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no cards

Collier Co.
GEOLOGIST'S LOG OF MC-5000

TEST well 1
SF 100694 B
Kohlmeier # 235.

MC-5000

S. 35 Twp 48 Rge 26

Depth (ft)

needs detailed picks

Lithology

0-2	Sand, light brownish-gray (5 YR 6/1), fine grained, subangular to subrounded.
2-3.5	Sand, pale yellowish-brown (10 YR 6/2), fine grained, subangular to subrounded, 30% shell fragments.
3.5-6	Limestone, very pale orange (10 YR 8/2) to pale yellowish-brown (10 YR 6/2), micrite, hard, moderate to high apparent porosity, high apparent permeability.
6-10	Limestone, light olive-gray (5 Y 6/1) to very pale orange (10 YR 8/2), micrite, hard, very high apparent porosity, high apparent permeability.
10-16	Limestone, yellowish-gray (5 Y 8/1), biomicrite, moderately hard, very high apparent porosity, high apparent permeability.
16-18	Marl, very light gray (N8), soft, sticky, very slightly cohesive with limestone (20%) as above.
18-44	Limestone, very pale orange (10 YR 8/2) to light olive-gray (5 Y 6/1), biomicrite, hard, sandy, high to very high apparent porosity, high permeability. Limestone contains ~ 30% slightly phosphatic sand. Accessory constituents: shell (10-15%). Limestone predominately very pale orange (10 YR 8/2) from 25 to 44 feet.
44-62	Limestone, very pale orange (10 YR 8/2), calcarenite (biosparite), sandy (quartz), slightly phosphatic, moldic, high to very high apparent permeability. Accessory constituents: 50% shell interbedded with limestone, medium light gray (N6), calcarenite, sandy (quartz), phosphatic, moldic porosity, high to very high apparent permeability. Accessory constituents, 50% shell, phosphate grains (2mm size) noted at 50 feet.
62-72	Limestone, very pale orange (10 YR 8/2), calcarenite (biosparite), sandy (quartz), slightly phosphatic, high to very high moldic porosity, high apparent permeability. Accessory constituents: Shell 50%, 2mm phosphate particles 1-2%.

Continued:

GEOLOGIST'S LOG OF MC-5000

<u>Depth (feet)</u>	<u>Lithology</u>
72-74	Marl, yellowish-gray (5 Y 7/2), slightly silty, soft, sticky, very low permeability. Accessory constituents: Shell 30%, limestone 30% (as above).
74-102	Limestone, pale greenish-yellow (10 Y 8/2) to pale olive (10 Y 6/2), biomicrite (biosparite), moderately hard, slightly phosphatic, very high moldic porosity, very high apparent permeability. Accessory constituents: Phosphate (2 mm particles) (2-5%), shell fragments (40%).
102-175	Limestone, yellowish-gray (5 Y 7/2), calcarenite, hard, abundant molds and casts, very high moldic porosity, high apparent permeability.
175-194	Limestone, greenish-gray (5 GY 6/1), calcarenite (biosparite), hard, slightly phosphatic, with high moldic porosity and high apparent permeability. Limestone is softer from 194 feet down and contains more abundant shell and fossil fragments.
194-227	Limestone, greenish-gray (5 GY 6/1), calcarenite, hard, phosphatic, with high moldic porosity and high apparent permeability, interbedded with sand, yellowish-gray (5 Y 7/2), fine grained, soft, phosphatic, subangular to subrounded particles. Accessory constituents: Shell (50%) from 215 to 227 feet, trace amounts of sandy phosphatic clay at 220 feet.
227-234	Limestone, greenish-gray (5 GY 6/1), sandy (quartz), hard, phosphatic, very high moldic porosity, high apparent permeability. Accessory constituents: 2mm phosphate grains 15%, shell 5-10%.
234-262	Limestone, very pale orange (10 YR 8/2), biomicrite, moderately hard, phosphatic, abundant molds and casts, abundant shell (40%), very high moldic porosity, high apparent permeability. The limestone contains occasional 2-5 mm phosphate particles between 245 to 262 feet. Lens of sandy clay, very pale orange (10 YR 8/2) at 248 feet.
262-268	Limestone, yellowish-gray (5 Y 8/1) to greenish-gray (5 GY 6/1), biosparite to biomicrite, phosphatic, abundant shell 40%,

Continued:

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Depth (feet)

Lithology

very high apparent moldic porosity, high apparent permeability.

268-285

Clay, yellowish-gray (5 Y 8/1), sandy, soft, phosphatic, sticky, low apparent porosity, very low permeability. Accessory constituents: Limestone as above 5%, shell fragments 5%.

