

Operator: Castle and Jenkins
 Farm: Osborne
 Well No.: 1
 Location: Wise County
 10,500' N. of 36° 50')
 6,150' E. of 82° 45') approximate
 Elevation:
 Total Depth: 4861'
 Drilling Commenced: 1948
 Well Completed: February 1950
 Result: Dry hole

Samples examined by
 Allen D. Williamson,
 U. S. Geological Survey,
 Lexington, Kentucky
 June, 1950

GEOLOGIC LOG

Depth (Feet)Lithology

Well starts in lower Devonian rocks.
 First samples Silurian, Clinton Formation-245'

225-230	Sandstone, white (N9), very fine- to fine-grained, sub-angular, moderately well sorted, slightly porous, slightly silty, scattered black mineral, some secondary enlargement of quartz grains, 90% quartzose; and shale, medium dark gray (N4), silty.
230-240	No sample.
240-290	Siltstone, very dusky red (10R 2/2), sandy, dolomitic, micaceous, some beds hematitic; siltstone, medium gray (N5), slightly dolomitic; and abundant gypsum.
290-320	No sample.
320-335	Siltstone, medium gray (N5), dolomitic; shale, medium dark gray (N4), silty, moderately fissile; and sandstone, light gray (N7), very fine-grained, subangular to subrounded, moderately well sorted, very slightly porous, dolomitic, friable, 90% quartzose.
335-347	Siltstone, very dusky red (10R 2/2), hematitic, micaceous, slightly dolomitic, with scattered gypsum.
347-355	Siltstone, grayish red (10R 4/2), sandy to argillaceous, dolomitic, scattered gypsum.
355-360	Like 347-355; and shale, grayish red (5R 3/2), fissile.
360-365	No sample.
365-370	Siltstone, medium gray (N5), dolomitic; and shale, medium dark gray (N4), fissile.

- 370-375 Siltstone, like 365-370.
- 375-380 Iron ore, hematitic, slightly dolomitic, conglomeratic, with well rounded, quartz pebbles up to 3 mm. in diameter, abundant gypsum; probably overlain by thin bed of shale, dark greenish gray (5GY 4/1), fissile.
- 380-385 Like 375-380.
- 385-390 Siltstone, pale red (5R 6/2) to light gray (N7), very sandy, slightly dolomitic, abundant gypsum, and well rounded coarse quartz grains; and shale, medium gray (N5), slightly silty, fissile.
- 390-395 Sandstone, grayish red (10R 3/2), very fine- to fine-grained, subangular to subrounded, moderately well sorted, slightly porous, hematite, slightly dolomitic, abundant gypsum, 3/4 quartzose; and sandstone, light gray (N7), very fine- to fine-grained, subangular to rounded, moderately well sorted, slightly porous, silty, dolomitic, 90% quartzose.
- 395-400 No sample.
- 400-405 Sandstone, light gray (N7), like 390-395; and shale, medium dark gray (N4), fissile.
- 405-410 Like 400-405
- 410-420 Like 405-410
- 420-430 Siltstone, medium dark gray (N4), slightly dolomitic; and shale, medium dark gray (N4), fissile.
- 430-440 Siltstone, and shale, like 420-430 interbedded with sandstone, light gray (N7), very fine-grained, subangular to subrounded, moderately well sorted, very slightly porous, slightly silty, scattered black mineral, 90% quartzose.
- 440-450 Like 430-440, with thin bed of sandstone, light gray (N7), fine- to very coarse-grained, subrounded, to rounded, poorly sorted, silty, dolomitic, abundant black mineral, 90% quartzose.
- 450-460 Like 440-450.
- 460-465 No sample
- 465-470 Like 450-460

Silurian, Clinton

- 470-475 Sandstone, very light gray (N8), fine-grained, subrounded, to rounded, moderately well sorted, slightly porous, slightly silty, few rounded, coarse quartz grains, 90% quartzose; and shale, medium dark gray (N4), slightly silty, fissile.
- 475-480 Like 470-475.
- 480-485 No sample.
- 485-490 Like 475-480.
- 490-500 Like 475-480.
- 500-505 Like 475-480.
- 505-510 Sandstone, like 500-505; and siltstone, medium gray (N5) to medium dark gray (N4), sandy.
- 510-515 Sandstone, light gray (N7) to medium gray (N5), very fine- to medium-grained, subangular to rounded, poorly sorted, slightly porous, very silty, abundant argillaceous material, scattered black mineral, 90% quartzose.
- 515-520 Like 510-515 with siltstone, medium dark gray (N4), sandy.
- 520-525 Like 515-520; with abundant gypsum.
- 525-545 No sample.
- 545-550 Sandstone, like 520-525.
- 550-560 Like 545-550.
- 560-568 Like 550-560 with abundant rounded coarse quartz grains.
- 568-575 Like 560-568.
- 575-580 Like 568-575 grading into siltstone, medium gray (N5), sandy.
- 580-585 Like 575-580 interbedded with shale, medium dark gray (N4), fissile.
- 585-595 No sample.
- 595-600 Siltstone, medium gray (N5), sandy; and shale, medium dark gray (N4), fissile, interbedded.
- 600-606 Shale, medium dark gray (N4), silty, moderately fissile.

VDMR Well No. 44

- 606-613 Shale, like 600-606 interbedded with sandstone, light gray (N7), very fine-grained, subangular to subrounded, well sorted, very slightly porous, quartzitic, 90% quartzose.
- 613-616 Like 606-613.
- 616-624 Shale, like 613-616; and siltstone, medium dark gray (N4), sandy.
- 624-630 Shale, medium dark gray (N4), fissile.
- 630-635 Siltstone, medium gray (N5), sandy, dolomitic.
- 635-640 Like 630-635; with shale, medium dark gray (N4), silty, medium fissile.
- 640-647 Like 635-640.
- 647-655 Siltstone, medium gray (N5), sandy, slightly dolomitic; and sandstone, very light gray (N8), very fine-grained, subangular to subrounded, moderately well sorted, very slightly porous, dolomitic, 90% quartzose.
- 655-665 Like 647-655.
- 665-670 Like 655-665.
- 670-675 Sandstone, white (N9), very fine-grained, subangular to subrounded, moderately well sorted, very slightly porous, quartzitic, scattered medium to coarse, rounded quartz grains, scattered black mineral, few pieces gypsum, 90% quartzose.

