

# Coachman Energy Operating, LLC.

## PRELIMINARY DRILLING, GEOLOGICAL & DIRECTIONAL PROGNOSIS

PROSPECT:	Kokopelli		Lease #	COC 66370 Field #: 47525	
			FIELD:	Kokopelli	
WELL NAME:	Federal 14-15-7-21		DATE:	12/11/2014	DRAFT
			API #:	05-045-22460-00	
SURFACE LOCATION:	SWNE (2345' FNL x 713'FEL) Sec. 21-T6S- R91W Garfield County, Colorado				
SPACING UNIT & TYPE:	40 acre spacing		AFE #:	EK21B010	
WELL PAD:	FEDERAL 21B Pad				
ELEVATION:	KB: 6955	GL: 6932	finish, graded GL	Orig. GL: 6933'	
ESTIMATED TD ( MD & TVD):	13,550 'MD , 13,521' TVD (Revised)				
FORMATION AT TD:	Dakota		OBJECTIVE FORMATION:	Mancos	
DRILLING CONTRACTOR:	Frontier Drilling Rig # 28				
DRILLING PROGRAM  Note: Fresh water mud on Surface Water Base LSND mud for Prod. hole	Casing Program				
		Hole Size	Casing size	Depth	Comments
	Surface Casing	13.50"	9-5/8" 36# J-55 STC	1500'	cement to surface, 410 sxs.
	Intermediate Casing	8.750"	7.0" 26# HCP-110 LTxC	8966'	cement designed to 1000'.
	Production Casing	6.00"	4.50" 13.50# HCP-110 LTC	13,550'	560 sxs. TOC at 4000'
	Tieback/Frac String	N/A	N/A		

## FORMATION TOPS

FORMATION	DRILL DEPTH (est.)		DATUM (est.)	COMMENTS
	MD	TVD	6955	
Wasatch	0	0	surface	
Top of MV -Williams Fork	4,404	4,375	2,580	
Top of Gas	4,479	4,450	2,505	Have well back to vertical by 4000' TVD
Cameo	7,559	7,530	-575	
Rollins	7,770	7,741	-786	
Cozzette	8,348	8,319	-1,364	
Corcoran	8,531	8,502	-1,547	
7" Intermediate Casing Point	8,979	8,950	-1,995	Land 7" approx. 8940-8979' MD
Mancos	9,009	8,980	-2,025	
Niobrara	12,159	12,130	-5,175	
Frontier	13,279	13,250	-6,295	
Dakota	13,550	13,521	-6,566	
Total Depth	13,550	13,521	-6,566	Design TOC on Prod. Csg = 4000'

## LOGGING PROGRAM

OPEN HOLE LOGS:	Run #1- at ICP - Density/Neutron/HDIL/ GR and Full Wave Sonic. One run if possible Run #2 - At TD - Density/Neutron/ HDIL/ GR and Full Wave Sonic. Plus STAR (FMI) log.
LOGGING COMPANY:	<b>Baker Hughes - Grand Junction, CO 970-263-7453</b>

MUD LOGGER:	<b>Precision Well Site Consulting, Inc. 970-640-3741</b>
WELLSITE GEO. CONSULTANT:	John Hicks
SAMPLES:	As customary in area, 30' samples from the Williams Fork thru Rollins.

	<b>DIRECTIONAL INFORMATION</b>
BHL:	1969' FNL x 670' FEL, Section 21-T6S- R91W
Vertical Section	379' at N 7 E direction.
KOP/ Max Angle:	800 feet & 10 (+/-) degrees Have well back to Vertical by approx. 4500' TVD
GPS Coordinates:	39.514404 N Lat & 107.552396W Long. ( NAD 83) -Surface Location

## OFFSET & CONTROL WELLS

	WELL NAME	LOCATION
	Federal 21A wells ( 5 wells) & Federal 14/15-1-21 thru Fed 14/15-6-21 (on same pad)	
ANTICIPATED COMPLETION:	Conventional perforate and frac 4-7 prospective Mancos/ MV gas zones.	
PLANNED MUD & FLUID SYSTEMS:	Surface Hole must be drilled with Fresh Water mud system. Drill Production hole with Water based LSND mud system, be prepared for Lost Circulation 2000' to TD Closed mud system with no pit, must be utilized.	



### Cementing Design & Plan:

Surface Csg:	20% Excess assumption used, 250 sxs 12.30 ppg Lead cement, 2.38 ft3/sx yield, followed by 160 sxs 12.8 ppg Tail cement 2.11 ft3/sx yield.
Int. Casing:	See Halliburton proposal, 3 slurry system
Production Csg:	15% Excess assumption used, Thermacem GJ1 System on Production Cement ThermaCem: approx. 560 sxs, 13.50 ppg cement, 1.75 ft3/sx yield, 8.24 gal water / sx Adjust Cement volumes to Log Caliper Calculations, If Logs Run. If not, assume 15% on gauge hole.