Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

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.
NMNM~~118727~~ 122622

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.
ENDURANCE 36 STATE COM 704H

2. Name of Operator
EOG RESOURCES, INC.
Contact: STAN WAGNER
E-Mail: stan_wagner@eogresources.com

9. API Well No.
30-025-43015

3a. Address
P.O. BOX 2267
MIDLAND, TX 79702

3b. Phone No. (include area code)
Ph: 432-686-3689

10. Field and Pool, or Exploratory
WC-025 G-09 S263327G

HOBBS OCD

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 36 T26S R33E SWNW 360FSL 1020FWL

MAY 05 2016

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

RECEIVED

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 APD
	☐ 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.)

EOG Resources requests an amendment to our approved APD for this well to reflect a change in casing design. & change in BHL

New casing design details attached.

Change BHL from 230' FNL & 660' FWL TO: 230' FNL & ~~990~~ 992' FWL, 25-26S-33E.

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

Electronic Submission #336070 verified by the BLM Well Information System
For EOG RESOURCES, INC., sent to the Hobbs
Committed to AFMSS for processing by KENNETH RENNICK on 04/14/2016 ()

Name *(Printed/Typed)* STAN WAGNER — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 04/08/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Kenneth Rennick — Title Petroleum Engineer — Date 5/1/2016

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 Carlsbad Field 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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

KR

MAY 06 2016

Rennick, Kenneth <krennick@blm.gov>

Relevant for Endurance 36 State Com 704H

Sundry NOI - Casing Change - Thor 21 Fed Com 703H & 704H

Steve Munsell <Steve_Munsell@eogresources.com> Wed, Mar 30, 2016 at 9:27 AM
To: "Rennick, Kenneth" <krennick@blm.gov>, Stan Wagner <Stan_Wagner@eogresources.com>
Cc: Bruce Coit <Bruce_Coit@eogresources.com>

Kenneth,

We will resubmit and change the anticipated mud weight range to 10.0 to 11.5 ppg. Normally we drill these laterals with mud weights ranging from 9.5 to 11.5 ppg. Almost always we get it done with 10.5 ppg or less.

So the 11.5 ppg maximum anticipated MW keeps us below the 5000 psi shut in surface pressure scenario.

I'm very comfortable with this. All of our rigs are equipped with 10,000 psi BOPs and chokes. The only piece of equipment that is not rated for 10,000 psi is the annular BOP.

Also we have all rigs equipped with two sets of pipe rams and one set of blinds (single BOP, mud cross, dual BOP, annular).

Thanks for your help.

>>>Munsell

From: Rennick, Kenneth [mailto:krennick@blm.gov]
Sent: Wednesday, March 30, 2016 9:59 AM
To: Stan Wagner <Stan_Wagner@eogresources.com>
Cc: Bruce Coit <Bruce_Coit@eogresources.com>; Steve Munsell <Steve_Munsell@eogresources.com>
Subject: Re: Sundry NOI - Casing Change - Thor 21 Fed Com 703H & 704H

** External email. Use caution.**

Hello Gentlemen,

[Quoted text hidden]
[Quoted text hidden]

EOG RESOURCES, INC.
ENDURANCE 36 STATE COM NO. 704H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	830'
Top of Salt	1,200'
Base of Salt / Top Anhydrite	4,950'
Base Anhydrite	5,178'
Lamar	5,178'
Bell Canyon	5,206'
Cherry Canyon	6,240'
Brushy Canyon	7,940'
Bone Spring Lime	9,410'
1st Bone Spring Sand	10,200'
2nd Bone Spring Lime	10,460'
2nd Bone Spring Sand	10,900'
3rd Bone Spring Carb	11,420'
3rd Bone Spring Sand	12,020'
Wolfcamp	12,400'
TD	12,680'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,240'	Oil
Brushy Canyon	7,940'	Oil
1st Bone Spring Sand	10,200'	Oil
2nd Bone Spring Lime	10,460'	Oil
2nd Bone Spring Sand	10,900'	Oil
3rd Bone Spring Carb	11,420'	Oil
3rd Bone Spring Sand	12,020'	Oil
Wolfcamp	12,400'	Oil