Ordovician, Sequatchie Formation - 252'

- 678-685 Siltstone, grayish red (10R 3/2), calcareous, sandy to argillaceous micaceous, lumpy to moderately fissile.
- 685-700 Like 678-685.
- 700-705 Like 685-700.
- 705-710 Like 700-705.
- 710-716 Like 705-710.
- 716-726 Like 710-716.
- 726-736 Like 716-726.
- 736-741 Siltstone, medium gray (N5), with greenish tint.

741-751 Like 736-741 with some siltstone, medium gray (N5), calcareous, fossiliferous.

751-760 Siltstone, medium gray (N5), calcareous, like 741-751.

760-767 Like 751-760 with shale, medium dark gray (N4), calcareous, moderately fissile.

767-772 Like 760-767.

772-782 Shale, medium dark gray (N4), calcareous, fossiliferous.

782-792 Like 772-782.

792-800 No sample.

800-810 Siltstone, grayish red (5R 4/2), calcareous, and shale, grayish red (5R 4/2), silty, non-calcareous, with small amount of shale, greenish gray (5G 6/1), calcareous.

810-820 Like 800-810.

820-830 Like 810-820.

830-840 Siltstone and shale, medium dark gray (N4), calcareous, with abundant thin seams of calcite.

840-848 No sample.

848-856 Like 830-840.

856-864 Like 848-856.

864-869 Like 858-864.

869-878 Like 864-869.

878-885 Like 869-878.

885-893 Like 878-885.

893-901 Like 885-893; and limestone, medium gray (N5), to light gray (N7), finely crystalline to medium crystalline, silty nodules.

901-912 Like 893-901.

912-920 Like 901-912.

920-925 Like 912-920

925-930 No sample.

Reedville Shale - 405'

930-935	Limestone, medium light gray (N6) to white (N9), finely crystalline to medium crystalline, fossiliferous, silty lenses; and shale, medium dark gray (N4), moderately fissile, non-calcareous, interbedded.
935-939	Like 930-935.
939-947	Like 935-939.
947-953	Limestone, medium gray (N5) to medium dark gray (N4), silty, fossiliferous.
953-957	Like 947-953.
957-962	Like 953-957.
962-970	Like 957-962.
970-980	Like 962-970; and siltstone, medium dark gray (N4), calcareous.
980-985	Like 975-980.
985-994	Like 980-985.
994-1005	Like 985-994.
1005-1012	Like 994-1005.
1012-1020	Like 1005-1012.
1020-1030	Like 1012-1020.
1030-1040	Like 1020-1030.
1030-1048	Like 1030-1040.
1048-1055	Limestone, like 1030-1048; and shale, medium dark gray (N4), fissile, non-calcareous.
1055-1060	Like 1048-1055.
1060-1070	Like 1055-1060.
1070-1080	Like 1060-1070.
1080-1100	No sample.
1100-1120	Like 1070-1080.
1120-1125	Like 1100-1120.

1125-1132	Like 1120-1125; and siltstone, medium gray (N5), with slight brownish tint, non-calcareous.
1132-1143	Like 1125-1132.
1143-1150	Like 1132-1143; with few slickensided (?) chips.
1150-1156	Like 1143-1150, no slickensides noted.
1156-1164	Limestone, very light gray (N8) to medium light gray (N6), non-crystalline to dense, fossiliferous; shale, medium dark gray (N4), silty, moderately fissile, non-calcareous; and siltstone, medium gray (N5), with brownish tint, slightly calcareous.
1164-1171	Like 1156-1164.
1171-1180	Like 1164-1171.
1180-1190	Like 1171-1180.
1190-1203	Like 1180-1190.
1203-1210	Siltstone, medium dark gray (N4), calcareous; and shale, medium dark gray (N4), non-calcareous.
1210-1221	No sample.
1221-1230	Like 1203-1210; with limestone, light gray (N7), finely crystalline to medium crystalline, fossiliferous.
1230-1239	Like 1221-1230.
1231-1240	Like 1230-1239.
1240-1250	Like 1231-1240.
1250-1260	No sample.
1260-1270	Like 1240-1250.
1270-1284	Like 1260-1270.
1284-1300	Like 1270-1284.
1300-1320	Like 1284-1300.
1320-1335	Like 1300-1320.
1335-1345	Like 1320-1335.
1345-1355	Like 1335-1345.

Trenton Limestone - 550'

1355-1365	Limestone, medium dark gray (N4), silty; and light gray (N7), medium crystalline, fossiliferous, mottled.
1365-1375	Like 1355-1365; and siltstone, medium dark gray (N4), calcareous.
1375-1385	Like 1365-1375.
1385-1497	No sample.
1497-1509	Limestone, white, medium crystalline to medium dark gray (N4), silty, with some limestone, yellowish gray (5Y 8/1), medium crystalline, fossiliferous, little chert.
1509-1520	Like 1497-1509.
1520-1526	Like 1509-1520 with siltstone, medium dark gray (N4), calcareous.
1526-1538	Limestone, white (N9) to brownish gray (5YR 4/1), medium crystalline, fossiliferous; and siltstone, like 1520-1526.
1538-1547	Like 1526-1538.
1547-1558	Like 1538-1547.
1558-1570	Like 1547-1558.
1570-1581	Like 1558-1570.
1581-1592	Like 1558-1570.
1592-1609	Like 1558-1570.
1609-1620	Like 1558-1570.
1620-1632	Like 1558-1570.
1632-1642	Like 1558-1570.
1642-1650	Like 1632-1642.
1650-1660	No sample.
1660-1672	Like 1632-1642.
1672-1685	Like 1632-1642.
1685-1695	Like 1632-1642.
1695-1718	Like 1632-1642.
1718-1750	No sample.

