EOG RESOURCES, INC.
ORRTANNA 20 FED NO. 702H

1. GEOLOGIC NAME OF SURFACE FORMATION:
Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	783'
Top of Salt	1,138'
Base of Salt / Top Anhydrite	4,843'
Lamar	4,843'
Bell Canyon	4,883'
Cherry Canyon	5,763'
Brushy Canyon	7,573'
Bone Spring Lime	9,003'
1st Bone Spring Sand	10,000'
2nd Bone Spring Lime	10,360'
2nd Bone Spring Sand	10,520'
3rd Bone Spring Sand	11,650'
Wolfcamp	12,060'
TD	12,280'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	5,763'	Oil
Brushy Canyon	7,573'	Oil
1st Bone Spring Sand	10,000'	Oil
2nd Bone Spring Lime	10,360'	Oil
2nd Bone Spring Sand	10,520'	Oil
3rd Bone Spring Sand	11,650'	Oil
Wolfcamp	12,060'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 875' and circulating cement back to surface.

KZ

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0 – 875'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4,000' – 4.860'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0'-17,033'	5.5"	17#	HCP-110	BTC	1.125	1.25	1.60

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Mix Water Gal/sk	Slurry Description
13-3/8" 875'	600	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	300	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
9-5/8" 4,860'	1000	12.7	2.22	12.38	Lead: Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ surface)
	200	14.8	1.32	6.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
5-1/2" 17,033'	775	9.0	2.79	10.12	Lead: LiteCRETE + 0.10% D-065 + 0.20% D-046 + 0.40% D-167 + 0.20% D-198 + 0.04% D-208 + 2.0% D-174 (TOC @ 4,360')
	2100	14.4	1.28	5.69	Tail: Class H + 47.01 pps D-909 + 37.01 pps + 5.0% D-020 + 0.30% D-013 + 0.20% D-046 + 0.10% D-065 + 0.50% D-167 + 2.0% D-174

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

SEE COA

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 875'	Fresh - Gel	8.6-8.8	28-34	N/c
875' – 4,860'	Oil Base	8.7-9.4	58-68	N/c - 6
4,860' – 11,699'	Oil Base	8.7-9.4	58-68	N/c - 6
11,699' – 17,033' Lateral	Oil Base	10.0-10.5	58-68	N/c - 6

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H_2S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

SEE COA

Open-hole logs are not planned for this well.

GR–CCL Will be run in cased hole during completions phase of operations.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

SEE COA

The estimated bottom-hole temperature (BHT) at TD is 179 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 5317 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