285-292

Clay, greenish-gray (5 GY 6/1), stiff, phosphatic, cohesive, low apparent porosity, very low permeability. Accessory constituents: Phosphatic limestone (10%) from above. Band of clay, olive-gray (5 Y 4/1) to brownish-gray (5 YR 4/1) at 289 feet containing 10% shell and ~25% limestone. The clay contains 35% limestone from 290 to 292 feet. The limestone at this depth is greenish-gray (5 GY 6/1), biomicrite, hard, with fair to high porosity and high permeability.

292-300

Clay (50%), greenish-gray (5 GY 6/1), stiff, cohesive, phosphatic, low apparent porosity, very low permeability, and Limestone (50%), very pale orange (10 YR 8/2), phosphatic biomicrite interbedded with clay, pale orange (10 YR 8/2) to light greenish-gray (5 GY 8/1), soft, sticky, phosphatic, with low to moderate porosity.

300-305

Clay, yellowish-gray (5 Y 7/2) to pale olive (10 Y 6/2), stiff, sandy, phosphatic, with very low apparent permeability. Accessory constituents: Limestone (45%), pale olive (10 Y 6/2) micrite, hard, phosphatic, very high apparent porosity, high apparent permeability.

305-325

Limestone (70%), light greenish-gray (5 GY 8/1) to greenish-gray (5 GY 6/1), micrite, moderately hard, phosphatic and clay (30%), light greenish-gray (5 GY 8/1), soft, sticky, phosphatic with low apparent permeability. Accessory constituents: phosphate grains 2mm (5%).

325-340

Clay, pale olive (10 Y 6/2) to light olive-gray (5 Y 5/2), sticky, cohesive, phosphatic with low apparent porosity and limestone (10%), pale greenish-yellow (10 Y 8/2), biomicrite, phosphatic, with high to very high apparent porosity and high apparent permeability.

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GEOLOGIST'S LOG OF MC-5000

<u>Depth (feet)</u>	<u>Lithology</u>
340-345	Clay, dark greenish-gray (5 GY 6/1), soft to firm, phosphatic, low apparent porosity and permeability. Accessory constituents: Phosphate grains 1-2 mm (5%).
345-379	Clay, greenish-gray (5 G 6/1), firm to soft, cohesive, phosphatic, low apparent porosity, very low permeability. Accessory constituents: Limestone, very pale orange (10 YR 8/2), biomicrite, phosphatic, very high apparent porosity, and high apparent permeability.
379	Limestone, yellowish-gray (5 Y 8/1) to light gray (N7), biomicrite, phosphatic, (10-15% 1-2 mm grains), very high moldic porosity, very high apparent permeability.
405-417	Limestone (30%), very pale orange (10 YR 8/2), slightly phosphatic, hard, micrite, high to very high apparent permeability, high porosity and (40%) limestone, very light gray (N8) to light greenish-gray (5 GY 8/1), biomicrite, phosphatic, hard, high moldic porosity, very high permeability, contain molds and casts, 25% shell, 5% very coarse sand to granule-sized phosphate grains.
417-423	Dolomite (100%), pale olive (10 Y 6/2), sucrosic, slightly phosphatic, excellent porosity, very high permeability.
423-425	Dolomite (80%), pale olive (10 Y 6/2), sucrosic, moderately hard, as above, and limestone (20%), very light gray (N8), biomicrite, phosphatic, moderately hard, very high apparent permeability, excellent porosity.
425-427	Sand, pale greenish-yellow, very fine grained, unconsolidated?, phosphatic, subangular to subrounded particles.
427-429	Limestone, pale greenish-yellow, calcarenite (poorly cemented biosparite), sandy (quartz), abundant (30%) fine shell fragments, phosphatic, fairly soft, high porosity, high apparent permeability, contains occasional (10%) very light gray phosphatic limestone.

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Depth (feet)

Lithology

429-460

Limestone, yellowish-gray (5 Y 8/1), to very light gray (N8), biomicrite, moderately hard, slightly phosphatic, high apparent porosity, excellent permeability, abundant shell (40%), occasional (2%), 1-2mm phosphatic grains.

460-502

Limestone, yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), soft, phosphatic, abundant shell (30%), occasional grains of phosphate 2%, excellent moldic porosity, very high apparent permeability, abundant echinoderm fragments.

502-515

Limestone, yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), moderately soft, abundant (15%) shell fragments, slightly phosphatic, abundant fossils - fossiliferous, very high to excellent porosity, very high apparent permeability.