1750-1760	Limestone, white (N9) to light gray (N7), dense to medium crystalline, fossiliferous; limestone, brownish gray (5YR 4/1) dense; and siltstone, medium dark gray (N4), calcareous, with few pieces clear quartz (pebble fragments?).
1760-1775	No sample.
1775-1790	Like 1750-1760.
1790-1805	Like 1775-1790.
1805-1817	Limestone, very light gray (N8) to brownish gray (5YR 4/1), dense to finely crystalline, fossiliferous; limestone, brownish gray (5YR 4/1), dense, silty; and siltstone, medium dark gray (N4), dolomitic.
1817-1834	Like 1804-1817.
1834-1848	Like 1817-1834.
1848-1862	Like 1834-1848.
1862-1875	Like 1848-1862.
1875-1895	Like 1862-1875.
1895-1905	Like 1875-1895.

Eggleston Limestone - 122'

1905-1915	Limestone, white (N9), non-crystalline to medium crystalline; limestone, brownish gray (5YR 4/1), medium crystalline; siltstone, medium dark gray (N4), with slight brownish tint, calcareous; and shale, light greenish gray (5GY 8/1), bentonitic (?), slightly dolomitic.
1915-1925	No sample.
1925-1930	Like 1905-1915.
1930-1935	Like 1925-1930, fossiliferous.
1935-1948	Like 1930-1935.
1948-1965	Like 1935-1948.
1965-1985	No sample.
1985-1998	Like 1948-1965.
1998-2012	Shale, medium dark gray (N4) with brownish tint, very calcareous; and limestone, brownish gray (5YR 4/1), dense, silty.
2012-2027	No sample.

Pre-Eggleston-Middle Ordovician Limestone

2027-2035	Limestone, white (N9) to light olive gray (5Y 6/1); and shale, light greenish gray (5GY 8/1), siliceous, bentonitic (?), with scattered brown mineral.
2035-2050	Like 2027-2035.
2050-2060	Like 2035-2050.
2060-2075	No sample.
2075-2084	Like 2050-2060.
2084-2100	Like 2075-2084.
2100-2110	Like 2084-2100.
2100-2125	Like 2100-2110.
2125-2140	Limestone, white (N9), to brownish gray (5YR 4/1), non-crystalline to dense, fossiliferous.
2140-2240	No samples.
2240-2250	Like 2125-2140 with shale, light greenish gray (5GY 8/1), siliceous, bentonitic (?).
2250-2255	Like 2240-2250.
2255-2272	Like 2250-2255.
2272-2292	Like 2255-2272.
2292-2300	Like 2272-2292; with dolomite, dark gray (N3), silty.
2295-2305	Limestone, brownish gray (5YR 4/1), dense to finely crystalline, scattered pyrite.
2305-2313	Limestone, brownish gray (5YR 4/1), dense; with small amount of limestone, white (N9), non-crystalline.
2313-2320	Lime 2305-2313.
2320-2325	Like 2313-2320.
2325-2338	Limestone, white (N9) to brownish gray (5YR 4/1), silty.
2338-2348	Like 2325-2338.
2348-2357	Like 2338-2348.
2357-2363	Like 2348-2357.

2363-2370	Like 2357-2363.
2370-2377	Limestone, medium light gray (N6) to brownish gray (5YR 4/1), silty.
2377-2387	Like 2370-2377.
2387-2393	Like 2377-2387.
2393-2403	Like 2387-2393.
2403-2410	Limestone, brownish gray (5YR 4/1), finely crystalline, abundant pyrite.
2410-2415	Like 2403-2410.
2415-2421	Like 2410-2415.
2421-2431	Limestone, brownish gray (5YR 4/1), dense, thin-bedded.
2431-2440	Limestone, white (N9) to brownish gray (5YR 4/1), like 2421-2431.
2440-2450	Like 2431-2440.
2450-2455	Like 2440-2450.
2455-2470	Like 2450-2455, with small amount of limestone, medium light gray (N6), non-crystalline.
2470-2477	Like 2455-2470.
2477-2487	Limestone, brownish gray (5YR 4/1), dense, slightly silty.
2487-2493	Like 2477-2487.
2497-2503	Like 2487-2493.
2503-2510	Limestone, white (N9) to brownish gray (5YR 4/1), dense, fossiliferous; and limestone, brownish gray, finely crystalline, slightly silty.
2510-2520	Sandstone, white (N9) to light brownish gray (5YR 6/1), dense; and limestone, brownish gray (5YR 4/1), finely crystalline, silty.
2520-2531	Like 2510-2520.
2531-2537	Limestone, brownish gray (5YR 4/1), finely crystalline, silty.
2537-2549	Like 2531-2537.
2549-2555	Like 2537-2549.

2555-2567	Like 2549-2555.
2567-2577	Like 2555-2567.
2577-2587	Like 2567-2577.
2587-2597	Dolomite, olive gray (5Y 3/2), dense.
2597-2610	Limestone, white (N9) to light brownish gray (5YR 6/1), dense.
2620-2631	Like 2597-2610 with dolomite, brownish gray (5YR 4/1), silty.
2631-2637	Like 2620-2631.
2637-2648	Like 2631-2637.
2648-2658	Like 2637-2648.
2667-2677	Like 2648-2658.
2677-2684	Like 2667-2677.
2684-2694	Like 2677-2684.
2694-2703	Like 2684-2694.
2703-2710	Like 2694-2703.
2710-2719	Like 2703-2710, fossiliferous (brachiopod fragment).
2719-2727	Like 2710-2719.
2727-2733	Like 2719-2727, but no fossils noted.
2733-2743	Like 2727-2733.
2743-2755	Like 2733-2743.
2755-2768	Like 2743-2755.
2768-2868	No sample.
2868-2871	Like 2755-2768 with abundant white, medium crystalline calcite.
2871-2903	No sample.
2903-2924	Like 2868-2871.
2924-2936	Limestone, light olive gray (5Y 6/1), dense to brownish gray (5YR 4/1), finely crystalline, silty.

