Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs
HOBBS OCD
MAR 09 2015
RECEIVED

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM112941

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
COBBER 21 FED 1H

2. Name of Operator
DEVON ENERGY PRODUCTION CO LP
Contact: DAVID H COOK
EMail: david.cook@dvn.com

9. API Well No.
30-025-42311-00-X1

3a. Address
333 WEST SHERIDAN AVE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
Ph: 405-552-7848

10. Field and Pool, or Exploratory
BRADLEY

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 21 T26S R34E SESE 65FSL 660FEL
32.021870 N Lat, 103.468410 W Lon

11. County or Parish, and State
LEA COUNTY, NM

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

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

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Devon Energy Production Co., L.P. respectfully requests to add a pilot hole to the approved drill plan for the subject well.

Proposed pilot hole will be approximately 10,800' TVD.

Please see the attached revised drill plan and directional survey.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #293845 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION CO LP, sent to the Hobbs
Committed to AFMSS for processing by JENNIFER MASON on 03/04/2015 (15JAM0086SE)

Name *(Printed/Typed)* DAVID H COOK — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 03/04/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
MAR 4 2015
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By — Title — Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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

MAR 10 2015

DRILLING PROGRAM

Devon Energy Production Company, L.P.
Cobber 21 Fed 1H

1. **Geologic Name of Surface Formation:** Quaternary Alluvium

2. **Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a.	Fresh Water	200'	
b.	Rustler	960'	Barren
c.	Top of Salt	1100'	Barren
d.	Castile	3460'	Barren
e.	Base of Salt	5042'	Barren
f.	Delaware	5296'	Oil / Gas
g.	Bell Canyon	5332'	Oil / Gas
h.	Cherry Canyon	6340'	Oil / Gas
i.	Brushy Canyon	7945'	Oil / Gas
j.	Bone Spring	9546'	Oil / Gas
k.	Upper Leonard Shale	9561'	Oil / Gas
l.	Upper Leonard Shale Base	9861'	Oil / Gas
m.	1st Bone Spring Sand	10586'	Oil / Gas
	Total Depths	9,800' TVD	14386' MD Pilot Hole: 10,800' TVD

3. **Pressure Control Equipment:**

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

See COA

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig drills this well. Otherwise no flex line is needed**. The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

4. **Casing Program:**

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0 - 1000'	13-3/8"	0 - 1000'	48	STC	H-40	1.72	3.87	11.27
12-1/4"	1000-5300'	9-5/8"	0-5300' 5340'	40	BTC	HCK-55	1.53	1.43	4.37
8-3/4"	5340 5300-14386'	7"	0-9000'	29	BTC	P-110	2.57	1.27	2.76
		5-1/2"	9000'-14386'	17	BTC	P-110	1.78	2.20	3.31

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 9800'

5. **Proposed mud Circulations System:**

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0-1000'	8.4-8.6	30-34	N/C	FW
1000-5300'	10	28-32	N/C	Brine
5300-14386'	8.6-9.2	28-32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface Casing	410	13.5	9.08	1.72	Lead	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water
	560	14.8	6.34	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate Casing	1190	12.9	9.82	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
5-1/2" Production Casing Tuned	570	11	14.94	2.66	Lead	Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake + 76.5% Fresh Water
	1360	14.5	5.31	1.20	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

See COA

Pilot Hole Plug Back

Plug top	Plug Bottom	% Excess	No. Sacks	Wt. lb/gal	Yld ft3/sack	Water gal/sk	Slurry Description and Cement Type
9033	10800	10	685	15.6	1.19	5.42	Class H + 0.5% BWOC HR-601 + 0.2% Halad-9

TOC for all Strings:

Surface	@	0'
Intermediate	@	0'
Production	@	4800'

Notes:

- Cement volumes Surface 100%, Intermediate 50%, Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and/or caliper log data

devon

Cobber 21 Fed 1H
Lea Co, NM

Weatherford

Plan Data for Cobber 21 Fed 1H Lat

Plan Point Information:
DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)
0.00	0.00	0.00	0.00	0.00	0.00	372767.99	809394.37	0.00	0.00
9233.54	0.00	0.00	9233.54	0.00	0.00	372767.99	809394.37	0.00	0.00
9983.54	90.00	359.50	9711.00	477.45	-4.14	373245.44	809390.23	477.45	12.00
14386.11	90.00	359.50	9711.00	4879.85	-42.32	377647.84	809352.05	4879.85	0.00

