

Results of Directional Survey

API number:	30-025-39623		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	NORTH MADURO FEDERAL UNIT # 3H

surface	ULSTR:	E	20	T	19S	R	33E
				2310	FNL	560	FWL

BH Loc	ULSTR:	H	20	T	19S	R	33E
14292	MD	9973.0	TVD	1888	FNL	4940	FWL
						340	FEL

Top Perf/OH	ULSTR:	E	20	T	19S	R	33E
9952	MD	9923.6	TVD	2282	FNL	636	FWL

Bot Perf/OH	ULSTR:	H	20	T	19S	R	33E
13336	MD	9985.9	TVD	1991	FNL	3990	FWL
						1290	FEL

	MD	N/S	E/W	VD
	9942	27.32	68.75	9917.05
TOP PERFS/OH	9952	28.26	76.24	9923.60
	9973	30.24	91.97	9937.36
	13280	313.66	3374.41	9985.59
BOT PERFS/OH	13336	319.31	3430.12	9985.93
	13344	320.12	3438.08	9985.98

NEXT TO LAST	14197	410.57	4286.11	9974.42
LAST READING	14238	415.32	4326.83	9973.81
TD	14292	421.58	4380.46	9973.01

Surface Location	2310	FN	560	FW
Projected BHL	1888	FN	4940	FW
Location of				
Top Perfs/OH	2282	FN	636	FW
Bottom Perfs/OH	1991	FN	3990	FW

SUMMARY of Subsurface Locations

Surface Location	E-20-19S-33E	2310	FN	560	FW	Vert. Depth
Top Perfs/OH	E-20-19S-33E	2282	FN	636	FW	9923.60
Bottom Perfs/OH	H-20-19S-33E	1991	FN	3990	FW	9985.93
Projected TD	H-20-19S-33E	1888	FN	4940	FW	9973.01

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