Form 3160-5
(March 2012)

HOBBS OCD
MAR 14 2014
RECEIVED

OCD Hobbs

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

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 page 2.*

5. Lease Serial No.
NM 92199 / VB 2228

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
40064

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

8. Well Name and No.
West Copperline 29 Fed State Com # 2H

2. Name of Operator
Caza Operating, LLC

9. API Well No.
30 025 41640

3a. Address
200 N. Loraine, Suite 1550, Midland, Tx 79701

3b. Phone No. *(include area code)*
432 682 7424

10. Field and Pool or Exploratory Area
Antelope Ridge, Bone Spring West (2209)

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
330 FNL & 660 FWL, Sec 29, T-23-S, R-34-E Unit D

11. County or Parish, State
Lea , New Mexico

12. CHECK THE 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
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Caza Operating LLC request changes to the existing approved APD's directional & casing design. The original approval was for a TD of 15,889' subsequent to drilling a vertical pilot to 11,900 MD. Caza will now not drill a pilot w/ KOP changed from 10,990 ft to ±10,000 ft. Lateral will be changed from 11,475' TVD to 10,540' TVD. Measured depth will be changed from 15,889 ft to ± 14958. Azimuth has also changed from 180° to 183°. Our BHL will be ± 330 FSL & 380 FWL according to the Antelope Ridge Bone Spring West 2209 field rules. Casing design is attached along with the corrected well path/plan. Cement slurries will be the same but volumes will differ due to the MD changes in the vertical/lateral production hole. Cement Calculations attached.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Richard L. Wright

Title Operations Manager

Signature Richard L. Wright

Date 02/19/2014

APPROVED
FEB 28 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

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.

(Instructions on page 2)

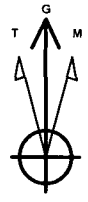
MAR 18 2014

Caza Operating, LLC

West Copperline 29 State Com #2H

Geodetic System:US State Plane 1927 (Exact solution)
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Refernce to North: Grid
Lat: 32° 16' 54.546 N
Long: 103° 29' 52.838 W
Lea County, NM

M3P DIRECTIONAL SERVICES



Azimuths to Grid North
True North: -0.45°
Magnetic North: 6.78°
Magnetic Field

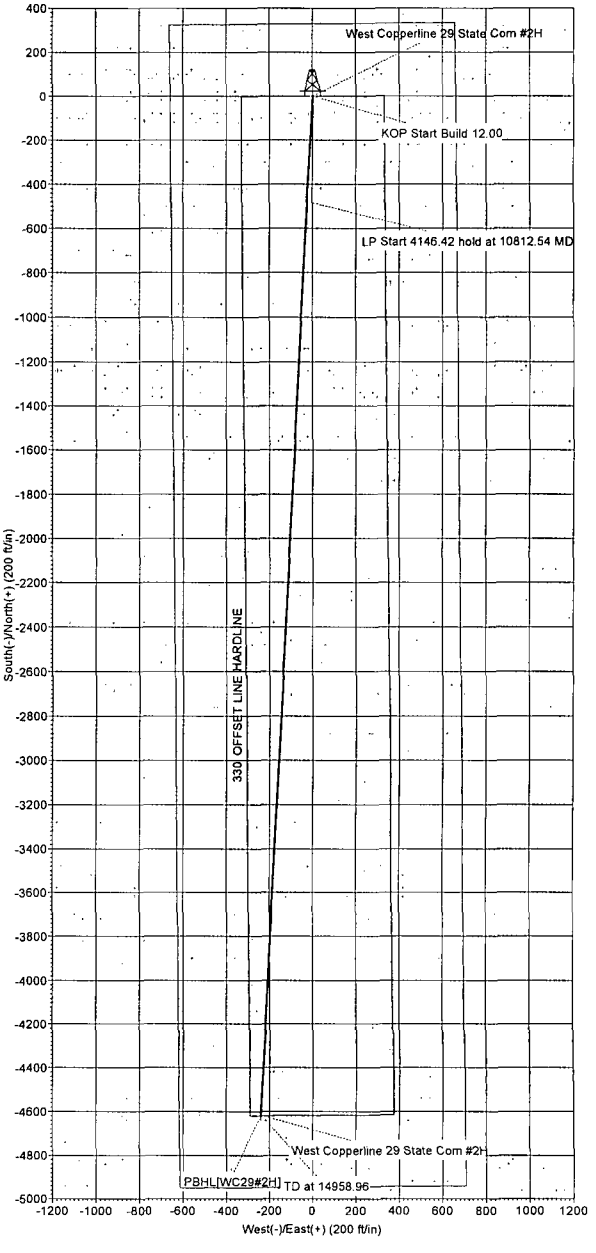
Strength: 48391.4snT
Dip Angle: 60.19°
Date: 2/12/2014
Model: IGRF2010

