

300' FNL
2317' FWL
Section 2
T-26-S, R-30-E

Quail 2 State Com #723H
Eddy County, New Mexico

KB: 3,588'
GL: 3,217'

Proposed Wellbore
Design A

API: 30-025-*****
15-45793

Bit Size: 12-1/4"
9-5/8", 40#, J-55, LTC 0' - 1,255'

Bit Size: 8-3/4"
7-5/8", 29.7#, HCP-110, FXL @ 0' - 10,092'

TOC: 9,592'

KOP: 10,897'

Bit Size: 6-3/4"
5-1/2", 17#, HCP-110, LTC @ 0' - 16,210'

Bit Size: 6-3/4"

Lateral: 16,210' MD, 11,351' TVD
BH Location: 230' FSL & 2610' FEL
Section 2
T-26-S, R-30-E

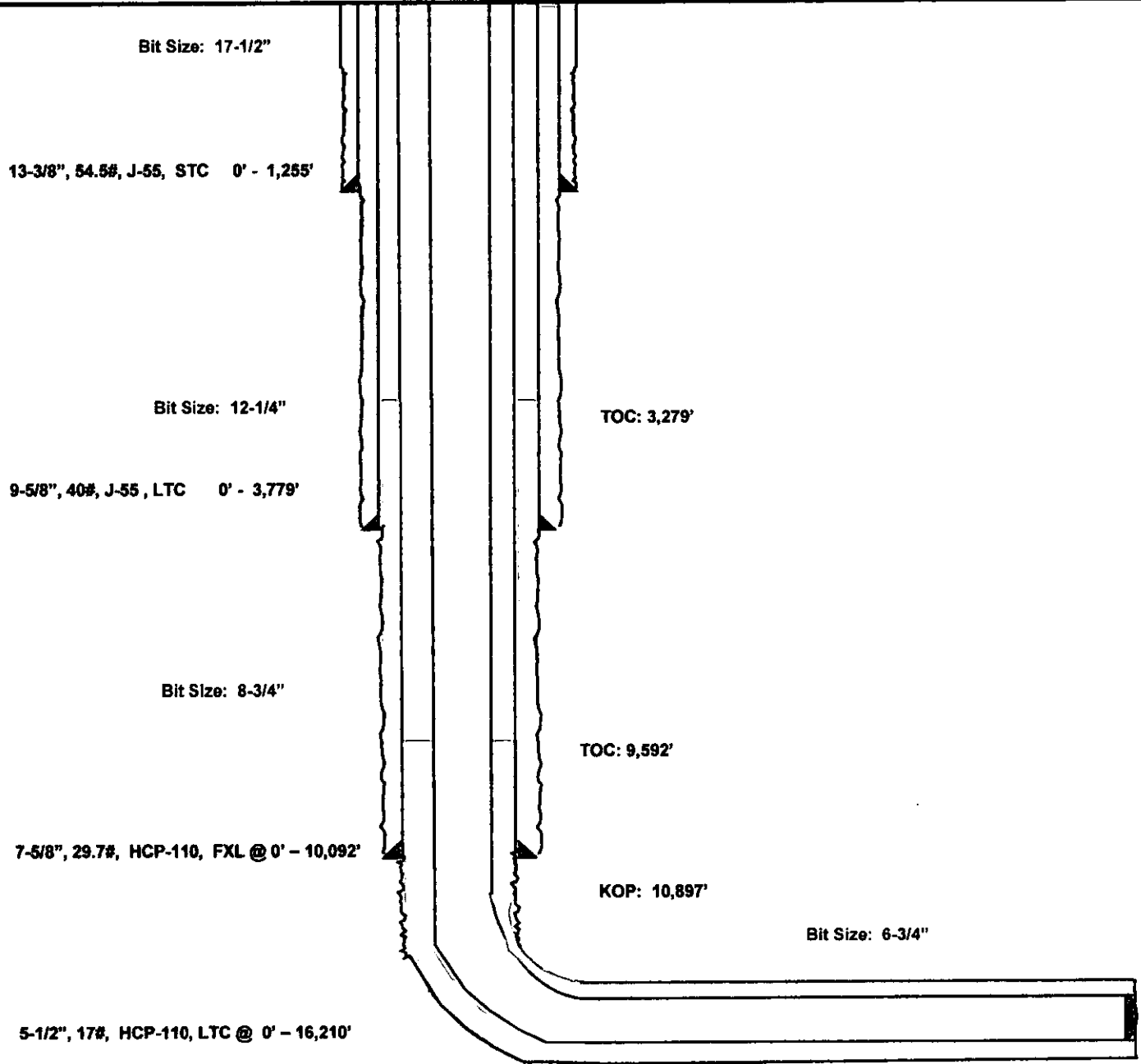
300' FNL
2317' FWL
Section 2
T-26-S, R-30-E

EOG RESOURCES, INC.
Quail 2 State Com #723H

KB: 3,588'
GL: 3,217'

Proposed Wellbore
Design B

API: 30-025-*****



Lateral: 16,210' MD, 11,351' TVD
BH Location: 230' FSL & 2610' FEL
Section 2
T-26-S, R-30-E

Permit Information:

EOG RESOURCES, INC.
Quail 2 State Com #723H

Well Name: Quail 2 State Com No. 701H

Location:

SHL: 300' FNL & 2317' FWL, Section 2, T-26-S, R-30-E, Eddy Co., N.M.
 BHL: 230' FSL & 2610' FEL, Section 2, T-26-S, R-30-E, Eddy Co., N.M.