Plan Data for Cobber 21 Fed 1H Lat

Slot: Cobber 21 Fed 1H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 372767.99USft Latitude: 32°1'18.7"
+E/-W: 0.00USft Easting: 809394.37USft Longitude: -103°28'6.3"
Elevation Above VRD: 3286.00USft

Plan Data for Cobber 21 Fed 1H Lat

Target Set Information:
Name: Cobber 21 Fed 1H
Position offsets from Slot centre

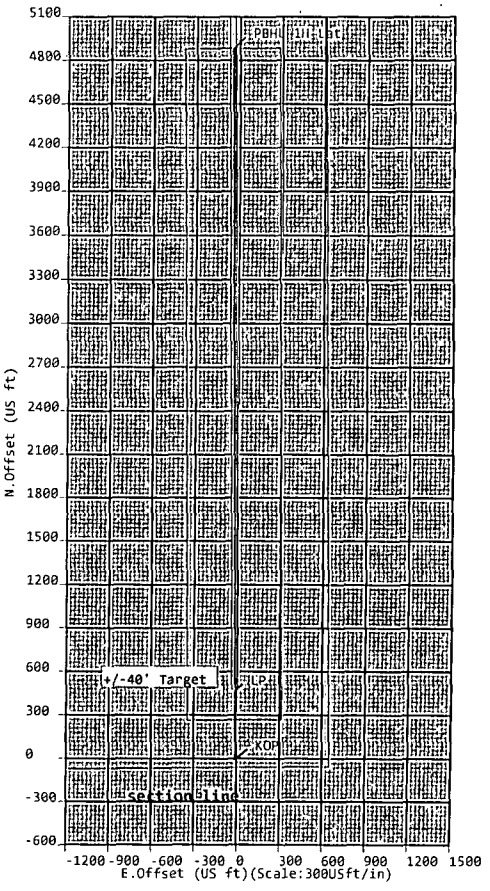
Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Shape	Comment
PBHL	9711.00	4879.85	-42.32	377647.84	809352.05	Cuboid	

