

Results of Directional Survey

API number:	30-025-39265		
OGRID:		Operator:	COG OPERATING LLC
		Property:	GC FEDERAL # 29

surface	ULSTR:	O	20	T 17S	R 32E
			745	FSL	1330 FEL

BH Loc	ULSTR:	P	20	T 17S	R 32E
			987	FSL	983 FEL

Top Perf/OH	ULSTR:	P	20	T 17S	R 32E
	6070		982	FSL	986 FEL

Bot Perf/OH	ULSTR:	P	20	T 17S	R 32E
	6810		986	FSL	984 FEL

	MD	N/S	E/W	VD
	5416	234.36	342.07	5389.1
TOP PERFS/OH	6070	237.36	343.84	6043.10
	5464	234.58	342.20	5437.10
	5416	234.36	342.07	5389.1
BOT PERFS/OH	6810	240.75	345.85	6783.10
	5464	234.58	342.20	5437.10

NEXT TO LAST	5416	234.36	342.07	5389.1
LAST READING	5464	234.58	342.20	5437.10
TD	7114	242.14	346.67	7087.10

Surface Location	745	FS	1330	FE
Projected BHL	987	FS	983	FE
Location of				
Top Perfs/OH	982	FS	986	FE
Bottom Perfs/OH	986	FS	984	FE

SUMMARY of Subsurface Locations

Surface Location	O-20-17S-32E	745	FS	1330	FE	Vert. Depth
Top Perfs/OH	P-20-17S-32E	982	FS	986	FE	6043.10
Bottom Perfs/OH	P-20-17S-32E	986	FS	984	FE	6783.10
Projected TD	P-20-17S-32E	987	FS	983	FE	7087.10