

Results of Directional Survey

API number:	30-025-39874		
OGRID:		Operator:	COG OPERATING LLC
		Property:	MC FEDERAL # 51

surface	ULSTR:	H	21	T 17S	R 32E
				1770 FNL	100 FEL

BH Loc	ULSTR:	H	21	T 17S	R 32E
7035	MD	7026.3	TVD	1662 FNL	344 FEL

Top Perf/OH	ULSTR:	H	21	T 17S	R 32E
5454	MD	5445.3	TVD	1665 FNL	343 FEL

Bot Perf/OH	ULSTR:	H	21	T 17S	R 32E
6750	MD	6741.3	TVD	1662 FNL	344 FEL

	MD	N/S	E/W	VD
	5461	104.70	-243.24	5452.25
TOP PERFS/OH	5454	104.69	-243.17	5445.25
	5556	104.89	-244.16	5547.25
	5556	104.89	-244.16	5547.25
BOT PERFS/OH	6750	108.11	-243.97	6741.25
	5619	105.06	-244.15	5610.25

NEXT TO LAST	5619	105.06	-244.15	5610.25
LAST READING	5670	105.16	-244.14	5661.25
TD	7035	107.84	-243.87	7026.25

Surface Location	1770	FN	100	FE
Projected BHL	1662	FN	344	FE
Location of				
Top Perfs/OH	1665	FN	343	FE
Bottom Perfs/OH	1662	FN	344	FE

SUMMARY of Subsurface Locations

Surface Location	H-21-17S-32E	1770	FN	100	FE	Vert. Depth
Top Perfs/OH	H-21-17S-32E	1665	FN	343	FE	5445.25
Bottom Perfs/OH	H-21-17S-32E	1662	FN	344	FE	6741.25
Projected TD	H-21-17S-32E	1662	FN	344	FE	7026.25