Design A

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
12.25"	0 - 1,255'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
8.75"	0' - 10,092'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0'-16,210'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /sk	Slurry Description
1,255'	547	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	160	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
10,092'	600	14.2	1.11	1 st Stage (Tail): Class C + 5% Salt + (TOC @ 7,000')
	1,000	12.7	2.30	2 nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
16,210'	530	14.2	1.31	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 9,592')

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 1,255'	Fresh - Gel	8.6-8.8	28-34	N/c
1,255' - 10,092'	Brine	8.8-10.0	28-34	N/c
10,092' - 10,897'	Oil Base	10.0-11.5	58-68	3 - 6
10,897' - 16,210' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

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Design B

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 – 1,255'	13.375"	54.5#	J-55	STC	1.125	1.25	1.60
12.25"	0-3,779'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
12.25"	3,779' – 4,895'	9.625"	40#	HCL-80	LTC	1.125	1.25	1.60
8.75"	0 – 10,092'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0'-16,210'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /sk	Slurry Description
1,255'	547	13.5	1.74	Lead: Class 'C' + 4.00% Bentonite + 2.00% CaCl ₂ (TOC @ Surface)
	159.8	14.8	1.35	Tail: Class 'C' + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate + 2.0% KCl (1.06 lb/sk)
4,895'	341	12.7	2.22	Lead: Class C + 0.15% C-20 + 11.63 pps Salt + 0.1% C-51 + 0.75% C-41P (TOC @ Surface)
	288	14.8	1.32	Tail: Class C + 0.13% C-20
10,092'	276	10.8	3.67	Lead: Class C + 0.40% D013 + 0.20% D046 + 0.10% D065 + 0.20% D167 (TOC @ 3,279')
	152	14.8	2.38	Tail: Class H + 94.0 pps D909 + 0.25% D065 + 0.30% D167 + 0.02% D208 + 0.15% D800
16,210'	530	14.8	1.31	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 9,592')

As a contingency, EOG requests to pump a two stage cement job on the 7-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (6,076') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of 1,000 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed.

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,255'	Fresh - Gel	8.6-8.8	28-34	N/c
1,255' – 4,895'	Brine	10.0-10.2	28-34	N/c
4,895' – 10,092'	Oil Base	8.7-9.4	58-68	N/c - 6
10,092' – 16,210' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

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Hydrogen Sulfide Plan Summary

- A. All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:
- Well control equipment
 - a. Flare line 150' from wellhead to be ignited by flare gun.
 - b. Choke manifold with a remotely operated choke.
 - c. Mud/gas separator
 - Protective equipment for essential personnel.
 - Breathing apparatus:
 - a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
 - c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.
 - Auxiliary Rescue Equipment:
 - a. Stretcher
 - b. Two OSHA full body harness
 - c. 100 ft 5/8 inch OSHA approved rope
 - d. 1-20# class ABC fire extinguisher
 - H₂S detection and monitoring equipment:
 - The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
 - (Gas sample tubes will be stored in the safety trailer)
 - Visual warning systems.
 - a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.

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- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.

■ **Mud program:**

The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.

■ **Metallurgy:**

All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.

■ **Communication:**

Communication will be via cell phones and land lines where available.

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Emergency Assistance Telephone List

<u>PUBLIC SAFETY:</u>	911 or
Lea County Sheriff's Department	(575) 396-3611
Rod Coffman	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174
EOG Resources, Inc.	
EOG / Midland	Office (432) 686-3600
<u>Company Drilling Consultants:</u>	
David Dominique	Cell (985) 518-5839
Mike Vann	Cell (817) 980-5507
<u>Drilling Engineer</u>	
Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256
<u>Drilling Manager</u>	
Aj Dach	Office (432) 686-3751
	Cell (817) 480-1167
<u>Drilling Superintendent</u>	
Domingo Lopez	Office (432) 686-3702
	Cell (432) 215-9452
<u>H&P Drilling</u>	
H&P Drilling	Office (432) 563-5757
H&P 651 Drilling Rig	Rig (903) 509-7131
<u>Tool Pusher:</u>	
Johnathan Craig	Cell (817) 760-6374

EOG RESOURCES, INC.
Quail 2 State Com #723H

Brad Garrett

Safety

Brian Chandler (HSE Manager)

Office (432) 686-3695

Cell (817) 239-0251