151-516

Limestone, light olive-gray (5 Y 6/1), biomicrite, phosphatic, moderately soft, very high apparent porosity, high to very high apparent permeability, accessory constituents, shell fragments (40%), phosphatic grains (2%), 1-2 mm. Abundant (50%) shell fragments at 516-517, traces (5%) of yellowish-gray (5 Y 8/1), biomicritic limestone, as above.

516-519

Limestone, yellowish-gray (5 Y 8/1), biomicrite, slightly phosphatic (2% sand-sized grains), moderately hard, abundant shell fragments, very high apparent porosity, very high to excellent permeability. Limestone has a higher moldic porosity (10%) at 519 feet.

519-521

Limestone, pale olive (10 Y 6/2), biomicrite, moderately hard, phosphatic, very high porosity, very high permeability, 20% shell fragments, 5% phosphate.

521-529

Clay (25%), pale olive (10 Y 6/2) to grayish-olive (10 Y 6/2), soft to stiff, phosphatic, cohesive, high apparent porosity, low apparent permeability, approximately 2% of clay is in places partially lithified.
Limestone (70%), pale olive (10 Y 6/2), biomicrite, as above, 5% shell fragments.

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GEOLOGIST'S LOG OF MC-5000

<u>Depth (feet)</u>	<u>Lithology</u>
529-533	Dolosilt, light olive-gray (5 Y 5/2), fine-grained texture, sucrosic, moderately soft, slightly phosphatic, very high apparent porosity, high apparent permeability.
533-540	Limestone, yellowish-gray (5 Y 8/1), to very light gray (N8), biomicrite, moderately hard, phosphatic, abundant shell (35%), very high moldic porosity, very high apparent permeability. Limestone becomes predominantly yellowish-gray at 539 feet with more abundant molds and casts.
540-544	Limestone (80%), yellowish-gray (5 Y 7/2), biomicrite, moderately hard, slightly phosphatic, very high apparent porosity and permeability. Limestone (20%), yellowish-gray (5 Y 7/2), micrite, moderately hard, very high apparent porosity and permeability.
544-549	Limestone, very light gray (N8), biomicrite, moderately hard to hard, phosphatic, abundant molds and casts, very high moldic porosity, very high apparent permeability.
549-554	Limestone, yellowish-gray (5 Y 7/2), to light olive-gray (5 Y 5/2), biomicrite, slightly phosphatic, moderately hard, very high moldic porosity, high apparent permeability.
554-561	Limestone, very light gray (N8), biomicrite, moderately hard, slightly phosphatic, very high moldic porosity, very high apparent permeability.
561-570	Limestone, very light gray (N8) to pale greenish-yellow (10 Y 8/2), calcarenite (poorly cemented biosparite), moderately soft, very high apparent porosity, slightly phosphatic, high apparent permeability.
570-576	Limestone, yellowish-gray (5 Y 7/2), biomicrite, moderately hard, slightly phosphatic, very high apparent porosity, high apparent permeability.
576-581	Limestone, very light gray (N8), biomicrite, slightly phosphatic, moderately hard, very high moldic porosity, high apparent permeability, abundant molds and casts.

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Depth (feet)

Lithology

- 581-591 Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2), biomicrite, moderately hard, slightly phosphatic, abundant (15%) coarse shell fragments, high apparent porosity and permeability.
- 591-615 Limestone (95%), yellowish-gray (5 Y 7/2), micrite, hard, phosphatic (5%), and, at 610 feet, marl, yellowish-gray (5 Y 7/2), soft, phosphatic (1-2% very coarse sand-sized grains).
- 615-618 Limestone (50%), pale olive (10 Y 6/2), soft, biomicrite, phosphatic, high apparent porosity, high permeability, 25% shell, 25% phosphate (very coarse sand-sized grains), 1% trace clay, pale olive (10 Y 6/2), soft, phosphatic.
- 618-621 Limestone (40%), light gray (N7), biomicrite, moderately hard, phosphatic (flecks of phosphate), high apparent porosity, high apparent permeability, 35% phosphate (very coarse sand-sized grains), 25% shell fragments.
- 621-623 Limestone, very pale orange (10 YR 8/2), biomicrite, hard, phosphatic (10% granule-sized grains), fossiliferous, high apparent porosity and permeability.
- 623-629 Clay (80%), olive-gray (5 Y 4/1), soft, phosphatic, and limestone (10%), as above, abundant (10-15%) very coarse sand-sized phosphate grains.
- 629-632 Limestone, pale olive (10 Y 6/2) to light olive-gray (5 Y 5/2), biomicrite, moderately hard, phosphatic, very high porosity and permeability, abundant 15% phosphate granules, abundant molds and casts of aragonitic fossils, limestone appears to be partially dolomitized (50%).
- 632-638 Limestone, pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2), biomicrite, moderately hard, phosphatic, very high apparent porosity and permeability, common (2-5%) very coarse sand-sized phosphate grains.
- 638-640 Limestone, yellowish-gray (5 Y 8/1), biomicrite, moderately hard, phosphatic, abundant (15%) very coarse sand to

