GEOLOGY OF THE SURFICIAL AQUIFER SYSTEM DADE COUNTY, FLORIDA

LITHOLOGIC LOGS

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U.S. GEOLOGICAL SURVEY
WATER-RESOURCES INVESTIGATIONS REPORT 86-4126

Lithologic Log of Well G-3294

Description	Thick- ness (feet)	Depth, feet below land surface
Fill and soil.	3	0 - 3
Limestone, very pale orange (10 YR 8/2) and moderate-yellowish-brown (10 YR 5/4); sandy, sparse poorly washed biosparite, mollusks; about 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; about 20 percent ferrous specks; well cemented; moderately porous.		3 - 4
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and olive-gray (5 Y 4/1); sandy intrasparite; about 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; about 20 percent ferrous specks; very well cemented; slightly porous, vugs.	2	4 - 6
Limestone, very pale orange (10 YR 8/2); oolite-bearing sparse poorly washed biosparite; about 20 percent ferrous specks; well cemented; moderately porous, vugs.	2	6 - 8
Limestone as above; very pale orange (10 YR 8/2) and grayish-yellow (5 Y 8/4); in contact with sparite, light-olive-brown (5 Y 5/6); well cemented; moderately porous to porous, vugs.	2	8 - 10
Limestone, yellowish-gray (5 Y 7/2) and light-olive-brown (5 Y 5/6); sparse biomicrite, freshwater gastropods; well cemented; porous, moldic and vugs.	2	10 - 12
Limestone, yellowish-gray (5 Y 8/1) and grayish-yellow (5 Y 8/4); sparse to packed biosparite, Chione sp. and Archais sp.; about 5 percent heavy minerals, very fine grained, subangular to rounded; very well cemented; moderately porous to porous, moldic and vugs.	2	12 - 14
Limestone, yellowish-gray (5 Y 7/2) and dusky-yellow (5 Y 6/4) to grayish-yellow (5 Y 8/4); packed poorly washed biosparite, mollusks; about 5 percent heavy minerals, very fine grained, subangular to rounded; well cemented; porous, vugs; interbedded with sparse biosparite toward base, very pale orange (10 YR 8/2) and pale-yellowish-brown (10 YR 6/2), mollusks; interfingering with sandy micrite; about 15 percent quartz, fine grained, subangular; about 3 percent heavy minerals, very fine grained, subangular; well cemented; porous, vugs.	2	14 - 16

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, marine mollusks; about 40 to 45 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to rounded; is a sandstone in places; moderately to well cemented; porous, vugs.	4	44 - 48
Limestone as above; about 10 to 20 percent cavity-filling detritus.	4	48 - 52
Limestone as above; about 30 to 35 percent quartz; well cemented; moderately porous to porous in places; about 10 to 20 percent detritus as above.	2	52 - 54
Limestone, yellowish-gray (5 Y 8/1) to very pale orange (10 YR 8/2); sandy, packed biosparite, large marine gastropods, Chione sp. and other mollusks; about 40 to 45 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to rounded; well cemented; porous to very porous, moldic, interparticle, and vugs; is a sandstone in places; interfingering with a sandy, sparse poorly washed biosparite, yellowish-brown (10 YR 6/2), freshwater gastropods and other mollusks; about 20 percent cavity-filling detritus at 56 to 58 feet.	6	54 - 60
Limestone as above; grades to a sandy, sparse biosparite in places, corals and mollusks; about 30 to 35 percent quartz; about 15 to 20 percent heavy minerals, fine grained, subrounded to well rounded.	2	60 - 62
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sandy, packed to sandy, sparse poorly washed biosparite, mollusks; about 35 to 40 percent quartz, fine to very fine grained, well sorted (fine), subangular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; well cemented; porous, moldic and vugs.	2	62 - 64
Limestone, very pale orange (10 YR 8/2) and light-brown (5 YR 5/6); sandy, sparse biosparite, Chione sp. and other mollusks; about 35 to 40 percent quartz, fine to very fine grained, well sorted (fine), subangular to subrounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals, fine grained, subrounded to well rounded; well cemented; porous, moldic.	2	64 - 66