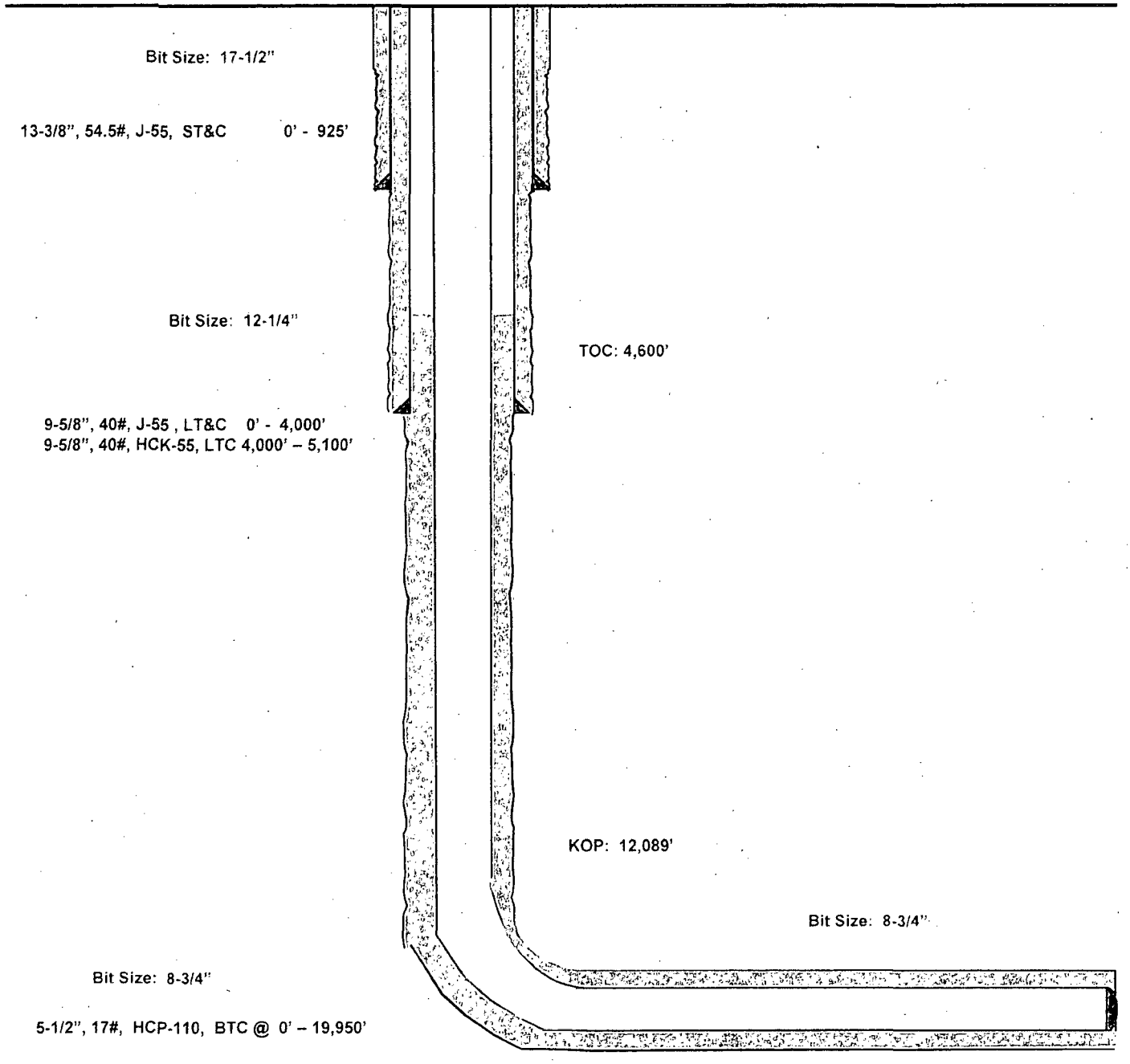
No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 925' and circulating cement back to surface.