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Depth (feet)

Lithology

- granule-sized phosphate grains (15%), very high apparent porosity and permeability.
- 640-645 Marl (10%), yellowish-gray (5 Y 8/1), soft, very low apparent permeability, moderate porosity, phosphatic, and limestone (90%), as above, yellowish-gray (5 Y 8/1), common (20%) bryozoans.
- 645-669 Limestone (45%), yellowish-gray (5 Y 8/1), biomicrite, moderately hard, fossiliferous, abundant (40%) bryozoan fragments, very high apparent porosity and permeability. Marl (50%), yellowish-gray (5 Y 8/1), very soft, common (5%) phosphate, very coarse sand-sized grains.
- 669-678 Limestone (70%), yellowish-gray (5 Y 7/2), biomicrite, moderately hard, abundant molds and casts, phosphatic (very coarse sand-sized grains), very high apparent porosity and permeability. Marl (30%), yellowish-gray, very soft, as above.
- 678-693 Marl (30%), yellowish-gray (5 Y 7/2), soft to firm, low to moderate apparent porosity, very low permeability, and limestone (70%), yellowish-gray (5 Y 7/2), biomicrite, moderately hard, high apparent porosity and permeability.
- 693-700 Clay (80%), dark greenish-gray (5 G 4/1), soft to firm, phosphatic, moderate porosity, low apparent permeability, very low permeability. Limestone (15%), yellowish-gray (5 Y 7/2), as above. Marl (5%), yellowish-gray (5 Y 7/2), as above, with very coarse sand-sized phosphate grains. Trace amounts (1-2%) of pale olive limestone at 698 feet.
- 700-706 Limestone (70%), pale olive (10 Y 6/2), moderately soft, pelmicrite, slightly phosphatic, very high apparent porosity and permeability, limestone (10%), yellowish-gray (5 Y 7/2), pelmicrite, moderately hard, very high apparent porosity and permeability, common (5%) very coarse sand-sized phosphate grains. Marl (15%), yellowish-gray (5 Y 7/2), very soft, moderate apparent porosity, very low apparent permeability.
- 706-718 Limestone (85%), very pale orange (10 YR 8/2), to yellowish-gray (5 Y 7/2), biomicrite, moderately hard, slightly

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Depth (feet)

Lithology

- phosphatic, very high apparent porosity, very high apparent permeability. Marl (15%), yellowish-gray (5 Y 7/2), very soft.
- 718-721 Dolomite, light olive-gray (5 Y 6/1) to olive-gray (5 Y 4/1), sucrosic texture, sparry, calcitic, moderately hard, slightly phosphatic, moderate porosity, high apparent permeability.
- 721-728 Dolomite (80%), light olive-gray (5 Y 5/2) to moderate olive-brown (5 Y 4/4), phosphatic, moderately hard, sucrosic texture, crystalline, high porosity, high apparent permeability, limestone (15%), yellowish-gray (5 Y 7/2), calcarenite (biosparite), moderately hard, phosphatic, high apparent porosity and permeability. Common (5%) phosphate granules.
- 728-729 Limestone, yellowish-gray (5 Y 7/2), micrite, moderately hard, phosphatic, very high apparent porosity, high apparent permeability.
- 729-730 Dolomitic limestone (80%), light olive-gray (5 Y 5/2), sucrosic texture, moderately hard, phosphatic, limestone (20%), very light gray (N8), biomicrite, phosphatic, abundant molds and casts, high moldic porosity, very high permeability.
- 730-738 Dolomite (90-96%), light olive-gray (5 Y 5/2) to moderate olive-brown (5 Y 4/4), hard, sucrosic texture, slightly phosphatic, excellent porosity (vuggy), very high to excellent permeability, limestone (5-10%), very light gray (N8), as above.
- 738-745 Dolomite (100%), light olive-gray (5 Y 5/1), hard, sucrosic, phosphatic, excellent apparent porosity, very high apparent permeability, color change at 745 feet.
- 745-753 Dolomite (50%), light olive-gray (5 Y 5/2), cryptocrystalline, very hard, porous, high secondary porosity, very high apparent permeability and dolomitic limestone (50%), yellowish-gray (5 Y 7/2), as above, molds and casts, very hard crystalline texture, high secondary porosity, very high apparent permeability.