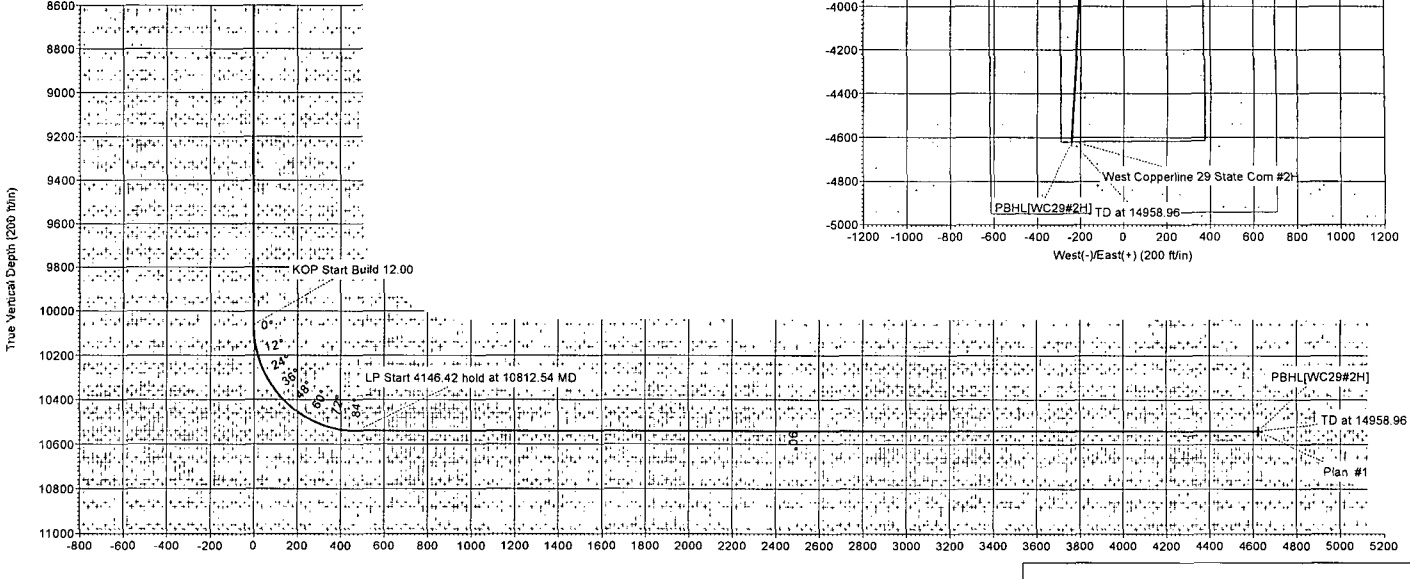
ANNOTATIONS

TVD	MD	Annotation
10062.54	10062.54	KOP Start Build 12.00
10540.00	10812.54	LP Start 4146.42 hold at 10812.54 MD
10540.00	14958.96	TD at 14958.96

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10062.54	0.00	0.00	10062.54	0.00	0.00	0.00	0.00	
10812.54	90.00	182.94	10540.00	-476.83	-24.53	12.00	477.46	
14958.96	90.00	182.94	10540.00	-4617.78	-237.54	0.00	4623.89	PBHL[WC29#2H]





Plan: Plan #1 (West Copperline 29 State Com #2H/Lateral #1)
Created By: Michael Herrera Date: December 13, 2012

Caza Operating, LLC.