Endurance 36 State Com #704H

360' FSL
1020' FWL
Section 36
T-26-S, R-33-E

Lea County, New Mexico
Proposed Wellbore
Revised 2/29/16
API: 30-025-43015

KB: 3,364'
GL: 3,334'



Lateral: 19,950' MD, 12,680' TVD
Upper Most Perf:
330' FSL & 992' FWL Sec. 36
Lower Most Perf:
330' FNL & 992' FWL Sec. 25
BH Location: 230' FNL & 992' FWL
Section 25
T-26-S, R-33-E

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
14.75"	0 – 925'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0-8,000'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
8.75"	8,000' – 11,000'	7.625"	29.7#	HCP-110	Ultra FJ	1.125	1.25	1.60
6.75"	0'-19,950'	5.5"	23#	HCP-110	ULT SFII	1.125	1.25	1.60

SEE COA

Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation. Centralizers will be placed in the 9-7/8" hole interval at least one every third joint.

SEE COA

Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Mix Water Gal/sk	Slurry Description
10-3/4" 925	325	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)
	200	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
7-5/8" 11,000'	750	9.0	2.50	9.06	Class C + 0.6% ASM-3 + 0.15% CDF-4P + 0.6% LTR + 0.5% SCA-6 + 0.13 pps LCL-11 + 0.13 pps LDP-c-0215
	500	12.5	1.71	9.06	Class C + 0.6% LTR + 0.5% SCA-6 + 0.6% ASM-3 + 0.15% CDF-4P + 0.13% LCL-11 + 0.13% LCF-7
	250	15.6	1.19	5.20	Class H + 0.2% ASM-3 + 0.3% SCA-6 + 0.65% LTR + 0.3% SPC-2
5-1/2" 19,950'	725	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17

SEE COA LOW CEMENT

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 #8 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 – 925'	Fresh - Gel	8.6-8.8	28-34	N/c
925' – 11,000'	Brine	8.8-10.0	28-34	N/c
11,000' – 19,950' Lateral	Oil Base	10.0-11.5	58-68	3 - 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 182 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 7582 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. Severe loss circulation is expected from 7,300' to Intermediate casing point.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

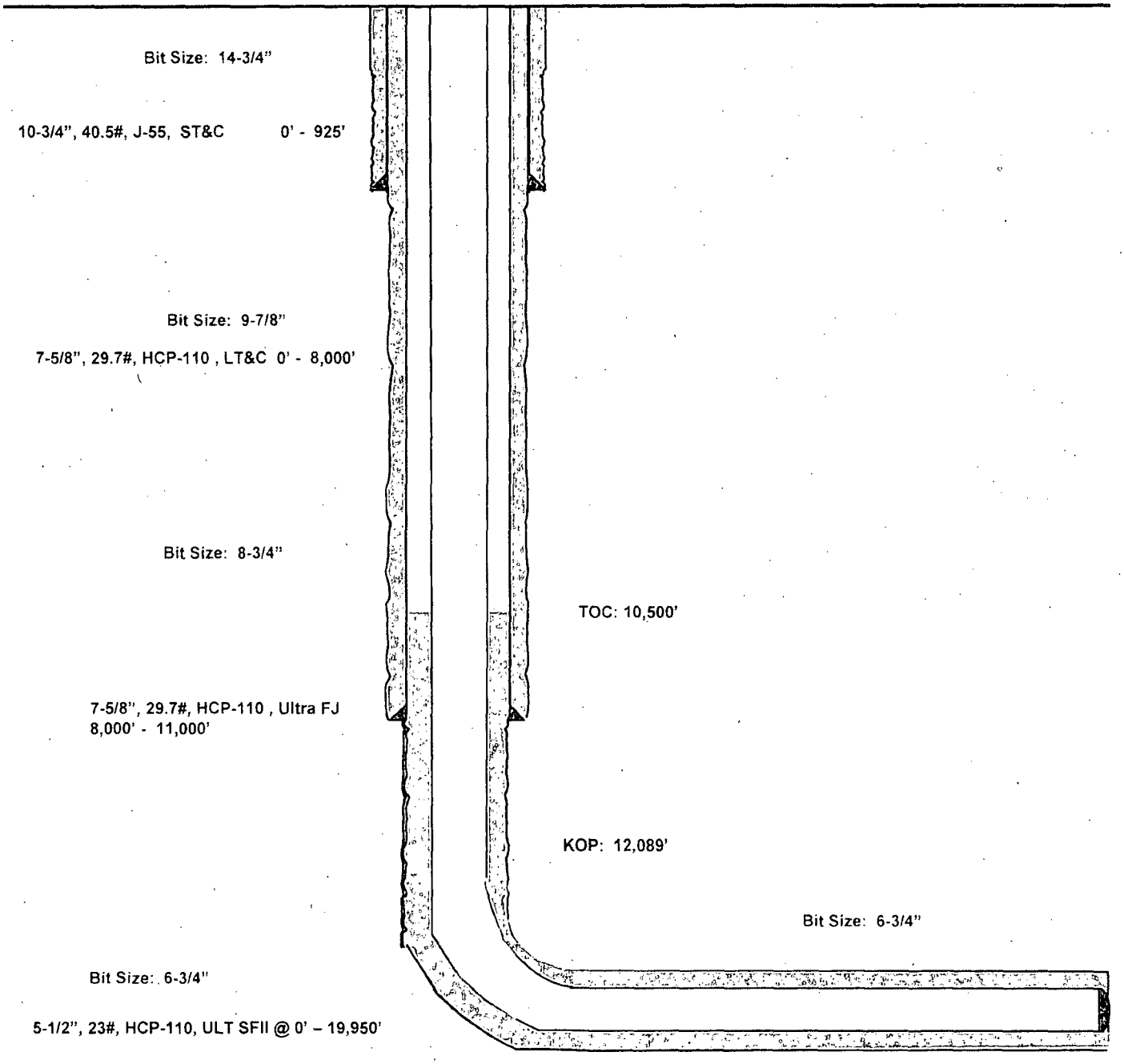
The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