2936-2944	Like 2924-2936 with abundant white to clear, medium crystalline calcite.
2944-2960	Limestone, white (N9) to light olive gray (5Y 6/1), dense.
2960-2970	Like 2944-2960.
2970-2977	Like 2960-2970.
2977-2990	Like 2970-2977.
2990-3000	No sample.
3000-3006	Like 2977-2990.
3006-3017	Like 3000-3006.
3017-3271	No sample.
3271-3276	Limestone, white (N9), medium crystalline to light olive gray (5YR 6/1), dense with scattered fine to medium crystals, thin-bedded (?), scattered crystals of clear calcite.
3276-3284	Like 2371-3276.
3284-3291	Like 3276-3284; and shale, medium dark gray (N4), silty, calcareous.
3291-3296	Like 3284-3291.
3296-3302	Like 3291-3296.
3302-3306	Like 3296-3302.
3306-3312	Like 3302-3306.
3312-3321	Limestone, light brownish gray (5YR 6/1) to brownish gray (5YR 4/1), silty with few coarse, well rounded, clear quartz grains.
3321-3329	Limestone, white (N9) to light olive gray (5Y 5/2), dense, thin-bedded (?), with abundant clear calcite.
3329-3338	Limestone, light olive gray (5Y 5/2), dense to medium dark gray (N4), silty.
3338-3346	Like 3329-3338.
3346-3359	Limestone, white (N9) to medium gray (N5), with strong brownish tint, dense; abundant clear calcite.
3359-3366	Like 3346-3359.
3366-3373	Like 3359-3366.

3373-3379 Like 3366-3373.

3379-3389 Like 3373-3379.

3389-3402 Limestone, light brownish gray (5YR 6/1) to brownish gray (5YR 4/1), dense.

3402-3412 Like 3398-3402.

3412-3423 Like 3402-3412.

3423-3432 Like 3412-3423.

3432-3439 Like 3423-3432 with small amount of limestone, white (N9), medium crystalline.

3439-3445 Like 3432-3439 with limestone, brownish gray (5YR 4/1), silty, dolomitic; and small amount of brownish black (5YR 3/1) chert.

3445-3453 Like 3439-3445.

3453-3463 Like 3455-3453.

3453-3459 Limestone, white (N9) to light brownish gray (5YR 4/1), dense.

3459-3467 Like 3453-3459.

3467-3475 Like 3459-3467.

3475-3487 Like 3467-3475 with small amount of white (N9), medium crystalline calcite.

3487-3500 Limestone, white (N9), non-crystalline to brownish gray (5YR 4/1), dense, slightly silty, dolomitic; and small amount of brownish gray (5YR 4/1) chert.

3500-3510 Like 3487-3500.

3510-3522 Like 3500-3510.

3510-3532 Limestone, light brownish gray (5YR 6/1) to brownish gray (5YR 4/1) slightly silty; and small amount of white (N9), medium crystalline calcite.

3532-3543 Like 3510-3532 with abundant brownish black (5YR 3/1) chert.

3543-3552 Like 3532-3543.

3552-3563 Like 3543-3552.

3563-3574 Like 3563-3574.

- 3574-3584 Like 3563-3574.
- 3584-3591 Dolomite, light brownish gray (5YR 4/1), medium crystalline; and limestone, brownish gray (5YR 4/1), silty; also small amount of chert, light brownish gray (5YR 6/1),
- Lower Ordovician, Beekmantown Limestone - 696'
- 3591-3600 Like 3584-3591.
- 3600-3604 Dolomite, very light gray (N8), finely crystalline, with scattered fine to medium rounded quartz grains.
- 3604-3606 Like 3600-3604 with shale, medium gray (N5), siliceous.
- 3606-3608 Like 3604-3608.
- 3608-3610 Dolomite, very light gray (N8), finely crystalline, with abundant medium, well rounded, frosted quartz grains.
- 3610-3613 Like 3608-3610.
- 3613-3616 Like 3610-3613.
- 3616-3621 Dolomite, light gray (N7), medium crystalline.
- 3621-3623 Like 3616-3621 with abundant clear to white chert.
- 3623-3625 Chert, white (N9) and abundant clear to frosted, well rounded, medium quartz grains, with small amount of dolomite, light gray (N7), medium crystalline.
- 3625-3629 Dolomite, like 3623-3625.
- 3629-3633 Like 3625-3629.
- 3633-3636 Like 3629-3633; with small amount of milky chert.
- 3636-3637 Like 3633-3636 with abundant well rounded, frosted quartz grains.
- 3637-3646 Dolomite, light gray (N7), finely crystalline, with small amount of white chert.
- 3648-3641 Like 3637-3646.
- 3641-3651 No sample.
- 3651-3655 Like 3648-3641, with few fragments of black chert; and small amount of shale, grayish black (N2), contorted.
- 3655-3660 Dolomite, very light gray (N8), finely crystalline; siltstone, medium light gray (N6) to medium dark gray (N4), calcareous; and abundant bitumen.

3660-3662 Dolomite, light gray (N7), finely crystalline.

3662-3664 Like 3660-3662, with abundant milky chert.

3664-3666 Like 3662-3664.

3666-3667 Like 3664-3666.

3667-3674 Dolomite, white (N9), finely crystalline; and milky chert.

3674-3677 Like 3667-3674.

3677-3683 Dolomite, light gray (N7), finely crystalline; and shale, medium gray (N5) to dark gray (N3), silty, slickensided.

3683-3688 Like 3677-3683.

3688-3694 Limestone, medium gray (N5), dense, dolomitic; and abundant well rounded, frosted quartz grains.