Lea County, NM
West Copperline 29 State Com #2H
West Copperline 29 State Com #2H

Laterl #1

Plan: Plan #1

Standard Planning Report

14 February, 2014

M3P
DIRECTIONAL
SERVICES

M3P Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site West Copperline 29 State Com #2H
Company:	Caza Operating, LLC.	**TVD Reference:**	WELL @ 3585.50ft
Project:	Lea County, NM	**MD Reference:**	WELL @ 3585.50ft
Site:	West Copperline 29 State Com #2H	**North Reference:**	Grid
Well:	West Copperline 29 State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Laterl #1		
Design:	Plan #1		

Project Lea County, NM

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

Site West Copperline 29 State Com #2H

Site Position:		**Northing:**	467,248.90 ft	**Latitude:**	32° 16' 54.546 N
From:	Map	**Easting:**	758,156.00 ft	**Longitude:**	103° 29' 52.838 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.45 °

Well West Copperline 29 State Com #2H

Well Position	**+N/-S**	0.00 ft	**Northing:**	467,248.90 ft	**Latitude:**	32° 16' 54.546 N
	+E/-W	0.00 ft	**Easting:**	758,156.00 ft	**Longitude:**	103° 29' 52.838 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,567.00 ft

Wellbore Laterl #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/12/2014	7.23	60.19	48,391

Design Plan #1

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	182.94

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,062.54	0.00	0.00	10,062.54	0.00	0.00	0.00	0.00	0.00	0.00	
10,812.54	90.00	182.94	10,540.00	-476.83	-24.53	12.00	12.00	0.00	182.94	
14,958.96	90.00	182.94	10,540.00	-4,617.78	-237.54	0.00	0.00	0.00	0.00	PBHL[WC29#2H]

