

EOG RESOURCES, INC.
Hemlock 32 State #703H

Revised Permit Information 3/12/19:

Well Name: Hemlock 32 State No. 703H

Location:

SHL: 332' FSL & 1801' FWL, Section 32, T-23-S, R-33-E, Lea Co., N.M.

BHL: 100' FNL & 1580' FWL, Section 32, T-23-S, R-33-E, Lea 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 - 1,260'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
8.75"	0' - 11,529'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0'-17,491'	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
1,260'	400	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)
	300	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
11,529'	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)
17,491'	800	14.2	1.31	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 11,029')

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 1,260'	Fresh - Gel	8.6-8.8	28-34	N/c
1,260' - 11,529'	Brine	8.8-10.0	28-34	N/c
11,529' - 12,088'	Oil Base	10.0-11.5	58-68	3 - 6
12,088' - 17,491' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

332' FSL
1801' FWL
Section 32
T-23-S, R-33-E

Hemlock 32 State #703H
Lea County, New Mexico

KB: 3,690'
GL: 3,665'

Revised Wellbore 3/12/19
Design A

API: 30-025-45523

Bit Size: 12-1/4"
9-5/8", 40#, J-55, STC 0' - 1,260'

Bit Size: 8-3/4"
7-5/8", 29.7#, HCP-110, FXL @ 0' - 11,529'

Bit Size: 6-3/4"
6-1/2", 17#, HCP-110, LTC @ 0' - 17,491'

TOC: 11,029'

KOP: 12,088'

Bit Size: 6-3/4"

Lateral: 17,491' MD, 12,558' TVD
BH Location: 100' FNL & 1580' FWL
Section 32
T-23-S, R-33-E

EOG RESOURCES, INC.
Hemlock 32 State #703H

Design B

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 - 1,260'	13.375"	54.5#	J-55	STC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
12.25"	4,000' - 4,930'	9.625"	40#	HCL-80	LTC	1.125	1.25	1.60
8.75"	0 - 11,529'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0'-17,491'	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
1,260'	697	13.5	1.74	Lead: Class 'C' + 4.00% Bentonite + 2.00% CaCl ₂ (TOC @ Surface)
	333	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)
4,930'	692	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)
	303	14.8	1.32	Tail: Class C + 0.13% C-20
11,529'	375	10.8	3.67	Lead: Class C + 0.40% D013 + 0.20% D046 + 0.10% D065 + 0.20% D167 (TOC @ 4,430')
	400	14.8	2.38	Tail: Class H + 94.0 pps D909 + 0.25% D065 + 0.30% D167 + 0.02% D208 + 0.15% D800
17,491'	950	14.8	1.31	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10,029')

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 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 - 1,260'	Fresh - Gel	8.6-8.8	28-34	N/c
1,260' - 4,930'	Brine	10.0-10.2	28-34	N/c
4,930' - 11,090'	Oil Base	8.7-9.4	58-68	N/c - 6
11,090' - 17,491' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

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Revised Wellbore 3/12/19
Design B

API: 30-025-45523