3698-3695 Dolomite, light gray (N7), finely crystalline.

3695-3700 Like 3689-3695.

3700-3705 Like 3695-3700.

3705-3709 Like 3700-3705.

3709-3714 Like 3705-3709.

3714-3718 Like 3709-3714.

3718-3722 Like 3714-3718 with small amount of milky chert.

3722-3725 Like 3718-3722.

3725-3731 Like 3722-3727; and shale, medium gray (N5), slightly dolomitic.

3731-3737 Like 3725-3731; and scattered well rounded, frosted quartz grains.

3737-3742 Dolomite, like 3731-3737; and dolomite, white (N9), dense (?), with medium crystals, light gray (N7).

3742-3745 Like 3737-3742.

3745-3747 Like 3742-3745; and milky chert.

3747-3750 Dolomite, light gray (N7), medium crystalline.

3750-3755 Like 3747-3750.

3755-3761 Like 3750-3755.

3761-3766 Like 3755-3761, with small amount of white opaque to milky chert.

3766-3770 Like 3761-3766.

3770-3774 Like 3766-3770.

3774-3778 Chert, white opaque to milky.

3778-3782 Dolomite, light gray (N7), medium crystalline; and chert, like 3774-3778.

3782-3788 Like 3778-3782.

3788-3791 Like 3782-3788.

3791-3794 Like 3788-3791.

3794-3798 Dolomite, white (N9), finely crystalline, with scattered fine to medium; well rounded, frosted quartz grains.

3798-3803 Dolomite, light gray (N7), finely to medium crystalline.

3803-3809 Like 3791-3794.

3809-3816 Like 3803-3809.

3816-3821 Dolomite, light gray (N7), medium crystalline, with scattered fine to medium, well rounded quartz grains; and small amount of shale, medium gray (N5), siliceous.

3821-3826 Dolomite, light gray (N7), medium crystalline with abundant white chert.

3826-3831 Like 3821-3826.

3831-3835 Like 3826-3831.

3835-3841 Like 3831-3835.

3841-3846 Like 3835-3841.

3846-3849 Like 3841-3846.

3849-3851 Like 3846-3849, with scattered green mineral.

3851-3855 Dolomite and chert, like 3849-3851 with abundant well rounded frosted quartz grains.

3855-3858 Dolomite, white (N9), finely crystalline; dolomite, medium gray (N5), finely crystalline, scattered pyrite crystals; and abundant white chert as 3851-3855.

3858-3861 Like 3855-3858.

VDMR Well No. 44

- 3861-3866 Dolomite, white (N9) to light gray (N7), finely crystalline.
- 3866-3870 Dolomite, very light gray (N8), finely to medium crystalline, with abundant well rounded quartz grains; and thin bed of sandstone, white (N9), quartzitic, fine- to medium-grained, rounded, well sorted, very slightly porous, grains show some secondary enlargement, 95% quartzose.
- 3870-3872 Dolomite, very light gray (N8), medium crystalline with abundant quartz grains as 3866-3870; and little shale, dark gray (N3), carbonaceous (cavings?).
- 3872-3895 Dolomite, white (N9), finely crystalline.
- 3895-3898 Like 3872-3895 with abundant white chert.
- 3898-3903 Dolomite, very light gray (N8), medium crystalline, with abundant well rounded quartz grains.
- 3903-3908 Dolomite, white (N9), finely crystalline; and medium gray (N5), very finely crystalline.
- 3908-3912 Like 3903-3908.
- 3912-3918 Like 3908-3912.
- 3918-3922 Dolomite, very light gray (N8), fine to medium crystalline, sandy, with abundant medium to coarse, well rounded, quartz grains.
- 3922-3927 Dolomite, brownish gray (5YR 4/1), medium crystalline.
- 3927-3932 Like 3922-3927, with small amount of shale, medium dark gray (N4), dolomitic, lumpy.
- 3932-3938 Dolomite, light gray (N7), finely to medium crystalline.
- 3938-3941 Like 3932-3938.
- 3941-3945 Dolomite, very light gray (N8), very finely crystalline, scattered pyrite crystals.
- 3945-3950 Dolomite, very light gray (N8), finely to medium crystalline.
- 3950-3955 Dolomite, white (N9) to medium light gray (N6), finely to medium crystalline.
- 3955-3959 Like 3950-3955.
- 3959-3962 Dolomite, very light gray (N8), finely crystalline.
- 3962-3965 Like 3959-3962.

3965-3970 Dolomite, light gray (N7), medium crystalline.
3970-3973 Like 3965-3970.
3973-3977 Dolomite, very light gray (N8), finely crystalline.
3977-3982 Dolomite, very light gray (N8), medium crystalline; and white chert.
3982-3986 Like 3977-3982.
3986-3991 Like 3982-3986.
3991-3996 Like 3986-3991.
3996-4001 Like 3996-4001.
4001-4005 Like 3996-4001, with abundant white chert.
4005-4010 Like 4001-4005.
4010-4015 Like 4005-4010.
4015-4026 Dolomite, light gray (N7), with brownish tint, medium crystalline.
4026-4030 Like 4015-4026.
4030-4035 Like 4026-4030, with small amount of milky oolitic chert.
4035-4040 Like 4030-4035.
4040-4044 Dolomite, brownish gray (5YR 6/1), medium crystalline.
4044-4048 Dolomite, very light gray (N8), finely crystalline.
4048-4052 Like 4044-4048.
4052-4055 Like 4048-4052.
4055-4060 Like 4052-4055.
4060-4062 Like 4055-4060.
4062-4068 Dolomite, white (N9), very finely crystalline, with abundant white chert.
4068-4075 Like 4062-4068.
4068-4073 Dolomite, light gray (N7) to very light gray (N8), finely to medium crystalline with chert, like 4068-4075.
4073-4077 Shale, dark gray (N3), fissile, with bituminous material.

VDMR Well No. 44

4077-4083 Dolomite, light gray (N7) to brownish gray (5YR 4/1), finely to medium crystalline, argillaceous.