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<u>Depth (feet)</u>	<u>Lithology</u>
753-754	Limestone, yellowish-gray (5 Y 7/2), calcarenite sparite (peloids/bioclasts), moderately soft, very high apparent porosity and permeability.
754-755	Dolomite (50%), light olive-gray (5 Y 5/2), microsucrosic, very hard, very high apparent porosity, high to very high permeability, dolomitic limestone (50%), yellowish-gray (5 Y 7/2), very hard crystalline, very high secondary porosity, very high apparent permeability.
755-756	Limestone (50%), yellowish-gray (5 Y 7/2), phosphatic, calcarenite (very poorly cement bio/pelsparite), very soft, very high apparent porosity (intergranular) and permeability (50%). Limestone is a very poorly cemented carbonate sand.
756-759	Dolomite (75%), yellowish-gray (5 Y 7/2), microsucrosic, moderately hard, phosphate, abundant molds and casts, very high porosity (moldic) and very high apparent permeability, dolomite (25%), light olive-gray (5 Y 5/2), as above, harder from 757-759 feet, ~ 5% moderate yellowish-brown (10 YR 5/4) intermixed with above at 759 feet.
759-760	Dolomite, light olive-gray (5 Y 5/2), pale yellowish-brown (10 YR 6/2), microsucrosic, very hard, phosphatic, very high secondary porosity, moderate to high apparent permeability.
760-761	Limestone, yellowish-gray (5 Y 8/1), biomicrite, very hard, phosphatic, very high moldic porosity, moderate to high apparent permeability.
761-767	Dolomitic limestone, light olive-gray (5 Y 5/2), crystalline, very hard, phosphatic, low apparent porosity, moderate apparent permeability.
767-770	Limestone, yellowish-gray (5 Y 7/2), biomicrite, phosphatic, hard, abundant molds and casts, high moldic porosity, moderate to high apparent permeability.
770-780	Limestone (50%), yellowish-gray (5 Y 7/2), calcarenite (poorly cemented bio/pelsparite), moderately soft, slightly phosphatic, high apparent porosity, very high apparent permeability, ~40%

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- of this limestone partially dolomitized and dolomite (50%), light olive-gray (5 Y 6/1), sucrosic texture, moderately hard to hard, very high apparent porosity, moderate to high apparent permeability.
- 780-781 Carbonate sand, yellowish-gray (5 Y 7/2), unconsolidated or very poorly cemented, very fine grained, subangular to subrounded.
- 781-786 Dolomite, light olive-gray (5 Y 6/1), sucrosic texture, hard, slightly phosphatic, vuggy, abundant casts and molds, very high moldic porosity, moderate to high apparent permeability, dolomite (50%), yellowish-gray (5 Y 7/2), sucrosic texture, hard, vuggy, slightly phosphatic, very high apparent porosity, moderate to high apparent permeability.
- 786-788 Dolomite (50%), dusky yellow (5 Y 6/4) to light olive gray (5 Y 4/1) sucrosic texture, moderately hard to hard, phosphatic, very high apparent porosity, moderate to high apparent permeability. Limestone (50%), yellowish-gray (5 Y 7/2) calcarenite, (poorly cemented carbonate sand), sandy, moderately soft, very high apparent porosity, high apparent permeability.
- 788-790 Dolomite (30%), dusky yellow (5 Y 6/4) to light olive-gray, phosphatic, sucrosic texture, as above. Limestone (70%), very pale orange (10 YR 8/2), biomicrite, slightly phosphatic, moderately hard, very high apparent porosity and permeability.
- 790-797 Limestone (50%), yellowish-gray (5 Y 7/2), biomicrite, soft, marly, high apparent porosity. Marl (50%), yellowish-gray (5 Y 7/2), moderately soft, sticky, low apparent porosity.
- 797-804 Limestone, very light gray (N8), biomicrite, moderately hard, abundant molds and casts, high moldic porosity, very high apparent permeability, becoming light olive-gray (5 Y 6/1) at 799 feet.
- 804-812 Dolomite, greenish-gray (5 G 6/1), moderately hard, sucrosic texture, slightly phosphatic, high apparent porosity, moderate

