

Harbar Drilling Co.
Ray No. 1

32-5-20W
SE SW NE

Phillips County

Log from 3050 feet to 3634 feet.

Elevation: 2187

Exam - HV Lörke
Page 1.

- 3050 3055 Various colored shale (gray predominating), some
- 55 60 Drab-white fossiliferous lime 50 percent, various colored shale 30 percent, micaceous cemented sand 20 percent
- 60 65 Ditto, increase in shale to 50 percent (mostly red), decrease in lime.
- 65 75 Various colored shale, some drab-white fossiliferous lime and micaceous cemented sand
- 75 80 Ditto, increase in lime to 35 per cent
- 80 85 Various colored shale (mostly red)
- 85 90 Various colored shale, some drab-white fossiliferous lime
- 90 95 Ditto, lime absent
- 95 3100 Ditto, some cemented micaceous sand
- 3100 05 Various colored shale 50 percent, drab-white fossiliferous lime 25 percent, micaceous cemented sand 25 percent
- 05 15 Ditto, increase in lime to 35 percent
- 15 20 Ditto
- Topeka
- 3120 3145 Drab-white fossiliferous lime
- 45 50 Gray-drab fossiliferous lime
- 50 55 Ditto, red shale 25 percent
- 55 60 Ditto, finely grained micaceous cemented sand 20 percent
- 60 65 Drab-white highly fossiliferous (many fusulina), cherty lime
- 65 70 Do, lime highly cherty
- 70 75 Ditto, some various colored shale
- 75 80 White fossiliferous cherty lime
- 80 95 Ditto, chert absent
- 95 3200 Drab-white fossiliferous sucrose lime
- 3200 10 Drab-white fossiliferous lime
- 10 15 Ditto, lime cherty (many fusulina)
- 15 20 Ditto, some red shale (probably oaving)
- 20 40 Drab-white fossiliferous cherty lime
- 40 50 Drab-white fossiliferous lime, red shale (shale oave)
- 50 55 Drab-white fossiliferous lime
- 55 70 Drab-white highly porous fossiliferous cherty lime (light saturation).
Corresponds to 3251-57 on time log
- 70 80 Drab-white fossiliferous cherty lime
- 80 3300 Drab-white fossiliferous sucrose lime (some saturation).
Corresponds to 3270-77 on Time Log.
- 3300 10 Drab fossiliferous lime
- 10 20 Ditto, some various colored shale
- 20 30 Drab highly fossiliferous and porous lime (light saturation).
Corresponds to 3318-21 on Time Log
- 30 35 Drab fossiliferous lime (trace oil), some various colored shale
- 3355 equals 3342
- 3342 3345 Various colored shale
- 45 50 White fossiliferous cherty lime
- 50 55 Drab-white fossiliferous lime, some various colored shale
- 55 60 White fossiliferous lime
- 60 70 Ditto, lime cherty

3370	80	White fossiliferous highly cherty lime (light saturation) corresponds to 3372-75 on Time Log
	80	85 Ditto, some various colored shale and micaceous cemented sand
	85	94 Various colored shale, some drab fossiliferous lime
<u>LANSING -- KANSAS CITY</u>		
3394	3400	White fossiliferous oolitic cherty lime (trace oil) ✓
3400	15	White fossiliferous cherty lime, some various colored shale
	15	25 White fossiliferous oolitic cherty lime, trace oil ✓
	25	45 Ditto, chert absent, some various colored shale
	45	50 White, fossiliferous oolitic lime, trace oil ✓
	50	55 Ditto, various colored shale (mostly red) 50 percent
	55	60 Brownish-white fossiliferous lime
	60	65 Ditto, some various colored shale
	65	70 Drab-white fossiliferous oolitic lime (light saturation)
	70	75 Ditto, lime cherty
	75	80 White fossiliferous lime
	80	90 Drab-white fossiliferous cherty lime
	90	95 Brown dense lime
	95	3500 Drab fossiliferous lime
3500	15	Drab-white fossiliferous oolitic lime (trace oil) ✓
	15	20 Drab-white fossiliferous lime 50 percent, various colored shale 50 percent.
	20	30 Ditto, lime lightly saturated
	30	40 Gray-drab oolitic lime (some black dead oil) 75 percent, black shale 25 percent. ✓

MARMATON

3540	3550	Various colored shale
	50	60 Ditto, some micaceous cemented sand
	60	65 Ditto, some lime and micaceous cemented sand
	65	70 Ditton
	70	73 Ditto, some brown lime and micaceous cemented sand
	73	78 White pyritic lime ✓
	78	80 Ditto, trace sand

REAGAN SAND

3580	3585	Hard sand, some various colored shale
	83	87 Cemented and free different sized grained sand (saturated)
	87	95 Cemented well saturated sand
	95	99 Tight lightly saturated sand
	99	3606 Cemented well saturated sand
3606	16	Hard quartzitic sand (barren)
	16	27 Various colored shale (mostly red micaceous shale)
	27	34 Granite wash