4083-4088 Like 4077-4083.

4088-4093 Dolomite, very light gray (N8), very finely crystalline; and chert, white to milky, oolitic.

4093-4099 Like 4088-4093.

4099-4105 Dolomite, medium gray (N5), with little brownish tint, finely crystalline, argillaceous.

4105-4111 Dolomite, medium gray (N5) to brownish gray (5YR 4/1), medium crystalline.

4111-4116 Dolomite, light gray (N7), with brownish tint, finely crystalline.

4116-4120 Dolomite, very light gray (N8), dense to finely crystalline.

4120-4125 Like 4116-4120 with small amount of white chert.

4125-4130 Like 4120-4125.

4130-4135 Like 4125-4130.

4135-4140 Like 4130-4135.

4140-4146 Dolomite, light brownish gray (5YR 6/1), finely to medium crystalline.

4146-4149 Dolomite, very light gray (N8), finely crystalline; abundant white to milky chert.

4149-4153 Dolomite, very light gray (N8), finely crystalline, with abundant milky chert.

4153-4158 Dolomite, light gray (N7), finely crystalline.

4158-4162 Like 4153-4158.

4162-4166 Like 4158-4162.

4166-4171 Like 4162-4166 with white chert.

4171-4176 Like 4166-4171 with small amount of dolomite, light gray (N7), dense.

4176-4181 Like 4171-4176.

- 4181-4185 Dolomite, very light gray (N8), finely crystalline.
- 4185-4190 Dolomite, light gray (N7), with brownish tint, finely crystalline.
- 4190-4195 Like 4185-4190.
- 4195-4202 Like 4190-4195.
- 4202-4207 Like 4195-4202.
- 4207-4211 Like 4202-4207.
- 4211-4217 Dolomite, very light gray (N8), very finely crystalline.
- 4217-4219 Dolomite, very light gray (N8) to light gray (N7), finely to medium crystalline, with abundant white chert.
- 4219-4220 Like 4217-4219.
- 4223-4228 Dolomite, very light gray (N8), finely to medium crystalline, with few well rounded quartz grains.
- 4228-4233 Like 4223-4228.
- 4233-4238 Dolomite, white (N9), finely crystalline.
- 4238-4243 Dolomite, light gray (N7), with brownish tint, finely to medium crystalline, with scattered pyrite.
- 4243-4247 Like 4238-4243, with abundant light gray (N7), chert.
- 4247-4253 Dolomite, white (N9) to light gray (N7), finely to medium crystalline, scattered pyrite; and small amount of shale, medium gray (N5), dolomitic.
- 4253-4259 Dolomite, like 4247-4253, with abundant white chert.
- 4259-4261 Dolomite, white (N9) to light gray (N7) with slight brownish tint, finely to medium crystalline; with scattered white chert.
- 4261-4265 Like 4259-4261.
- 4265-4269 Like 4261-4265.
- 4269-4277 Dolomite, light brownish gray (5YR 6/1), medium crystalline, scattered pyrite; with some dolomite, white (N9), medium to coarsely crystalline.
- 4277-4283 Dolomite, white (N9), medium crystalline, with abundant well rounded quartz grains, and white oolitic chert; also thin bed of shale, medium light gray (N6) to medium dark gray (N4) fissile, contorted.

- 4283-4288 Dolomite, white (N9), medium crystalline; and white chert.
- 4288-4293 Dolomite, light gray (N7) with slight brownish tint, finely crystalline.
- 4293-4297 Dolomite, white (N9) to medium gray (N5), medium crystalline, argillaceous.

Chepultepec Dolomite - 564'

- 4297- ? Sandstone, white (N9), medium-grained, rounded, well sorted, slightly porous, dolomitic, cement contains abundant silt-size quartz grains, 90% quartzose.
- 4297-4301 Limestone, medium gray (N5) with slight brownish tint, dense; shale, medium light gray (N6), siliceous, contorted, abundant brown mineral, appears slickensided; and shale, medium dark gray (N3); fissile, carbonaceous.
- 4301-4304 Dolomite, white (N9), medium crystalline; abundant well rounded quartz grains.
- 4304-4307 Like 4301-4307 with abundant white chert.
- 4307-4311 Dolomite, light gray (N7), with slight brownish tint, medium crystalline.
- 4311-4314 Like 4307-4311.
- 4314-4320 Dolomite, white (N9), very finely crystalline, with scattered well rounded quartz grains; and small amount of shale, medium gray (N5) to dark gray (N3), carbonaceous, fissile.
- 4320-4327 Like 4314-4320 with abundant white, oolitic, chert.
- 4327-4329 Like 4320-4327.
- 4329-4331 Like 4327-4329.
- 4331-4335 Dolomite, white (N9), medium to coarsely crystalline, with abundant well rounded quartz grains.
- 4335-4342 Dolomite, very light gray (N8), finely to medium crystalline.
- 4342-4346 Like 4335-4342.
- 4346-4350 Dolomite, white (N9), finely crystalline with abundant quartz grains.
- 4350-4354 Dolomite, very light gray (N8), medium crystalline, scattered quartz grains.

