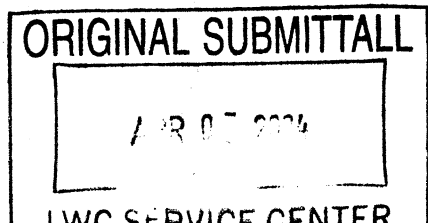


LITHOLOGY LOG FOR LM-7733  
 PINEWOODS WTP EXPLORATORY WELL  
 NE SE SEC.25 T46S R25E

APPLICATION NUMBER

040401-15

Depth	Lithology
0' - 1'	Sand, dark yellowish brown (10YR 4/2), fine to medium grained, subangular to subrounded, silty, clay and organics
1' - 11'	Limestone, grayish yellow (5Y 8/4), biomicritic, abundant shell fragments, fair moldic porosity, fair apparent permeability
11' - 13'	Clay, pale olive (10Y 6/2), sticky, some fine grained quartz sand, subangular to subrounded
13' - 15'	Limestone, dusky yellow (5Y 6/4), biomicritic, abundant shell fragments, fair to low moldic porosity, fair apparent permeability, very hard drilling
15' - 20'	Limestone, very pale orange (10YR 8/2), biomicritic, common shell fragments, fair moldic porosity, fair apparent permeability
20' - 32'	Limestone, yellowish gray (5Y 7/2), biomicritic, some shell fragments, minor sparite, fair moldic porosity, fair apparent permeability
32' - 35'	Clay, yellowish gray (5Y 7/2), soft, some phosphatic sands, minor very fine grained quartz sand
35' - 55'	Clay, greenish gray (5GY 6/1), soft, sticky, trace fine phosphate sands
55' - 60'	Clay, greenish gray (5GY 6/1), soft, sticky, some fine phosphate sands and phosphate granules, well rounded
60' - 84'	Clay, greenish gray (5GY 6/1), stiff, sticky, some fine phosphate sands
84' - 108'	Limestone, yellowish gray (5Y 7/2), biomicritic, some shell fragments, fair to good moldic porosity, fair to good apparent permeability
108' - 110'	Sandstone, yellowish gray (5Y 7/2), fine to medium grained, subangular to subrounded, moderate sphericity, some shell fragments, minor sparite, fair moldic porosity, fair apparent permeability
110' - 115'	Sandstone, yellowish gray (5Y 7/2), fine to medium grained, subangular to subrounded, moderate sphericity, some shell fragments, minor sparite, trace fine to medium phosphate sands and granules, fair moldic porosity, fair apparent permeability
115' - 143'	Sandstone, yellowish gray (5Y 7/2), fine to medium grained, subangular to subrounded, moderate sphericity, common shell fragments, trace fine to medium phosphate sands and granules, fair moldic porosity, fair apparent permeability
143' - 145'	Clay, greenish olive (10Y 4/2), soft, common to abundant shell fragments
145' - 147'	Clay, pale greenish yellow (10Y 8/2), soft, common to abundant shell fragments
147' - 158'	Shell hash, pale greenish yellow (10Y 8/2), abundant clay, soft
158' - 175'	Clay, pale greenish yellow (10Y 8/2), soft, common to abundant shell fragments
175' - 180'	Clay, pale greenish yellow (10Y 8/2), soft, common to abundant shell fragments, some phosphate granules and fine to medium phosphate grains
180' - 190'	Marl, olive gray (5Y 6/1), stiff, sticky, some shell fragments, some phosphate granules, fine to medium phosphate sands, minor limestone fragments- biomicritic, fair to good porosity, fair to good apparent permeability
190' - 220'	Clay, dark greenish gray (5 GY 4/1), stiff, sticky, some shell fragments and phosphate granules
220' - 258'	Limestone, very light gray (N8), biomicritic, some shell fragments, common to abundant fine to medium grained phosphate sands, fair moldic porosity, fair to good apparent permeability
258' - 280'	Clay, light olive gray (5Y 6/1), soft, abundant fine phosphate sands
280' - 286'	Limestone, very light gray (N8), biomicritic, some shell fragments, common fine grained phosphate sands, fair moldic porosity, fair to low apparent permeability
286' - 358'	Limestone, yellowish gray (5Y 8/1), biomicritic, some shell fragments, common fine grained phosphate sands, fair moldic porosity, fair to low apparent permeability
358' - 387'	Clay, pale olive (10Y 6/2), sticky, some fine grained phosphate sands
387' - 442'	Limestone, pale greenish yellow (10 Y 8/2), biomicritic, common shell fragments, minor fine phosphate sands, fair moldic porosity, fair apparent permeability
442' - 451'	Clay, pale greenish yellow (10Y 8/2), soft, abundant fine phosphate sands, common shell fragments last 5'



