

Results of Directional Survey

API number:	30-025-39270		
OGRID:		Operator:	COG OPERATING LLC
		Property:	GC FEDERAL # 32

surface	ULSTR:	O	20	T	17S	R	32E
			485	FSL	2065	FEL	

BH Loc	ULSTR:	O	20	T	17S	R	32E
			386	FSL	1667	FEL	

Top Perf/OH	ULSTR:	O	20	T	17S	R	32E
		5424	387	FSL	1697	FEL	

Bot Perf/OH	ULSTR:	O	20	T	17S	R	32E
		5530	387	FSL	1695	FEL	

	MD	N/S	E/W	VD
	5358	-98.26	367.15	5336.07
TOP PERFS/OH	5424	-98.30	368.29	5402.06
	5419	-98.30	368.20	5397.06
	5358	-98.26	367.15	5336.07
BOT PERFS/OH	5530	-98.37	370.11	5508.04
	5419	-98.30	368.20	5397.06

NEXT TO LAST	5358	-98.26	367.15	5336.07
LAST READING	5419	-98.30	368.20	5397.06
TD	7136	-99.43	397.75	7113.78

Surface Location	485	FS	2065	FE
Projected BHL	386	FS	1667	FE
Location of				
Top Perfs/OH	387	FS	1697	FE
Bottom Perfs/OH	387	FS	1695	FE

SUMMARY of Subsurface Locations

Surface Location	O-20-17S-32E	485	FS	2065	FE	Vert. Depth
Top Perfs/OH	O-20-17S-32E	387	FS	1697	FE	5402.06
Bottom Perfs/OH	O-20-17S-32E	387	FS	1695	FE	5508.04
Projected TD	O-20-17S-32E	386	FS	1667	FE	7113.78