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- to high apparent permeability. From 809-812 feet, dolomite, pale yellowish-brown (10 YR 6/2), crystalline texture, vuggy, hard, high apparent porosity, moderate to high apparent permeability.
- 812-813 Marl (80%), yellowish-gray (5 Y 7/2), soft, low porosity, very low permeability. Limestone (20%), yellowish-gray (5 Y 7/2), biomicrite, high apparent porosity.
- 813-814 Limestone, yellowish-gray (5 Y 7/2) to grayish-orange (10 YR 7/4), micrite, slightly phosphatic, moderately hard, high apparent porosity, high apparent permeability.
- 814-814.5 Clay, pale yellowish-brown (10 YR 6/2) to yellowish-gray (5 Y 7/2), soft, low porosity, very low permeability.
- 814.5-816 Limestone (90%), yellowish-gray (5 Y 7/2) to very light gray (N8), calcarenite (bio/pelsparite), moderately hard, high apparent porosity. Marl (10%), yellowish-gray (5 Y 7/2), soft, low apparent porosity.
- 816-831 Limestone (80%), very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2), biomicrite, moderately hard, phosphatic, high apparent moldic porosity, moderate to high apparent permeability. Fossils include bivalves, gastropods, and foraminifera. Limestone (20%), pale gray (N7), biomicrite from 821 to 831 feet.
- 831-841 Limestone (70%), yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite, moderately soft, high apparent porosity, marly. Marl (30%), yellowish-gray (5 Y 8/1), soft, slightly sticky, low apparent porosity, very low permeability.
- 841-853 Limestone (80%), yellowish-gray (5 Y 8/1), biomicrite, moderately soft to soft, high apparent porosity (moldic) and permeability. Fossils include bivalves (molds and casts) and foraminifera. Marl (20%), yellowish-gray (5 Y 8/1), soft, low to moderately apparent porosity, very low permeability.
- 853-855 Limestone, yellowish-gray (5 Y 8/1) to light gray (N8), biomicrite, moderately hard, abundant molds and casts of

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Depth (feet)

Lithology

- aragonitic fossils, phosphatic, high moldic porosity and (apparent) permeability.
- 855-859 Limestone, yellowish-gray (5 Y 8/1), calcarenite (biosparite), moderately hard, abundant molds and casts of mollusks, very high apparent permeability.
- 859-869 Limestone, pale yellowish-brown (10 YR 6/2), biomicrite, moderately hard, abundant molds and casts of mollusks, high apparent porosity (moldic) and permeability. Limestone (~25%), pale gray (N7), biomicrite.
- 869-874 Limestone (90%), yellowish-gray (5 YR 8/1), calcarenite (bio/pelsparite), moderately soft to moderately hard, high apparent porosity. Marl (10%), yellowish-gray (5 Y 8/1), soft, low porosity, very low permeability.
- 874-880 Limestone, yellowish-gray (5 Y 8/1), biomicrite, moderately hard, very high apparent moldic porosity, high apparent permeability.
- 880-881 Limestone, yellowish-gray (5 Y 8/1), calcarenite (bio/pelsparite), moderately hard, high apparent porosity (moldic and intergranular).
- 881-885 Marl, light gray (N8), soft to firm, cohesive, low apparent porosity, very low permeability.
- 885-916 Limestone (70%), yellowish-gray (5 Y 8/1), calcarenite (bio/pelsparite), moderately hard, high apparent moldic porosity. Marl (30%), yellowish-gray (5 Y 8/1), soft, low apparent porosity, very low permeability.
- 916-925 Limestone, light olive-gray (5 Y 6/1), calcarenite (biosparite), moderately hard to moderately soft, high apparent porosity, high to moderate apparent permeability. Marl (25%), yellowish-gray (5 Y 8/1), soft, low apparent porosity, very low permeability.
- 925-953 Limestone (75%), yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), moderately soft, high apparent porosity,

