricator with grease injector.

21. Test the lubricator to 3000 psi. Use pump kill truck.

22. RIH w/ CCL, Gamma Ray* and SLB 3 3/8" **HSD Power Jet 3406, HMX , 22.8 g** hollow carrier perforating gun **on 60 degree phasing**. Shots per foot information on table below. Hold **500 psi** on casing for first interval shot and perforate the following intervals.

stage	***interval***		***ft.***	***spf***	***holes***
Tubb	6458	6474	16	2	32
	6492	6514	22	2	44
	6522	6548	26	2	52
	6599	6608	9	2	18
				Total Holes	**146**

23. *Correlate gamma ray from Schlumberger Compensated Neutron Log, dated **6/24/2010**

24. Pull fired guns into lubricator. Close Lower Manual Frac Valve. Bleed Lubricator. Close Upper Frac Valve. ND/LD lubricator and guns. Verify that all shots have fired. Report "stabilized" shut-in pressure after perforating in WellView.

25. Conduct a safety meeting reviewing test pressure and procedure **before** pressure testing all connections.
26. Pressure test the service company's treating lines to **5000 psi**. Make sure the pressure does not decrease more than 200 psi over 5 minutes.

Production casing is a mixed string of 5 ½" 17.0 ppf L-80 (to a depth of 1,005 ft.) and 5 ½" 17.0 ppf J-55 (to TD of 7079 ft.). The maximum allowable working pressure (hereafter, MAWP) will be 5000 psi. Both stages will be pumped through a 10K Isolation Tool which will be used to test the service company's treatment iron to 6000 psi. The hydraulic valve on the isolation tool is rated to 10K.

Set the in-line Nitrogen pop-off at 4750 psi and Pump Trips at 4500 psi

The following are required by ConocoPhillips

- ***N_2 Pop-off release valve (Important! N_2 bottle to be secured to stable support – i.e., not free standing)***
- ***Remote ball launcher.***

Important:

****Portable Shower on location as Acid will be pumped. Ensure all personnel that may come in contact with acid (eg. lines, hoses, connections, etc.), be observant of safe work practices and wear all commensurate PPE.***

QA/QC

- Confirm that on-site water source is acceptable and equivalent to qualified source water analysis.
- Acid system(s) are to contain Iron control/chelating agents, corrosion inhibitor and non-emulsifier.
- Test all additives, gel systems, and proppant to that which was tested at the district lab. Please notify Company representative of any discrepencies.

Catch samples during each of the frac stages. Record date, time, & stage.

27. Pump **2000** gals. 15% HCl Acid with **64** 1.1 SG, MR Bio-Balls spaced out in the acid (2 balls per bbl). When acid is on perfs, bring rate up to 15-16 Bpm.

28. Surge balls off perforations three times and allow 10* minutes for balls to fall. Record volume of water that was flowed back to open top tank.

29. Pump 200 bbls of **WF 110 @** 20 bpm (Pre pad) to perform FET. Once pumps has ceased look for : ISIP , Closure time and leads of tortuosity.

30. Compute Closure time in the following Equation to find out fluid efficiency :

(Vol Injected)/(Closure time * Injection Rate)= Fluid efficiency

Vol injected: 200 bbls
Injection Rate: 20 bbls/min
Closure time: ? Min
If fluid efficiency above 70% contact production engineer.

31. After analysis and if no adjustments are deemed necessary, pump job as follows.

    Note: ProTechnic to tag frac (Ir-192 @ 0.425 mCi per 1000# 20/40 Brown & Sb-124 @ 0.4 miC per 1000# resin-coated 16/30 super LC)

- Pump 22,000 gals. YF125ST+ PAD
- Pump 16,000 gals. YF125ST+ w/ 0.50 lbm/gal **20/40 Brown Sand**
- Pump 16,000 gals. YF125ST+ w/ 1 lbm/gal **20/40 Brown Sand**
- Pump 16000 gals. YF125ST+ w/ 2 lbm/gal **20/40 Brown Sand**
- Pump 16,000 gals. YF125ST+ w/ 3 lbm/gal **20/40 Brown Sand**
- Pump 16,000 gals. YF125ST+ w/ 4 lbm/gal **16/30 SuperLC**
- Spot 1000 gals. 15% HCl acid

Flush with 6190 gals. WF110

Total propant: 168000 # of sand.

See pump schedule attached.

32. Report ISIP, SITP @ 5 Min, 10 min, 1 hr.

33. RD SLB, Start flowback of the well. Start with 1/2 bpm, if pressure readings are erratic increase rate to 1 bpm until pressure stabilize.

34. Verify well is dead. NU lubricator, RU ProTechnic post frac Spectra Scan Spectral Gamma Ray memory tool. Log from 6610 to 5900.

35. POOH, ND & LD lubricator.

36. RIH w 5 ½" RBP retrieving tool on 2 7/8" 6.5 #/ft, L80 WS. Unset/Retrieve RBP . TOH w RBP and WS. LD WS.

37. RIH with 2 7/8" tubing according to design in Well view .NDBOP & NUWH.RIH with pump and rods. Space and hang well on. Load tubing and check pump action.

38. RDMO well service rig and return well to production.