

# REVISED CASING & CEMENTING PLAN

## HIGHLANDS 14 FEDERAL #1 Y

Unit F , Sec. 14 - T19S - R21E , Eddy County, NM

API # 30-015-32236

Lease # NM-103570

KUKUI Operating Company

This casing and cementing program will replace the approved program submitted for the Highlands 14 Federal #1. Drilling conditions warrant an additional string of casing to isolate an unconsolidated limestone formation @ approximately 200 ft.

### Casing Program:

	Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade
Conductor	26"	0 - 40'	20"	NA	NA	NA	structural
Surface	17 1/2"	0 - 350'	13 3/8"	48.0 #/ft.	8 rd.	STC	H-40
Short Inter.	12 1/4"	0 - 1,360'	9 5/8"	36.0 #/ft.	8 rd.	STC	J-55
Production	8 3/4"	0 - 7,950'	5 1/2"	17.0 #/ft.	8 rd.	LTC	N-80

### Cementing Program:

<b>Conductor</b>	Set 40' of 20" conductor pipe and cement to surface with ready-mix cement.
<b>Surface</b>	Set 350' of 13 3/8", 48.0 lbs./ft., H-40, STC casing. Cement to surface with 400 sks. Class C 50:50 Poz + 2% CaCl <sub>2</sub> mixed @ 14.1 ppg / 1.26 cu.ft./sk. Top-out as required.
<b>Short Intermediate</b>	Set 1,360' of 9 5/8", 36.0 lbs./ft., J-55, STC casing. Cement to surface with 400 sks. Class C Light + 2% CaCl <sub>2</sub> + 1/4 pps cellophane flakes mixed @ 12.7 ppg / 1.84 cu. ft. / sk. and tail with 200 sks. Class C + 2% CaCl <sub>2</sub> mixed @ 15.6 ppg / 1.18 cu.ft./sk.

#### \*Alternate Cementing Program ( Loss Circulation over interval )

\* Cement to surface with 400 sks. Class C Foam Cement + 1% CaCl<sub>2</sub> mixed @ ~ 9.0 ppg / 2.4 cu.ft./sk. and tail with 200 sks. Class C + 1% CaCl<sub>2</sub>. If cement does not circulate to surface; pump additional 200 cu. ft. foam cement down 9 5/8" x 13 3/8" annulus and cap with 50 sks. Class C.

<b>Production</b>	Set 7,950' of 5 1/2", 17.0 lbs./ft., N-80, LTC casing. Cement with approximately 500 sks. Class C 50:50 Poz + additives mixed @ 14.1 ppg / 1.26 cu. ft./sk. Top of cement to be at least 500 ft. above upper most productive interval.
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