SEE COA

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

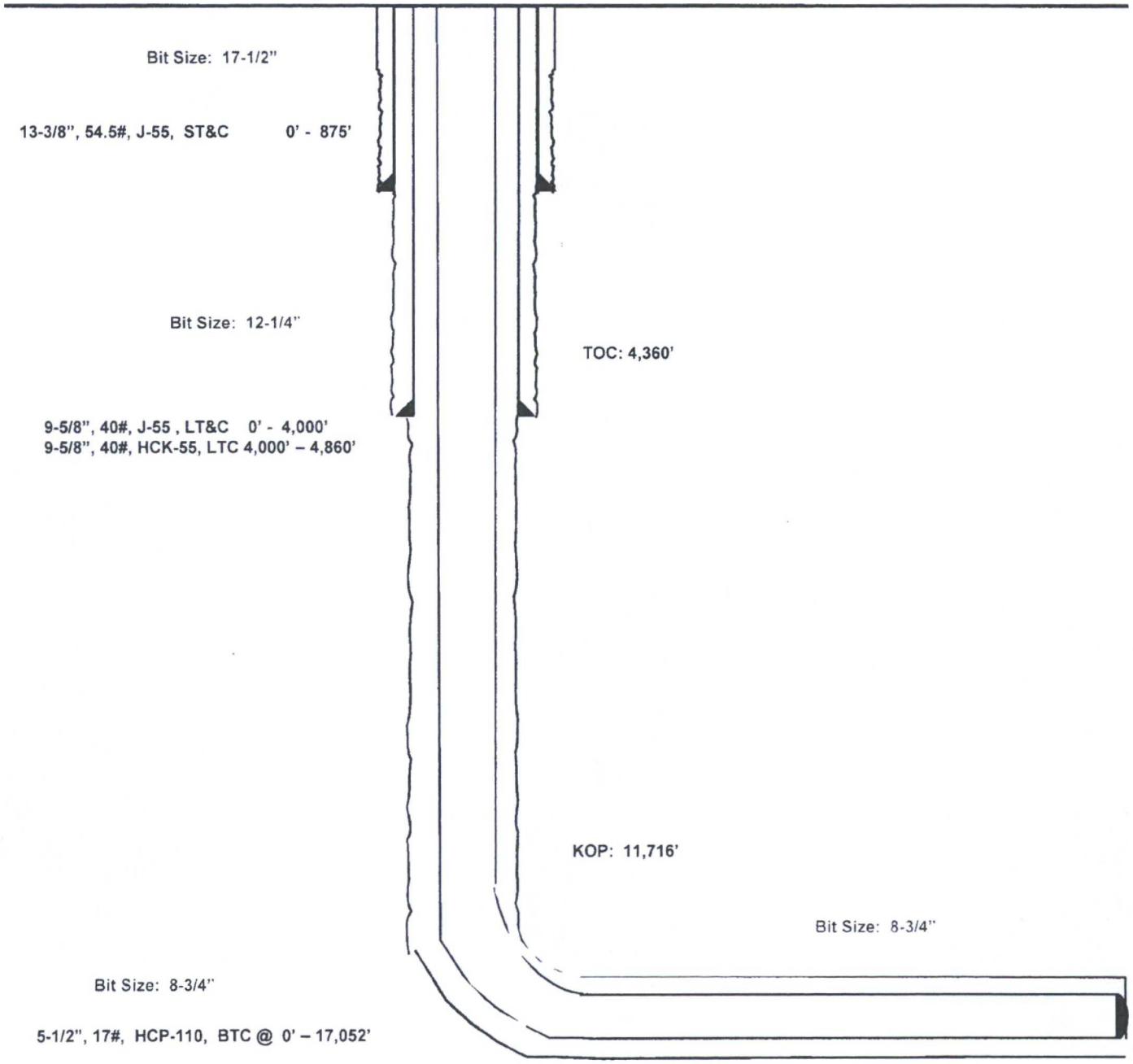
(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

Orrtanna 20 Fed #701H

220' FSL
950' FWL
Section 20
T-26-S, R-33-E

Lea County, New Mexico
Proposed Wellbore
Revised 11/18/15
API: 30-025-42936

KB: 3,248'
GL: 3,218'



Lateral: 17,052' MD, 12,280' TVD
Upper Most Perf:
330' FSL & 330' FWL Sec. 20
Lower Most Perf:
330' FNL & 330' FWL Sec. 20
BH Location: 230' FNL & 330' FWL
Section 20
T-26-S, R-33-E

eog resources

Lea County, NM (NAD 27 NME)

Orrtanna 20 Fed #701H

H&P 415

Plan #0.1

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Azimuths to Grid North
True North: -0.39°
Magnetic North: 6.69°

Magnetic Field
Strength: 47940.6snT
Dip Angle: 59.89°
Date: 4/1/2016
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.69°
To convert a Magnetic Direction to a True Direction, Add 7.08° East
To convert a True Direction to a Grid Direction, Subtract 0.39°

WELL DETAILS: #701H

Ground Level: 3218.0
KB = 25 @ 3243.0usft (H&P 415)

Northing	Easting	Latitude	Longitude
372591.00	727501.00	32° 1' 20.073 N	103° 35' 37.401 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		
3	1332.3	3.32	253.21	1332.1	-2.8	-9.2	1.00	253.21	-1.5		
4	11716.2	3.32	253.21	11698.6	-176.7	-585.4	0.00	0.00	-96.2		
5	12626.6	90.00	359.56	12280.0	395.9	-622.2	10.00	106.33	476.2		
6	17052.8	90.00	359.56	12280.0	4823.0	-656.0	0.00	0.00	4867.4	PBHL(Orrt 20 Fed #701H)	

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL(Orrt 20 Fed #701H)	12280.0	4823.0	-656.0	377414.00	726845.00
FTP(Orrt 20 Fed #701H)	12280.0	106.0	-620.0	372697.00	726881.00