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Depth	Lithology
451' - 462'	Limestone, pale greenish yellow (10 Y 8/2), biomicritic, common shell fragments, minor phosphate sands, fair moldic porosity, fair apparent permeability
462' - 486'	Clay, pale olive (10Y 6/2), sticky, soft increasingly stiffer with depth, some fine phosphate sands, slow drilling
486' - 493'	Limestone, grayish yellow (5Y 8/4), biomicritic, some shell fragments, fair to good moldic porosity, fair apparent permeability
493' - 522'	Marl, yellowish gray (5Y 7/2), soft, abundant shell fragments, abundant phosphate granules and sands
522' - 532'	Limestone, yellowish gray (5Y 7/2), biomicritic, some shell fragments, minor fine phosphate sands, fair moldic porosity, fair apparent permeability
532' - 535'	Marl, pale olive (10Y 6/2), soft, sticky, some shell and limestone (as above) fragments, some phosphatic granules
535' - 542'	Limestone, yellowish gray (5Y 7/2), biomicritic, some shell fragments, some fine - medium sands, subangular to subrounded, well sorted, some fine to medium phosphate sands, good moldic porosity, fair apparent permeability
542' - 554'	Marl, yellowish gray (5Y 7/2), soft, abundant shell fragments, abundant phosphate granules and sands
554' - 555'	Limestone, light olive gray (5Y 5/2), biomicritic, very hard, good moldic porosity, good apparent permeability
555' - 565'	Limestone, light olive gray (5Y 5/2), biomicritic, hard, some sucrosic dolomite, good moldic porosity, good apparent permeability
565' - 568'	Limestone, light olive gray (5Y 5/2), biomicritic, some sucrosic dolomite, trace soft clays, good moldic porosity, good apparent permeability
568' - 588'	Limestone, light olive gray (5Y 5/2), biomicritic, hard, some sucrosic dolomite, good moldic porosity, good apparent permeability (1' void from 578' - 579')
588' - 598'	Limestone, yellowish gray (5Y 8/1), biomicritic, some dolomite, some very coarse grained phosphate sands and phosphate granules, fair to good moldic porosity, fair apparent permeability
598' - 600'	Limestone, yellow gray (5Y 7/2), biomicritic, some dolomite, fair to good moldic porosity, fair apparent permeability
600' - 608'	Limestone, very light gray (N8), biomicritic, highly fractured, abundant dolomite, good to excellent moldic porosity, good to excellent apparent permeability
608' - 612'	Limestone, light olive gray (5Y 5/2), biomicritic, very hard, abundant dolomite, some sucrosic dolomite, good to excellent porosity, good to excellent apparent permeability
612' - 615'	Dolomite, light olive gray (5Y 6/1), biomicritic, very hard, poor porosity, poor apparent permeability
615' - 626'	Limestone, yellowish gray (5Y 8/1), biomicritic, highly fractured, minor dolomite infill casts, fair to good moldic porosity, good apparent permeability
626' - 633'	Limestone, yellowish gray (5Y 8/1), biomicritic, minor dolomite, fair to good moldic porosity, good apparent permeability
633' - 643'	Marl, yellowish gray (5Y 8/1), biomicritic, abundant limestone fragments - as above, echinoderm fragments, some dolomite
643' - 644'	Dolomite, pale yellowish brown (10YR 6/2), micritic, poor porosity, poor permeability
644' - 663'	Marl, yellowish gray (5Y 8/1), biomicritic, abundant limestone fragments - as above (626' - 633'), some dolomite, some phosphate granules and fine to coarse sands
663' - 676'	Limestone, yellowish gray (5Y 8/1) biomicritic, some dolomite, minor very fine to coarse phosphate sands, rare sparite, excellent porosity, excellent apparent permeability
676' - 680'	Marl, yellowish gray (5Y 8/1), biomicritic, abundant limestone fragments - as above (663' - 676'), some dolomite, some phosphate granules and fine to coarse sands
680' - 687'	Limestone, yellowish gray (5Y 8/1), biomicritic, some dolomite, minor very fine to coarse phosphate sands, rare sparite, rare lime mud, excellent porosity, excellent apparent permeability