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- moderate permeability. Marl (20%), light olive-gray (5 Y 6/1), soft, low porosity, very low permeability. Clay (5%), pale olive (10 Y 6/2), soft to firm, partially lithified, low apparent porosity, very low permeability.
- 953-959 Limestone (60%), yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), moderately soft, high apparent porosity. Marl (25%), light olive-gray (5 Y 6/1), soft, low porosity, very low permeability. Clay (15%), light olive-gray (5 Y 6/1) to yellowish-gray (5 Y 8/1), soft, cohesive, low porosity.
- 959-963 Limestone (70%), yellowish-gray (5 Y 8/1), biomicrite, moderately soft to moderately hard, high apparent moldic porosity. Limestone (20%), yellowish-gray (5 Y 8/1), calcarenite, as above. Marl (10%), yellowish-gray (5 Y 8/1) to light olive-gray (5 Y 6/1), soft, low apparent porosity, very low permeability.
- 963-968 Limestone (90%), yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), moderately soft, fossiliferous, high apparent porosity, moderate permeability. Marl (10%), yellowish-gray (5 Y 8/1), soft, low porosity, very low permeability.
- 968-972 Limestone (10%), yellowish-gray (5 Y 7/2) to pale yellowish-brown, biomicrite, moderately hard, high apparent moldic porosity. Marl (30%), yellowish-gray (5 Y 7/2), soft to firm, cohesive, low apparent porosity, very low permeability. Limestone (60%), yellowish-gray (5 Y 7/2), calcarenite (biosparite), moderately hard to moderately soft, high apparent porosity.
- 972-975 Limestone (20%), yellowish-gray (5 Y 7/2), calcarenite (bio/pel sparite), moderately soft, high apparent porosity. Marl (10%), yellowish-gray (5 Y 8/2), soft, low porosity, very low permeability. Limestone (70%), pale yellowish-brown (10 YR 6/2), biomicrite, moderately hard, high moldic porosity.
- 975-1001 Limestone (90%), pale yellowish-brown (10 YR 6/2), calcarenite (biosparite), soft, high apparent porosity, common molds and casts of aragonitic fossils, minor echinoderm

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- fragments. Marl (10%), yellowish-gray (5 Y 7/2), soft, very low permeability.
- 1001-1012 Limestone (80%), very pale orange (10 YR 8/2), calcarenite (poorly cemented bio/pelsparite), moderately soft to moderately hard, high intergranular porosity. Marl (20%), pale olive (10 Y 6/2), soft, very low permeability.
- 1012-1014 Limestone (70%), grayish-orange (10 YR 7/4) to pale yellowish-brown (10 YR 6/2), calcarenite (poorly cemented bio/pelsparite), moderately hard to moderately soft, high intergranular porosity. Marl (30%), grayish-orange (10 YR 7/4), soft, low apparent porosity, very low permeability.
- 1014-1018 Limestone (80%), very pale orange (10 YR 8/2), calcarenite (poorly cemented bio/pelsparite), moderately soft to moderately hard, high intergranular porosity. Marl (20%), pale olive (10 Y 6/2), soft, low apparent porosity, very low permeability.
- 1018-1020 Limestone (70%), grayish-orange (10 YR 7/4), calcarenite (poorly cemented bio/pelsparite), moderately soft to moderately hard, high intergranular porosity. Marl (30%), grayish-orange (10 YR 7/4), soft, low apparent porosity, very low permeability.
- 1020-1029 Limestone (90%), light olive-gray (5 Y 5/2), calcarenite (bio/pelsparite), moderately hard, very high moldic porosity, abundant small bivalve shells. Marl (10%), light olive-gray (5 Y 5/2), soft, very low permeability.
- 1029-1036 Limestone, yellowish-gray (5 Y 7/2), calcarenite (poorly cemented biosparite), moderately hard, very high moldic porosity, abundant small bivalve shells. Marl, yellowish-gray (5 Y 7/2), soft, low apparent porosity, very low permeability.
- 1036-1041 Limestone (60%), yellowish-gray (5 Y 7/2), calcarenite (poorly cemented biosparite), moderately hard, fossiliferous, abundant small bivalve shells, high porosity (moldic and intergranular). Limestone (30%), pale olive-gray (10 Y 6/2), biomicrite,