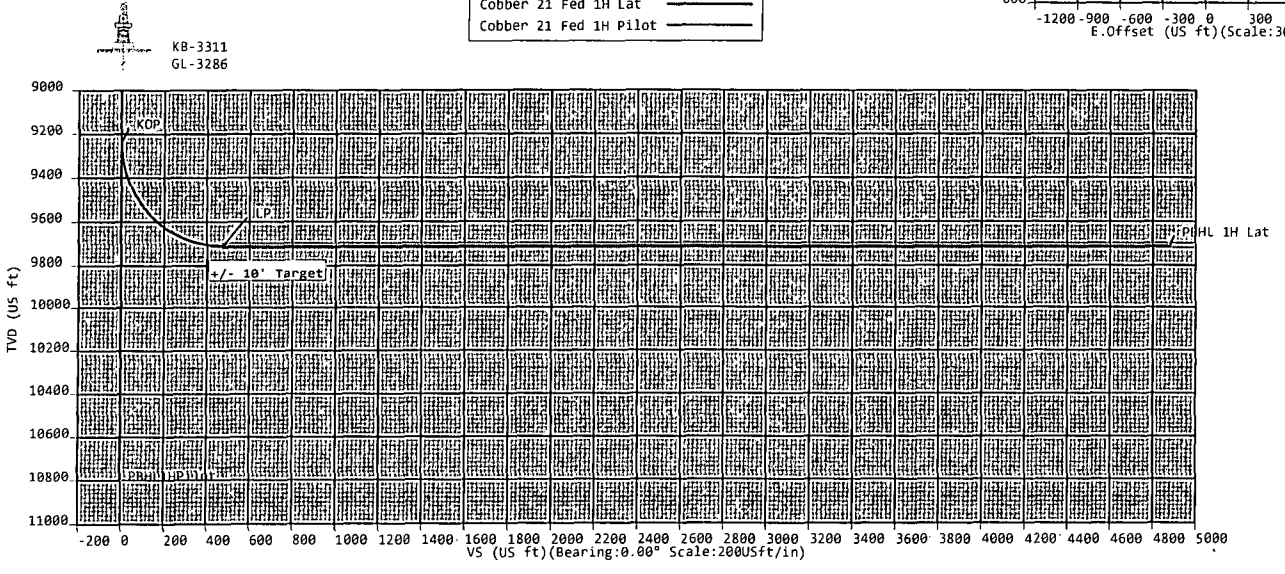
Plan Data for Cobber 21 Fed 1H Lat

Well: Cobber 21 Fed 1H Lat
Type: Side-Track
File Number:
Plan Folder: P1 Plan: P1:V3
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 0.00°
+E/-W: 0.00USft
Magnetic Parameters:

Model:	Field Strength:	Declination:	Dip:	Date:
BGGM	48095(nT)	7.23°	59.91°	2015-04-15

Cobber 21 Fed 1H Lat
Cobber 21 Fed 1H Pilot





Sign Off: Russell Joyner

5D Plan Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*
Site Name: *Cobber 21 Fed 1H*
Well Name: *Cobber 21 Fed 1H Lat*
Plan: *P1:V3*

25 February 2015

Weatherford®

Cobber 21 Fed 1H Lat

Field Name
Lea Co, NM Nad 83 NMEZ

Map Units : US ft
Company Name : Devon Energy
Vertical Reference Datum (VRD) : Mean Sea Level
Projected Coordinate System : NAD83 / New Mexico East (ftUS)
Comment :

Site Name
Cobber 21 Fed 1H

Units : US ft
North Reference : Grid
Convergence Angle : 0.46

Position
Northing : 372767.99 US ft
Latitude : 32° 1' 18.73"
Easting : 809394.37 US ft
Longitude : -103° 28' 6.27"

Elevation above Mean Sea Level: 3286.00 US ft
Comment :

Slot Name
Cobber 21 Fed 1H

Position (Offsets relative to Site Centre)
+N / -S : 0.00 US ft
Northing : 372767.99 US ft
Latitude : 32°1'18.73"
+E / -W : 0.00 US ft
Easting : 809394.37 US ft
Longitude : -103°28'6.27"
Slot TVD Reference : Ground Elevation
Elevation above Mean Sea Level : 3286.00 US ft
Comment :

Well Name
Cobber 21 Fed 1H Lat

Type : Sidetrack
UWI :
Plan : P1:V3
Parent : Cobber 21 Fed 1H Pilot
Tie Point Method : MD
Tie Point : 9233.54 US ft
Rig Height *Kelly Bushing* : 25.00 US ft
Relative to Mean Sea Level: 3311.00 US ft
Comment :
Closure Distance : 4880.03 US ft
Closure Azimuth : 359.503°
Vertical Section (Position of Origin Relative to Slot)
+N / -S : 0.00 US ft
+E / -W : 0.00 US ft
Az : 359.50°
Magnetic Parameters
Model : BGGM
Field Strength : 48095.7nT
Dec : 7.23°
Dip : 59.91°
Date : 15/Apr/2015

Target Set

Name : Cobber 21 Fed 1H
Number of Targets : 1

Comment :

Target Name:
PBHL

Position (Relative to Slot centre)
+N / -S : 4879.85 US ft
Northing : 377647.84 US ft
Latitude : 32°2'7.02"
+E / -W : -42.32 US ft
Easting : 809352.05 US ft
Longitude : -103°28'6.31"

Shape:
Cuboid

TVD (Kelly Bushing) : 9711.00 US ft

Orientation **Azimuth :** 359.50°
Inclination : 0.00°
Dimensions **Length :** 8805.00 US ft
Breadth : 40.00 US ft
Height : 20.00 US ft

Well path created using minimum curvature

5D Plan Report

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	B.Rate (°/100 US ft)	T.Rate (°/100 US ft)	T.Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13 3/8 in
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9 5/8 in
9233.54	0.00	0.00	9233.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP
9983.54	90.00	359.50	9711.00	477.45	-4.14	477.47	12.00	12.00	0.00	359.50	LP
14386.11	90.00	359.50	9711.00	4879.85	-42.32	4880.03	0.00	0.00	0.00	0.00	PBHL 1H Lat