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site West Copperline 29 State Com #2H
Company:	Caza Operating, LLC.	**TVD Reference:**	WELL @ 3585.50ft
Project:	Lea County, NM	**MD Reference:**	WELL @ 3585.50ft
Site:	West Copperline 29 State Com #2H	**North Reference:**	Grid
Well:	West Copperline 29 State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Laterl #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,062.54	0.00	0.00	10,062.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 12.00									
10,100.02	4.50	182.94	10,099.98	-1.47	-0.08	1.47	11.99	11.99	0.00
10,200.02	16.50	182.94	10,198.13	-19.63	-1.01	19.66	12.00	12.00	0.00
10,300.02	28.50	182.94	10,290.35	-57.78	-2.97	57.85	12.00	12.00	0.00
10,400.02	40.50	182.94	10,372.61	-114.24	-5.88	114.39	12.00	12.00	0.00
10,500.02	52.50	182.94	10,441.33	-186.54	-9.60	186.79	12.00	12.00	0.00
10,600.02	64.50	182.94	10,493.48	-271.54	-13.97	271.90	12.00	12.00	0.00
10,700.02	76.50	182.94	10,526.80	-365.51	-18.80	365.99	12.00	12.00	0.00
10,800.02	88.50	182.94	10,539.84	-464.34	-23.89	464.95	12.00	12.00	0.00
10,812.54	90.00	182.94	10,540.00	-476.83	-24.53	477.46	12.02	12.02	0.00
LP Start 4146.42 hold at 10812.54 MD									
10,900.02	90.00	182.94	10,540.00	-564.21	-29.02	564.95	0.00	0.00	0.00
11,000.02	90.00	182.94	10,540.00	-664.07	-34.16	664.95	0.00	0.00	0.00
11,100.02	90.00	182.94	10,540.00	-763.94	-39.30	764.95	0.00	0.00	0.00
11,200.02	90.00	182.94	10,540.00	-863.81	-44.43	864.95	0.00	0.00	0.00
11,300.02	90.00	182.94	10,540.00	-963.68	-49.57	964.95	0.00	0.00	0.00
11,400.02	90.00	182.94	10,540.00	-1,063.55	-54.71	1,064.95	0.00	0.00	0.00
11,500.02	90.00	182.94	10,540.00	-1,163.41	-59.85	1,164.95	0.00	0.00	0.00
11,600.02	90.00	182.94	10,540.00	-1,263.28	-64.98	1,264.95	0.00	0.00	0.00
11,700.02	90.00	182.94	10,540.00	-1,363.15	-70.12	1,364.95	0.00	0.00	0.00
11,800.02	90.00	182.94	10,540.00	-1,463.02	-75.26	1,464.95	0.00	0.00	0.00
11,900.02	90.00	182.94	10,540.00	-1,562.89	-80.39	1,564.95	0.00	0.00	0.00
12,000.02	90.00	182.94	10,540.00	-1,662.76	-85.53	1,664.95	0.00	0.00	0.00
12,100.02	90.00	182.94	10,540.00	-1,762.62	-90.67	1,764.95	0.00	0.00	0.00
12,200.02	90.00	182.94	10,540.00	-1,862.49	-95.81	1,864.95	0.00	0.00	0.00
12,300.02	90.00	182.94	10,540.00	-1,962.36	-100.94	1,964.95	0.00	0.00	0.00
12,400.03	90.00	182.94	10,540.00	-2,062.23	-106.08	2,064.95	0.00	0.00	0.00
12,500.03	90.00	182.94	10,540.00	-2,162.10	-111.22	2,164.95	0.00	0.00	0.00
12,600.03	90.00	182.94	10,540.00	-2,261.96	-116.35	2,264.95	0.00	0.00	0.00
12,700.03	90.00	182.94	10,540.00	-2,361.83	-121.49	2,364.96	0.00	0.00	0.00
12,800.03	90.00	182.94	10,540.00	-2,461.70	-126.63	2,464.96	0.00	0.00	0.00
12,900.03	90.00	182.94	10,540.00	-2,561.57	-131.76	2,564.96	0.00	0.00	0.00
13,000.03	90.00	182.94	10,540.00	-2,661.44	-136.90	2,664.96	0.00	0.00	0.00
13,100.03	90.00	182.94	10,540.00	-2,761.31	-142.04	2,764.96	0.00	0.00	0.00
13,200.03	90.00	182.94	10,540.00	-2,861.17	-147.18	2,864.96	0.00	0.00	0.00
13,300.03	90.00	182.94	10,540.00	-2,961.04	-152.31	2,964.96	0.00	0.00	0.00
13,400.03	90.00	182.94	10,540.00	-3,060.91	-157.45	3,064.96	0.00	0.00	0.00
13,500.03	90.00	182.94	10,540.00	-3,160.78	-162.59	3,164.96	0.00	0.00	0.00
13,600.03	90.00	182.94	10,540.00	-3,260.65	-167.72	3,264.96	0.00	0.00	0.00
13,700.03	90.00	182.94	10,540.00	-3,360.51	-172.86	3,364.96	0.00	0.00	0.00
13,800.03	90.00	182.94	10,540.00	-3,460.38	-178.00	3,464.96	0.00	0.00	0.00
13,900.03	90.00	182.94	10,540.00	-3,560.25	-183.14	3,564.96	0.00	0.00	0.00
14,000.03	90.00	182.94	10,540.00	-3,660.12	-188.27	3,664.96	0.00	0.00	0.00
14,100.03	90.00	182.94	10,540.00	-3,759.99	-193.41	3,764.96	0.00	0.00	0.00
14,200.03	90.00	182.94	10,540.00	-3,859.85	-198.55	3,864.96	0.00	0.00	0.00
14,300.03	90.00	182.94	10,540.00	-3,959.72	-203.68	3,964.96	0.00	0.00	0.00
14,400.03	90.00	182.94	10,540.00	-4,059.59	-208.82	4,064.96	0.00	0.00	0.00
14,500.03	90.00	182.94	10,540.00	-4,159.46	-213.96	4,164.96	0.00	0.00	0.00
14,600.03	90.00	182.94	10,540.00	-4,259.33	-219.10	4,264.96	0.00	0.00	0.00
14,700.03	90.00	182.94	10,540.00	-4,359.20	-224.23	4,364.96	0.00	0.00	0.00
14,800.03	90.00	182.94	10,540.00	-4,459.06	-229.37	4,464.96	0.00	0.00	0.00
14,900.03	90.00	182.94	10,540.00	-4,558.93	-234.51	4,564.96	0.00	0.00	0.00
14,958.96	90.00	182.94	10,540.00	-4,617.78	-237.54	4,623.89	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site West Copperline 29 State Com #2H
Company:	Caza Operating, LLC.	**TVD Reference:**	WELL @ 3585.50ft
Project:	Lea County, NM	**MD Reference:**	WELL @ 3585.50ft
Site:	West Copperline 29 State Com #2H	**North Reference:**	Grid
Well:	West Copperline 29 State Com #2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Plan #1		