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Depth	Lithology
687' - 690'	Limestone, dusky yellow (5Y 6/4), biomicritic, excellent porosity, excellent apparent permeability
690' - 695'	Limestone, dusky yellow (5Y 6/4), biomicritic, very hard, some dolomite, some fine to coarse phosphate sands and granules, excellent porosity, excellent apparent permeability
695' - 702'	Marl, yellowish gray (5Y 8/1), biomicritic, abundant limestone fragments - as above (690' - 695'), some dolomite, some phosphate granules and fine to coarse sands
702' - 710'	Limestone, light brown (5YR 6/4), micritic-biomicritic, minor dolomite, rare phosphate granules, fair porosity, fair to poor apparent permeability
710' - 717'	Lime mud, white (N9), stiff, sticky, abundant phosphate granules and pebbles, minor shell fragments and limestone fragments as above
717' - 717.5'	Limestone, yellowish gray (5Y 8/1), biomicritic, good to excellent porosity, good to excellent apparent permeability
717.5' - 718'	Clay, dark greenish gray (5 GY 4/1), stiff, sticky
718' - 720'	Lime mud, white (N9), stiff, sticky, some shell fragments and limestone fragments as above
720' - 723'	Marl, yellowish gray (5Y 8/1), biomicritic, some phosphate granules and fine to coarse sands
723' - 726'	Lime mud, white (N9), stiff, sticky, some shell fragments and limestone fragments as above
726' - 728'	Limestone, yellowish gray (5Y 8/1), biomicritic, some dolomite, minor very fine to coarse phosphate sands, good porosity, good apparent permeability
728' - 755'	Limestone, yellowish gray (5Y 8/1), biomicritic - micritic, some dolomite, some lime mud, rare phosphate granules, excellent porosity, excellent apparent permeability
755' - 756'	Lime mud, white (N9), stiff, sticky
756' - 764'	Marl, yellowish gray (5Y 8/1), micritic, some lime mud, minor dolomite, minor green sticky clay
764' - 768'	Limestone, yellowish gray (5Y 8/1), biomicritic - biosparitic, abundant sparite, shell casts, good porosity, good apparent permeability
768' - 786'	Limestone, yellowish gray (5Y 8/1), biomicritic - biosparitic, abundant sparite, some dolomite, minor lime mud, shell casts, good porosity, good apparent permeability
786' - 805'	Marl, yellowish gray (5Y 8/1), biomicritic, some fine grained dolomite, some lime mud
805' - 843'	Limestone, grayish yellow (5Y 8/4), biomicritic - calcarenitic, some lime mud, rare mold casts, sulfur smell, excellent intergranular porosity, excellent apparent permeability
843' - 854'	Limestone, grayish yellow (5Y 8/4), biomicritic - calcarenitic, some lime mud, common shell casts and fragments, some coral, sulfur smell, excellent intergranular porosity, excellent apparent permeability
854' - 855'	Marl, yellowish gray (5Y 8/1), biomicritic, abundant limestone fragments as above
855' - 858'	Lime mud, very light gray (N8), soft, sticky, some limestone fragments as above, minor shell
858' - 863'	Limestone, yellowish gray (5Y 7/2), biomicritic, good to excellent porosity, good to excellent apparent permeability
863' - 866'	Marl, yellowish gray (5Y 7/3), biomicritic, some lime mud
866' - 876'	Limestone, yellowish gray (5Y 7/2), biomicritic, good porosity, good apparent permeability
876' - 878'	Marl, yellowish gray (5Y 7/3), biomicritic, common lime mud
878' - 883'	Lime mud, yellowish gray (5Y 7/2), soft, sticky
883' - 888'	Marl, yellowish gray (5Y 7/3), biomicritic, common lime mud
888' - 893'	Lime mud, very light gray (N8), soft, sticky, some limestone fragments as above, minor shell fragments
893' - 906'	Marl, as 883' - 888'
906' - 912'	Marl, medium light gray (N6), micritic, abundant limestone, some lime mud
912' - 916'	Lime mud, yellowish gray (5Y 7/2), abundant shell fragments, abundant micritic limestone
916' - 918'	Marl, as 906' - 912'
918' - 927'	Lime mud, as 912' - 916'
927' - 930'	Marl, as 906' - 912'
930' - 936'	Lime mud, as 912' - 916'

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Depth	Lithology
936' - 942'	Limestone, yellowish gray (5Y 7/2), biomicritic, good porosity, good apparent permeability
942' - 943'	Clay, dark yellowish brown (10YR 4/2), minor shell fragments
943' - 948'	Limestone, yellowish gray (5Y 7/2), biomicritic, good porosity, good apparent permeability