

Results of Directional Survey

API number:	30-025-39109		
OGRID:		Operator:	COG OPERATING LLC
		Property:	GC FEDERAL # 13

surface	ULSTR:	N	19	T	17S	R	32E
			575	FSL		1915	FWL

BH Loc	ULSTR:	N	19	T	17S	R	32E
			983	FSL		1649	FWL

Top Perf/OH	ULSTR:	N	19	T	17S	R	32E
	5308		909	FSL		1701	FWL

Bot Perf/OH	ULSTR:	N	19	T	17S	R	32E
	6850		981	FSL		1650	FWL

	MD	N/S	E/W	VD
	5261	330.22	-211.98	5232.39
TOP PERFS/OH	5308	334.11	-214.03	5279.18
	5356	338.08	-216.12	5326.97
	6815	405.10	-263.98	6783.48
BOT PERFS/OH	6850	406.03	-264.58	6818.46
	6908	407.58	-265.58	6876.43

NEXT TO LAST	6815	405.10	-263.98	6783.48
LAST READING	6908	407.58	-265.58	6876.43
TD	6922	407.95	-265.82	6890.42

Surface Location	575	FS	1915	FW
Projected BHL	983	FS	1649	FW
Location of				
Top Perfs/OH	909	FS	1701	FW
Bottom Perfs/OH	981	FS	1650	FW

SUMMARY of Subsurface Locations

Surface Location	N-19-17S-32E	575	FS	1915	FW	Vert. Depth
Top Perfs/OH	N-19-17S-32E	909	FS	1701	FW	5279 18
Bottom Perfs/OH	N-19-17S-32E	981	FS	1650	FW	6818.46
Projected TD	N-19-17S-32E	983	FS	1649	FW	6890 42