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- moderately hard, high moldic porosity. Marl (10%), pale olive (10 Y 6/2), soft, low apparent porosity, very low permeability.
- 1041-1055 Limestone (90%), very pale orange (10 YR 8/2), calcarenite (poorly cemented bio/pelsparite), moderately soft to moderately hard, high intergranular porosity. Marl (10%), pale olive (10 Y 6/2), soft, moderate to low apparent porosity, very low permeability.
- 1055-1058 Limestone (70%), yellowish-gray (5 Y 7/2), calcarenite (poorly cemented bio/pelsparite), moderately hard, high intergranular porosity, 1% small bivalve shells. Limestone (20%), very pale orange (10 YR 8/2), calcarenite, (poorly cemented bio/pelsparite), moderately soft to moderately hard, high porosity (moldic and intergranular). Marl (10%), pale olive (10 Y 6/2), soft, low to moderate porosity, very low permeability.
- 1058-1061 Limestone, yellowish-gray (5 Y 7/2), calcarenite (poorly cemented bio/pelsparite), moderately hard, very high intergranular porosity.
- 1061-1073 Limestone, yellowish-gray (5 Y 7/2) to pale olive (10 Y 6/2), calcarenite (poorly cemented bio/pelsparite), moderately hard, high moldic and intergranular porosity, numerous small bivalve shells.
- 1073-1075 Limestone (70%), very light gray (N8), biomicrite, moderately hard, high apparent moldic porosity. Limestone (30%), yellowish-gray (5 Y 7/2), calcarenite (poorly cemented biosparite), moderately hard, high intergranular porosity, numerous small bivalve shells.
- 1075-1079 Limestone, yellowish-gray (5 Y 7/2), calcarenite (poorly cemented biosparite), moderately hard, high intergranular porosity, abundant (15%) small bivalve shells.
- 1079-1089 Limestone, yellowish-gray (5 Y 7/2), calcarenite (poorly cemented biosparite), moderately hard, high moldic and intergranular porosity, minor (5%) small bivalve shells.

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GEOLOGIST'S LOG OF MC-5000

Depth (feet)

Lithology

- 1089-1098 Limestone, very pale orange (10 YR 8/2), calcarenite (poorly cemented biosparite), moderately soft to moderately hard, high intergranular porosity, abundant (15-20%) small bivalve shells.
- 1098-1104 Limestone (60%), very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1), micrite, moderately hard, high moldic porosity. Limestone (40%), yellowish-gray (5 Y 2/2), calcarenite (poorly cemented biosparite), moderately soft to moderately hard, high intergranular porosity.
- 1104-1109 Limestone, very pale orange (10 YR 8/2), calcarenite (poorly cemented biosparite), moderately soft to moderately hard, minor molds and casts of aragonitic fossils, minor (1-2%) small bivalve shells, high intergranular porosity.
- 1109-1114 Limestone (80%), very pale orange (10 YR 8/2), calcarenite, moderately soft to moderately hard, high intergranular porosity, molds and casts (30%), marl (20%), white (N9), soft, moderate to low apparent porosity.
- 1114-1117 Limestone (40%), very pale orange (10 YR 8/2), biomicrite, moderately hard, high moldic porosity. Limestone (40%), very pale orange (10 YR 8/2), calcarenite (poorly cemented biosparite), moderately soft, high intergranular porosity. Marl (20%), white (N9), soft, moderate to low apparent porosity, very low permeability.
- 1117-1120 Limestone (50%), medium gray (N5), biomicrite, moderately hard, slightly phosphatic (sand-sized grains), high moldic porosity. Limestone (40%), very pale orange (10 YR 8/2), moderately hard, very high moldic porosity. Marl (10%), light gray (N7), moderate to low apparent porosity, very low permeability.
- 1120-1133 Limestone (70%), very pale orange (10 YR 8/2), calcarenite (biosparite), moderately hard, high moldic porosity. Marl (30%), very light gray (N8), soft, cohesive fine phosphate, low apparent porosity, very low permeability.

- 1133-1138 Marl (75-80%), yellowish-gray (5 Y 8/1), soft to firm, cohesive, low apparent porosity, very low permeability. Limestone (20-25%), yellowish-gray (5 Y 8/1), micrite, sandy (quartz), moderately soft, slightly phosphatic, moderate to low porosity.
- 1138-1148 Dolomite (100%), light olive-gray (5 Y 5/2), sucrosic texture, hard, phosphatic, moderate porosity, low apparent permeability.
- 1148-1154 Shell/coquina, very pale orange (10 YR 8/2), moderately soft to soft, very high porosity and permeability.
- 1154-1169 Limestone, yellowish-gray (5 Y 8/1), calcarenite (poorly cemented biosparite), moderately hard, phosphatic, very high apparent porosity (intergranular).
- 1169-1175 Limestone, light gray (N7) to yellowish-gray (5 Y 8/1), biomicrite, fossiliferous, moderately hard, very high moldic porosity, phosphatic.
- 1175-1181 Limestone, light gray (N7) to light olive-gray (5 Y 6/1), biomicrite, moderately hard, sandy, high moldic porosity.
- 1181-1195 Limestone, very pale orange (10 YR 8/2), calcarenite (poorly cemented biosparite), moderately soft to moderately hard, marly, high intergranular porosity.
- 1195-1201 Limestone (100%), yellowish-gray (5 Y 8/1), calcarenite and biomicrite, moderately hard, slightly phosphatic, high to very high moldic porosity.