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)
TD at 14958.96 - PBHL[WC29#2H]									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL[WC29#2H] - plan hits target center - Point	0.00	0.00	10,540.00	-4,617.78	-237.54	462,631.12	757,918.46	32° 16' 8.870 N	103° 29' 56.023 W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
10,062.54	10,062.54	0.00	0.00	KOP Start Build 12.00
10,812.54	10,540.00	-476.83	-24.53	LP Start 4146.42 hold at 10812.54 MD
14,958.96	10,540.00	-4,617.78	-237.54	TD at 14958.96

Well name: **West Copperline 29 Fed State Com # 2H**

Operator: **Caza Operating, LLC**

String type: **Production Casing: Frac**

Design parameters:			**Minimum design factors:**		**Environment:**		
Collapse			**Collapse:**		H2S considered?	No	
Mud weight:	10.00	ppg	Design F	1.200	Surface temperature:	75.00	°F
Internal fluid density:	0.300	ppg			Bottom hole temperature:	159	°F
					Temperature gradient:	0.80	°F/100ft
					Minimum section length:	1,500	ft
			Burst:		Minimum Drift:	4.625	in
			Design F	1.20	Cement top:	4,500	ft
Burst							
Max anticipated surface pressure:	8,624.24	psi					
Internal gradient:	0.14	psi/ft	**Tension:**		Directional Info - Build & Hold		
Calculated BHP	10,080.18	psi	8 Rd STC:	1.80	(J) Kick-off point	10000	ft
Gas gravity:	0.60		8 Rd LTC:	1.80	(J) Departure at shoe:	4617	ft
Annular backup:	4.00	ppg	Buttress:	1.60	(J) Maximum dogleg:	12	°/100ft
			Premium:	1.50	(J) Inclination at shoe:	89.14	°
			Body yield:	1.60	(B)		

Tension is based on buoyed weight.
Neutral pt: 8,944.42 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)
1	14890	5.5	20.00	HCP-110	CDC-HTQ	10540	14890	4.653

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5311	12200	2.297	8631	12640	1.46	178.9	641.1	3.58 B

Date: February 14,2014

R. Wright

Midland, Texas

Remarks:

Collapse is based on a vertical depth of 10540 ft, a mud weight of 10 ppg An internal gradient of .016 psi/ft was used for collapse from TD to surface
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a tesile load which is added the the axial load.

Caza Petroleum

Copperline 29 State Com #2H "Cement Program" NW/NW_Section 29, T23S, R34E, Lea County, New Mexico.

Below is the well cement requirements for the West Copperline 29 Fed # 2H

1. **Surface hole depth = 1175 ft. TOC @surface** w/ 50% W/O
   Surface hole = 17.5 inch
   Surface casing = 13.375" 54.5# J-55 STC
   Float Collar 1 jts up.
   Hardware needed = 12 spring centralizers_(6) first 6 jts_6 every 3rd jt to surface
   1 Guide shoe "PDC drillable"
   1 float collar (1 jt Up) "PDC drillable"
   1 thread lock compound
   1 collar stop

   Engineering Data "Surface":
   1175 ft 17.5 inch hole x 13.375" csg = .6946 cuft/ft X 1175 X 1.75 excess = 1430 cu ft
   42 ft 13.375" 54.5 # casing volume= .8679 X 40 ft = 36 cu ft
   Total Cement volume required = 1466 cu ft.
   Lead slurry Coverage (933-surf) = 1172 cu ft "C" w/ 4% Gel, 2% CaCl2, 13.5 ppg yield 1.74 cu ft/sk = **(653 sks)_Compressive strength documented @ + 500 psi in 12 hrs.**
   Tail Slurry Coverage (1150-933) = 330 cu ft Class "C" w/ 2% CaCl2 14.8 ppg yield 1.32 cu ft / sk = **(250 sks)**