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	0.00	372767.99	809394.37	
9233.54	0.00	0.00	9233.54	0.00	0.00	0.00	0.00	372767.99	809394.37	KOP
9300.00	7.98	359.50	9299.79	4.62	-0.04	4.62	12.00	372772.61	809394.33	
9400.00	19.98	359.50	9396.65	28.72	-0.25	28.72	12.00	372796.71	809394.12	
9500.00	31.98	359.50	9486.38	72.44	-0.63	72.44	12.00	372840.43	809393.74	
9600.00	43.98	359.50	9565.07	133.86	-1.16	133.86	12.00	372901.85	809393.21	
9700.00	55.98	359.50	9629.26	210.29	-1.82	210.30	12.00	372978.28	809392.55	
9800.00	67.98	359.50	9676.16	298.40	-2.59	298.41	12.00	373066.39	809391.78	
9900.00	79.98	359.50	9703.72	394.34	-3.42	394.35	12.00	373162.33	809390.95	
9983.54	90.00	359.50	9711.00	477.45	-4.14	477.47	12.00	373245.44	809390.23	LP
10000.00	90.00	359.50	9711.00	493.91	-4.28	493.92	0.00	373261.90	809390.09	
10100.00	90.00	359.50	9711.00	593.90	-5.15	593.92	0.00	373361.89	809389.22	
10200.00	90.00	359.50	9711.00	693.90	-6.02	693.92	0.00	373461.89	809388.35	
10300.00	90.00	359.50	9711.00	793.89	-6.88	793.92	0.00	373561.88	809387.49	
10400.00	90.00	359.50	9711.00	893.89	-7.75	893.92	0.00	373661.88	809386.62	
10500.00	90.00	359.50	9711.00	993.89	-8.62	993.92	0.00	373761.88	809385.75	
10600.00	90.00	359.50	9711.00	1093.88	-9.49	1093.92	0.00	373861.87	809384.88	
10700.00	90.00	359.50	9711.00	1193.88	-10.35	1193.92	0.00	373961.87	809384.02	
10800.00	90.00	359.50	9711.00	1293.88	-11.22	1293.92	0.00	374061.87	809383.15	
10900.00	90.00	359.50	9711.00	1393.87	-12.09	1393.92	0.00	374161.86	809382.28	
11000.00	90.00	359.50	9711.00	1493.87	-12.96	1493.92	0.00	374261.86	809381.41	
11100.00	90.00	359.50	9711.00	1593.86	-13.82	1593.92	0.00	374361.85	809380.55	
11200.00	90.00	359.50	9711.00	1693.86	-14.69	1693.92	0.00	374461.85	809379.68	
11300.00	90.00	359.50	9711.00	1793.86	-15.56	1793.92	0.00	374561.85	809378.81	
11400.00	90.00	359.50	9711.00	1893.85	-16.42	1893.92	0.00	374661.84	809377.95	
11500.00	90.00	359.50	9711.00	1993.85	-17.29	1993.92	0.00	374761.84	809377.08	
11600.00	90.00	359.50	9711.00	2093.85	-18.16	2093.92	0.00	374861.84	809376.21	
11700.00	90.00	359.50	9711.00	2193.84	-19.03	2193.92	0.00	374961.83	809375.34	
11800.00	90.00	359.50	9711.00	2293.84	-19.89	2293.92	0.00	375061.83	809374.48	
11900.00	90.00	359.50	9711.00	2393.83	-20.76	2393.92	0.00	375161.82	809373.61	
12000.00	90.00	359.50	9711.00	2493.83	-21.63	2493.92	0.00	375261.82	809372.74	
12100.00	90.00	359.50	9711.00	2593.83	-22.49	2593.92	0.00	375361.82	809371.88	
12200.00	90.00	359.50	9711.00	2693.82	-23.36	2693.92	0.00	375461.81	809371.01	
12300.00	90.00	359.50	9711.00	2793.82	-24.23	2793.92	0.00	375561.81	809370.14	
12400.00	90.00	359.50	9711.00	2893.82	-25.10	2893.92	0.00	375661.81	809369.27	
12500.00	90.00	359.50	9711.00	2993.81	-25.96	2993.92	0.00	375761.80	809368.41	
12600.00	90.00	359.50	9711.00	3093.81	-26.83	3093.92	0.00	375861.80	809367.54	
12700.00	90.00	359.50	9711.00	3193.80	-27.70	3193.92	0.00	375961.79	809366.67	
12800.00	90.00	359.50	9711.00	3293.80	-28.57	3293.92	0.00	376061.79	809365.80	
12900.00	90.00	359.50	9711.00	3393.80	-29.43	3393.92	0.00	376161.79	809364.94	
13000.00	90.00	359.50	9711.00	3493.79	-30.30	3493.92	0.00	376261.78	809364.07	
13100.00	90.00	359.50	9711.00	3593.79	-31.17	3593.92	0.00	376361.78	809363.20	
13200.00	90.00	359.50	9711.00	3693.79	-32.03	3693.92	0.00	376461.78	809362.34	
13300.00	90.00	359.50	9711.00	3793.78	-32.90	3793.92	0.00	376561.77	809361.47	
13400.00	90.00	359.50	9711.00	3893.78	-33.77	3893.92	0.00	376661.77	809360.60	
13500.00	90.00	359.50	9711.00	3993.77	-34.64	3993.92	0.00	376761.76	809359.73	
13600.00	90.00	359.50	9711.00	4093.77	-35.50	4093.92	0.00	376861.76	809358.87	
13700.00	90.00	359.50	9711.00	4193.77	-36.37	4193.92	0.00	376961.76	809358.00	
13800.00	90.00	359.50	9711.00	4293.76	-37.24	4293.92	0.00	377061.75	809357.13	