- 4354-4358 Like 4350-4354.
- 4358-4363 Like 4354-4358.
- 4363-4366 Like 4358-4363.
- 4366-4367 Shale, medium gray (N5) to dark gray (N3), fissile, carbonaceous, with abundant coaly material.
- 4367-4373 Dolomite, white (N9), finely to medium crystalline with scattered grains; and limestone, medium gray (N5), with brownish tint, dense; also few chips bentonite (cavings?).
- 4373-4377 Like 4367-4373.
- 4377-4379 Siltstone, brownish gray (5YR 4/1), dolomitic, sandy.
- 4379-4382 Dolomite, white, (N9) medium crystalline, abundant quartz grains.
- 4382-4387 Dolomite, very light gray (N8) with slight brownish tint, finely to medium crystalline.
- 4387-4392 Dolomite, light brownish gray (5YR 4/1), very finely crystalline.
- 4392-4393 Dolomite, very light gray (N8), finely crystalline, with abundant quartz grains.
- 4393-4394 Like 4392-4393.
- 4394-4398 Like 4393-4394.
- 4398-4402 Like 4394-4398 with abundant white to medium light gray chert.
- 4402-4404 Like 4398-4402; with dolomite, very light gray (N8), very finely crystalline.
- 4404-4407 Dolomite, medium light gray (N6), finely crystalline, argillaceous; with small amount of shale, medium dark gray (N4), dolomite.
- 4407-4410 Like 4404-4407.
- 4410-4412 Sandstone, white (N9), medium-grained, rounded, well sorted, slightly porous, dolomitic, 90% quartzose; and white oolitic chert.
- 4412-4417 Like 4410-4412.
- 4417-4419 Dolomite, very light gray (N8), finely crystalline.
- 4419-4423 Dolomite, light gray (N7), with brownish tint, medium crystalline.
- 4423-4425 Shale, medium dark gray (N4), fissile, carbonaceous.
- 4425-4433 Dolomite, light gray (N7), to medium gray (N5), with brownish tint, medium crystalline, argillaceous.

VDMR Well No. 44

- 4433-4435 Dolomite, brownish gray (5YR 4/1), medium crystalline, argillaceous; and shale, medium dark gray (N4) to dark gray (N3), fissile; with some coaly material.
- 4435-4440 Like 4433-4435.
- 4440-4445 Like 4435-4440.
- 4445-4448 Dolomite, very light gray (N8), finely to medium crystalline, with abundant white chert.
- 4448-4451 Like 4445-4448.
- 4451-4455 Dolomite, light gray (N7), medium crystalline, with scattered quartz grains.
- 4455-4460 Dolomite, white (N9), very finely crystalline, with small amount of white chert.
- 4460-4463 Dolomite, white (N9), finely crystalline.
- 4463-4466 Like 4460-4463.
- 4466-4471 Dolomite, very light gray (N8), with slight brownish tint, finely to medium crystalline, with abundant quartz grains.
- 4471-4475 Like 4466-4475 with brownish gray chert; and medium dark gray (N4), fissile shale.
- 4475-4478 Dolomite, very light gray (N8), finely crystalline.
- 4478-4482 Like 4475-4478.
- 4482-4485 Like 4478-4482.
- 4485-4488 Dolomite, very light gray (N8), very finely crystalline; with shale, medium gray (N5), silty to dark gray (N3), carbonaceous.
- 4588-4591 Like 4485-4488 with some medium light gray (N6), chert.
- 4491-4496 Dolomite, white (N9), very finely to finely crystalline, scattered pyrite and dolomite, medium gray (N5), very finely crystalline.
- 4496-4500 Dolomite, light gray (N7) with brownish tint, finely to medium crystalline.
- 4500-4504 Dolomite, white (N9), very finely crystalline; with small amount of shale, grayish black (N2), fissile, carbonaceous?
- 4504-4506 Like 4500-4504 with some white chert.

- 4506-4510 Like 4504-4506.
- 4510-4514 Dolomite, very light gray (N8), finely crystalline, and oolitic chert, white, mealy to milky.
- 4514-4518 Like 4510-4514.
- 4518-4523 Dolomite, medium dark gray (N4) with slight brownish tint, medium crystalline, argillaceous.
- 4523-4526 Like 4518-4523.
- 4526-4530 Dolomite, brownish gray (5YR 4/1), very finely crystalline, argillaceous.
- 4530-4532 Dolomite, white (N9) to medium light gray (N6), very finely crystalline, with scattered quartz grains, and few chips of medium gray chert.
- 4532-4536 Dolomite, brownish gray (5YR 4/1), finely to medium crystalline.
- 4536-4546 Dolomite, very light gray (N8), finely crystalline.
- 4546-4551 Dolomite, light gray (N7), with brownish tint, medium crystalline.
- 4551-4554 Dolomite, brownish gray (5YR 4/1), argillaceous, medium crystalline; dolomite, light gray (N7), dense to very finely crystalline; and shale, medium dark gray (N4), silty, micaceous, fissile.
- 4554-4558 Like 4551-4554.
- 4558-4560 Dolomite, white (N9), very finely crystalline; with small amount of limestone, medium light gray (N6), dense.
- 4560-4564 Dolomite, light brownish gray (5YR 6/1), finely crystalline; and shale, dark gray (N3), carbonaceous, fissile, slickensided.
- 4564-4566 Dolomite, light brownish gray (5YR 6/1), to brownish gray (5YR 4/1), very finely crystalline, with scattered pyrite crystals.
- 4566-4570 Like 4564-4566.
- 4570-4572 Dolomite, light brownish gray (5YR 6/1), finely crystalline, with scattered oolitic chert; and shale, dark gray (N3), carbonaceous, fissile.
- 4570-4575 Dolomite, white (N9), very finely to finely crystalline; with scattered quartz grains.
- 4575-4578 Like 4570-4575.

4578-4580 Like 4575-4578.

4580-4585 Dolomite, light gray (N7), with brownish tint, very finely crystalline.

4585-4591 Dolomite, white (N9), very finely crystalline, with scattered quartz grains.

4591-4596 Dolomite, brownish gray (5YR 4/1), finely to medium crystalline, argillaceous; with small amount of shale, dark gray (N3), carbonaceous, fissile.

4596-4599 Like 4591-4596.

Steel Line Measurement: 4608'

4608-4611 Like 4596-4599.

4611-4616 Dolomite, white (N9), to medium light gray (N6), very finely crystalline.

4616-4620 Like 4611-4616.

4620-4623 Like 4616-4620.

4623-4625 Like 4620-4623.

4625-4627 Like 4623-4625.

4627-4629 Like 2625-2627.

4629-4632 Like 4627-4629.

4632-4634 Dolomite, light gray (N7), finely crystalline, with small amount of calcite.