Endurance 36 State Com #704H

360' FSL
1020' FWL
Section 36
T-26-S, R-33-E

Lea County, New Mexico
Proposed Wellbore
Revised 4/6/16
API: 30-025-43015

KB: 3,364'
GL: 3,334'



Lateral: 19,950' MD, 12,680' TVD
Upper Most Perf:
330' FSL & 992' FWL Sec. 36
Lower Most Perf:
330' FNL & 992' FWL Sec. 25
BH Location: 230' FNL & 992' FWL
Section 25
T-26-S, R-33-E

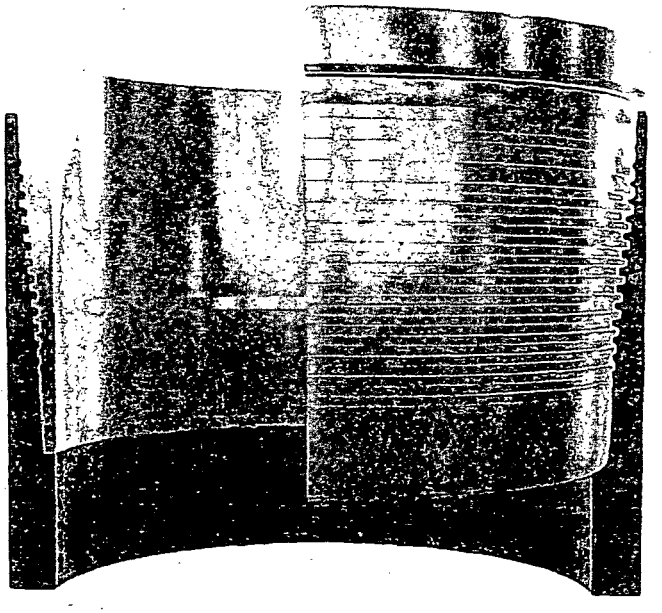
PERFORMANCE DATA

TMK UP ULTRA™ FJ **7.625 in** **29.70 lbs/ft** **P110 HC - EVRAZ**
Technical Data Sheet

Tubular Parameters					
Size	7.625	in	Minimum Yield	110,000	psi
Nominal Weight	29.70	lbs/ft	Minimum Tensile	125,000	psi
Grade	10 HC - EVRAZ		Yield Load	939,000	lbs
PE Weight	29.04	lbs/ft	Tensile Load	1,067,000	lbs
Wall Thickness	0.375	in	Min. Internal Yield Pressure	9,420	psi
Nominal ID	6.875	in	Collapse Pressure	7,610	psi
Drift Diameter	6.750	in			
Nom. Pipe Body Area	8.541	in²			