2. **Intermediate hole depth=5085 ft. TOC @Surface** w/ 1.75% W/O
   Intermediate hole = 12.25 inch
   Intermediate Casing = 9.625" 40#J-55 &40# HCK LTC
   Float Collar 1 jts up.
   Hardware needed = 12 spring centralizers (6) 1st 6 jts+ 6 space equally to lap
   1 Guide Shoe
   1 float collar (1 jt up)
   1 thread lock compound

Caza Petroleum

Engineering Data "Intermediate":
3935 ft 12.25 inch open hole x 9.625 csg = .3132 cuft/ft X 3935 X 1.75 excess = 2157 cu ft
800 ft 9.625 x 13.375" casing =.3626 cu ft/ft X 800 = 290 cu ft
42 ft 9.625"40 # casing volume= .4257 X 42 ft = 18 cu ft
Total Cement volume required = 2465 cu ft.
Lead Coverage (4604-surface)= 2003 cu ft 35:65 poz "C" w/ 5% salt & 6% gel 12.4 ppg yield 2.09 cu ft/sk = **(960 sks)**
Tail Slurry coverage(5085-4604) = 462 cu ft Class "C" w/ 1% CaCl2 14.8 ppg yield 1.32 cu ft / sk = **(350 sks)**

3. **Production Hole depth= 14,952 ft.** "10,540" TVD. **TOC @ 3800 ft** w/ 50% W/O Vertical Hole & Curve = 8.75inch to 10,800'.
Lateral = 10,800-14,952' MD.

Production Hole Casing = 5-1/2 inch 20# CDC-HTQ HCP-110
Hardware Needed = 24 spring Centralizers
47 Rigid Centralizers for Lateral. (1 every other Jt)
Float Collar (1 jt up)
Float Shoe
TOC calculated to 3800 ft w/ 50% Washout open hole

Engineering Data "Production":
1300 ft 9-5/8" 40# X 5-1/2" Csg= 1300' X .2607 cu ft / ft = **339 cu ft.**
9867 ft 8.75 inch open hole x 5-1/2"20 # casing = 9867' X .2526 x 1.5 excess = **3739 cu ft**
40 ft 5.5" 20# casing volume= .1305 X 40 ft = **5.2 cu ft**
Total Cement volume required = 4083 cu ft.
Lead Slurry (10800-3800')= 2510 cu ft 65/35 Poz/"H"mixed @12.6 ppg w/yield 1.93 cu ft/sk 1 lb/sk Kol Seal+ retarded for 6hr pump = **(1301 sks)**
Tail Slurry (14,952 TD-10,800 EOC')= 1573 cu ft "H" SoluCem mixed 15.0 ppg w/ yield of 2.61 cu ft/sk w/ fluid loss control + Defoamer "Acid soluble" for 6 hr pump time= **603 sks**

Volumes to be adjusted after log review and mud logger lag review post drilling

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Caza Operating, LLC.**
LEASE NO.:	**NMNM-92199**
WELL NAME & NO.:	**West Copperline 29 State Fed Com 2H**
SURFACE HOLE FOOTAGE:	**0330' FNL & 0660' FWL**
BOTTOM HOLE FOOTAGE	**0330' FSL & 0380' FWL**
LOCATION:	**Section 29, T. 23 S., R 34 E., NMPM**
COUNTY:	**Lea County, New Mexico**
API:	**30-025-41640**

Operator to submit new C-102 form with the BHL change.

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. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please 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. 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.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

Possible water flows in the Salado, Castile, Delaware, and Bone Spring.
Possible lost circulation in the Rustler, Delaware, and Bone Spring.
Abnormal pressures may be encountered within the 3rd Bone Spring and Wolfcamp formations.

1. The **13-3/8** inch surface casing shall be set at approximately **1175** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface. **Fresh water mud to be used to setting depth.**

    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.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

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

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

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

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

    ☒ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to 17% - 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. 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 **(Installing 5M testing to 3,000 psi)**.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

    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.

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