

Results of Directional Survey

API number:	30-025-39110		
OGRID:		Operator:	COG OPERATING LLC
		Property:	GC FEDERAL # 14

surface	ULSTR:	O	19	T	17S	R	32E
			735	FSL	2222	FEL	

BH Loc	ULSTR:	N	19	T	17S	R	32E
			975	FSL	3014	FEL	

Top Perf/OH	ULSTR:	N	19	T	17S	R	32E
		5346	927	FSL	2879	FEL	

Bot Perf/OH	ULSTR:	N	19	T	17S	R	32E
		6780	970	FSL	2997	FEL	

	MD	N/S	E/W	VD
	5285	189.28	-649.19	5194.79
TOP PERFS/OH	5346	192.18	-656.54	5255.28
	5380	193.79	-660.63	5288.99
	6712	233.94	-770.00	6615.84
BOT PERFS/OH	6780	235.24	-774.80	6683.65
	6807	235.75	-776.70	6710.58

NEXT TO LAST	6903	237.62	-783.18	6806.34
LAST READING	6978	238.91	-788.31	6881.16
TD	7025	239.72	-791.52	6928.05

Surface Location	735	FS	2222	FE
Projected BHL	975	FS	3014	FE
Location of				
Top Perfs/OH	927	FS	2879	FE
Bottom Perfs/OH	970	FS	2997	FE

SUMMARY of Subsurface Locations

Surface Location	O-19-17S-32E	735	FS	2222	FE	Vert Depth
Top Perfs/OH	N-19-17S-32E	927	FS	2879	FE	5255.28
Bottom Perfs/OH	N-19-17S-32E	970	FS	2997	FE	6683.65
Projected TD	N-19-17S-32E	975	FS	3014	FE	6928.05