Connection Parameters		
Connection OD	7.625	in
Connection ID	6.881	in
Make-Up Loss	4.022	in
Critical Section Area	5.316	in²
Tension Efficiency	62.2	%
Compression Efficiency	62.2	%
Yield Load In Tension	584,000	lbs
Min. Internal Yield Pressure	9,470	psi
Collapse Pressure	7,610	psi
Uniaxial Bending	41	°/ 100 ft

Make-Up Torques		
Min. Make-Up Torque	17,700	ft-lbs
Opt. Make-Up Torque	19,700	ft-lbs
Max. Make-Up Torque	21,700	ft-lbs
Yield Torque	31,500	ft-lbs



PREMIUM CONNECTIONS PERFORMANCE DATA

Size 5.500 **NomWt** 23.0 **Grade** P-110 HC

TMK UP ULTRA™ SFII

5.500in 23.0lbs/ft P-110 HC

Technical Data Sheet

Tubular Parameters

Size	5.500	in
Nominal Weight	23.0	lbs/ft
Grade	P-110 HC	
PE Weight	22.54	lbs/ft
Wall Thickness	0.415	in
Nominal ID	4.670	in
Drift Diameter	4.545	in
Nom. Pipe Body Area	6.630	in²

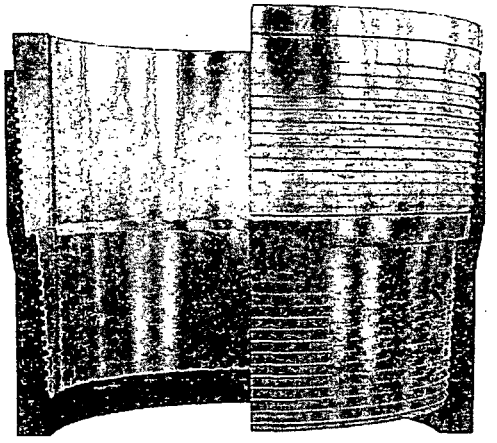
Minimum Yield	110,000	psi
Minimum Tensile	125,000	psi
Yield Load	729,000	lbs
Tensile Load	828,000	lbs
Min. Internal Yield Pressure	14,500	psi
Collapse Pressure	15,110	psi

Connection Parameters

Connection OD	5.726	in
Connection ID	4.626	in
Make - Up Loss	5.653	in
Critical Section Area	5.817	in²
Efficiency - Tension	85%	%
Efficiency - Compression	73%	%
Yield Load In Tension	621,000	lbs
Min. Internal Yield Pressure	14,500	psi
Collapse Pressure	15,110	psi
Uniaxial Bending	78	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	15,500	ft-lbs
Optimum Make-Up Torque	16,300	ft-lbs
Max. Make-Up Torque	18,700	ft-lbs
Yield Torque	24,600	ft-lbs



TMK

eog resources

Lea County, NM (NAD 27 NME)

Endurance 36 State Com #704H

Plan #2

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: -0.42°
Magnetic North: 6.71°

Magnetic Field
Strength: 48013.9snT
Dip Angle: 59.89°
Date: 6/23/2015
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.71°
To convert a Magnetic Direction to a True Direction, Add 7.13° East
To convert a True Direction to a Grid Direction, Subtract 0.43°

WELL DETAILS #704H

Ground Level: 3335.0
KB = 25 @ 3360.0usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slo
0.0	0.0	365060.00	748788.00	32° 0' 4.052 N	103° 31' 51.061 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0	
3	4736.8	2.37	184.45	4736.7	-4.9	-0.4	1.00	184.45	-4.9	
4	12089.8	2.37	184.45	12083.5	-307.8	-24.0	0.00	0.00	-307.5	
5	13013.4	90.00	359.60	12680.0	264.7	-30.1	10.00	175.14	265.0	
6	19950.9	90.00	359.60	12680.0	7202.0	-79.0	0.00	0.00	7202.4	PBHL(END 26 ST Com #704H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
FTP(END 26 ST Com #704H)	12680.0	-30.0	-28.0	365030.00	748738.00	Point
PBHL(END 26 ST Com #704H)	12680.0	7202.0	-79.0	372262.00	748687.00	Point