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
13900.00	90.00	359.50	9711.00	4393.76	-38.10	4393.92	0.00	377161.75	809356.27	
14000.00	90.00	359.50	9711.00	4493.76	-38.97	4493.92	0.00	377261.75	809355.40	
14100.00	90.00	359.50	9711.00	4593.75	-39.84	4593.92	0.00	377361.74	809354.53	
14200.00	90.00	359.50	9711.00	4693.75	-40.71	4693.92	0.00	377461.74	809353.66	
14300.00	90.00	359.50	9711.00	4793.74	-41.57	4793.92	0.00	377561.73	809352.80	
14386.11	90.00	359.50	9711.00	4879.85	-42.32	4880.03	0.00	377647.84	809352.05	PBHL 1H Lat

Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date:	February 25, 2015
Job Number:	
Customer:	Devon Energy
Well Name:	Cobber 21 Fed 1H
API Number:	
Rig Name:	
Location:	Lea Co, NM Nad83 NME
Block:	
Engineer:	RWJ

NAD83 / New Mexico East (ftUS)
Projected Coordinate System
Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980
EPSG: 2257
North: 372767.99 US Survey Foot
East: 809394.37 US Survey Foot
Convergence: 0.46°
Declination: 7.23°
Total Correction: 6.77°
Datum Transformation: none

NAD83 (1986)
Geodetic Coordinate System
Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980
EPSG: 4269
Latitude: 32.02187 Degree
Longitude: -103.46841 Degree

Geodetic Location WGS84

MSL Elevation	=	0 m
Latitude	=	32° 01' 18.73" N
Longitude	=	103° 28' 06.27" W

			[True North Offset]		
Magnetic Declination	=	7.23 deg			
Local Gravity	=	.9988 g	CheckSum	=	6801
Local Field Strength	=	48096 nT	Magnetic Vector X	=	23921 nT
Magnetic Dip	=	59.91 deg	Magnetic Vector Y	=	3033 nT
Magnetic Model	=	bggm2014.dat	Magnetic Vector Z	=	41615 nT
Run Date	=	April 15, 2015	Magnetic Vector H	=	24112 nT

Signed:_____ Date:_____

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMNM-112941
WELL NAME & NO.:	Cobber 21 Fed 1H
SURFACE HOLE FOOTAGE:	0065' FSL & 0660' FEL
BOTTOM HOLE FOOTAGE	0330' FNL & 0660' FEL
LOCATION:	Section 21, T. 26 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico
API:	30-025-42311

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Red Beds, Rustler, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **1000** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **5340** feet (**Lamar Limestone**), is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

The pilot hole plugging procedure is approved as written. Note plug top on Subsequent Report sundry of drilling activities.

3. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 14% - Additional cement may be required.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 030415