4636-4636 Like 4632-4634.

4636-4639 Like 4634-4636.

4639-4642 Like 4636-4639.

4642-4645 Like 4639-4642.

4645-4646 Dolomite, brownish gray (5YR 4/1), dense to finely crystalline, with small amount of calcite, white, medium crystalline

4646-4649 Dolomite, white (N9) to light gray (N7), with brownish tint, finely crystalline.

4649-4653 Dolomite, medium dark gray (N4), finely crystalline, argillaceous; with small amount brown chert.

- 4653-4656 Like 4649-4653.
- 4656-4659 Dolomite, light gray (N7) to brownish gray (5YR 4/1), finely crystalline, with small amount of brown chert.
- 4659-4661 Like 4656-4659.
- 4661-4663 Chert, light brownish gray (5YR 4/1), oolitic; and shale, dark gray (N3), carbonaceous, fissile.
- 4663-4667 Dolomite, very light gray (N8) to medium light gray (N6), finely crystalline.
- 4667-4670 Dolomite, very light gray (N8), very finely crystalline.
- 4670-4674 Dolomite, light brownish gray (5YR 6/1), finely crystalline; with small amount of chert, light brownish gray (5YR 4/1).
- 4674-4679 Like 4670-4674.
- 4679-4684 Dolomite, brownish gray (5YR 4/1), finely to medium crystalline, with small amount of light gray chert.
- 4684-4685 Dolomite, light gray (N7), with slight brownish tint, finely crystalline, and brownish gray (5YR 4/1), medium crystalline, with small amount of shale, grayish black (N2), carbonaceous, fissile.
- 4685-4687 Like 4684-4685 with chert, white to brownish gray, oolitic.
- 4687-4690 Dolomite, light gray (N7) to brownish gray (5YR 4/1), medium crystalline.
- 4690-4695 Dolomite, white (N9) to brownish gray (5YR 4/1), finely to medium crystalline, argillaceous.
- 4695-4698 Dolomite, brownish gray (5YR 4/1), argillaceous; and shale, dark gray (N3), carbonaceous.
- 4698-4700 Like 4695-4698.
- 4700-4702 Dolomite, very light gray (N8), very finely to finely crystalline, with abundant white to light gray chert; and shale, like 4698-4700.
- 4702-4705 Dolomite, light brownish gray (5YR 6/1), finely crystalline.
- 4705-4707 Chert, white (N9) to light gray (N7), oolitic.
- 4707-4720 Dolomite, white (N9) to light gray (N7), finely crystalline; and shale, dark gray (N3) to black, carbonaceous, fissile.

- 4720-4724 Dolomite, brownish gray (5YR 4/1), finely to medium crystalline, argillaceous.
- 4724-4727 Dolomite, very light gray (N8) to medium light gray (N6) with brownish tint, finely crystalline, with small amount of light brownish gray chert.
- 4747-4736 Like 4724-4727.
- Steel Line Measurement: 4736'.
- 4736-4739 Dolomite, brownish gray (5YR 4/1), finely crystalline, argillaceous; and shale, grayish black (N2), carbonaceous.
- 4739-4741 Like 4736-4739.
- 4741-4745 Like 4739-4741.
- 4745-4751 Dolomite, light brownish gray (5YR 6/1), finely crystalline.
- 4751-4753 Dolomite, very light gray (N8), finely crystalline; and light brownish gray (5YR 6/1), dense to very finely crystalline.
- 4753-4757 Dolomite, brownish gray (5YR 4/1), dense to finely crystalline, argillaceous.
- 4747-4760 Like 4753-4757.
- 4760-4766 Dolomite, white (N9), medium crystalline with small amount of white chert.
- 4766-4771 Dolomite, very light gray (N8), very finely crystalline, and white oolitic chert.
- 4771-4776 Like 4766-4771.
- 4776-4783 Dolomite, very light gray (N8), medium crystalline; and white chert.
- 4783-4786 Like 4776-4783.
- 4786-4791 Like 4783-4786.
- 4791-4795 Like 4786-4791.
- 4795-4800 Like 4791-4795.
- 4800-4802 Dolomite, white (N9) to very light gray (N8), very finely crystalline.
- 4802-4804 Like 4800-4802.

VDMR Well No. 44

- 4804-4807 Like 4802-4804.
- 4807-4811 Dolomite, light brownish gray (5YR 6/1), to brownish gray (5YR 4/1), finely crystalline.
- 4811-4815 Like 4807-4811, with abundant shale, grayish black (N2), carbonaceous, fissile.
- 4815-4817 Dolomite, very light gray (N8), finely to medium crystalline; and shale, medium gray (N5), slightly dolomitic.
- 4817-4821 Like 4815-4817.
- 4821-4822 Shale, medium dark gray (N4) to grayish black (N2), carbonaceous, fissile.
- 4822-4824 Dolomite, medium light gray (N6) with slight brownish tint, very finely to finely crystalline.
- 4824-4827 Dolomite, very light gray (N8), very finely crystalline.
- 4827-4830 Dolomite, brownish gray (5YR 4/1), very finely to finely crystalline, argillaceous.
- 4830-4834 Dolomite, very light gray (N8), very finely crystalline.
- 4834-4835 Like 4830-4834.
- 4835-4836 Like 4834-4835 with abundant shale, grayish black (N2), carbonaceous, fissile.
- 4836-4837 Like 4835-4836.
- 4837-4841 Dolomite, brownish gray (5YR 4/1), finely crystalline.
- 4841-4844 Like 4837-4841 with abundant shale, medium dark gray (N4), fissile.
- 4844-4845 Like 4841-4844.
- 4845-4849 Like 4844-4845.
- 4849-4852 Dolomite, very light gray (N8), very finely to finely crystalline, with abundant white chert.
- 4852-4856 Like 4849-4852.
- 4856-4861 Dolomite, light gray (N7), with slight brownish tint, finely to medium crystalline.