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, very pale orange (10 YR 8/2); quartzose, fine to very fine grained, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals, fine grained, subrounded to well rounded; about 20 to 25 percent shell and shell fragments; about 15 to 20 percent sparite matrix; well cemented; porous, vugs; interbedded with about 20 to 30 percent sand, same properties as in sandstone.	4	66 - 70
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 30 percent quartz, fine to very fine grained, well sorted (fine), subangular to subrounded; about 15 to 20 percent heavy minerals, fine grained, subrounded to well rounded; well cemented; porous, vugs.	4	70 - 74
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-brown (10 YR 4/2); sparse to packed poorly washed biosparite, abundant corals (Montastrea sp.) and mollusks; about 15 to 20 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; well cemented; porous, framework, moldic, and vugs.		74 - 77 [.]
Limestone, very pale orange (10 YR 8/2) and yellowish-gray (5 Y 7/2) and grayish-orange (10 YR 7/4); biolithite and sandy, packed biosparite, corals and mollusks; about 10 percent quartz, fine grained, subangular to subrounded; corals are coated with a dark-colored mineral; very well cemented; porous, framework and vugs.	3	77 - 80
Limestone, very pale orange (10 YR 8/2); sparse biosparite, corals; about 10 percent quartz, fine grained, angular to subrounded; in contact with a sandy, packed biosparite toward base, Ostrea sp., Balanus sp., and Pecten sp.; about 25 percent heavy minerals, phosphorite, and ferrous minerals, fine grained, subrounded to well rounded; about 20 percent quartz, fine grained, subangular to subrounded; well cemented; porous, interparticle, framework, vugs, and moldic.	4	80 - 84
Limestone as above; yellowish-gray (5 Y 8/1) to light-gray (N 7); about 30 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; well cemented; is a sandstone in places; porous, moldic, vugs, and interparticle.	3	84 - 87

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subrounded to well rounded; about 35 percent shells and shell fragments, mollusks and bryozoans; loosely cemented in places; interbedded with about 30 percent limestone; sandy, packed sorted biosparite, mollusks, coquinoid texture; about 35 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; is a sandstone in places; moderately to well cemented; porous, moldic, interparticle, and vugs.	3	87 - 90
Sandstone, light-olive-gray (5 Y 5/2); quartzose, very coarse grained to silt, poorly sorted, angular to subrounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine to very fine toward base), subangular to rounded; about 25 percent shells and shell fragments, Pecten sp. and other mollusks; bone chips; about 15 percent poorly washed sparite; loosely to well cemented; moderately porous, moldic.	4	90 - 94
Sandstone as above; yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartz is moderately sorted (very fine); about 25 to 30 percent shells and shell fragments; about 15 to 20 percent poorly washed sparite matrix; is a limestone in places; porous, vugs and moldic.	3	94 - 97
Sandstone as above; quartzose, coarse grained to silt, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, very coarse to very fine grained, poorly sorted, subrounded to well rounded; about 10 to 30 percent micritic matrix; moderately porous, interparticle, moldic, and vugs.	3	97 - 100
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, packed biosparite, mollusks; about 20 percent quartz, coarse to fine grained, well sorted (medium), subrounded to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), rounded to well rounded; moderately to well cemented; porous, moldic, vugs, and interparticle.	4	100 - 104

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 30 percent quartz, coarse to fine grained, well sorted (fine), subrounded to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), rounded to well rounded; loosely to moderately cemented; moderately porous, moldic and vugs.	3	104 - 107
Limestone as in 100 to 104 feet; yellowish-gray (5 Y 7/2) to medium-gray (N 5); about 25 percent quartz; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine).	3	107 - 110
Sandstone, yellowish-gray (5 Y 7/2) to light-gray (N 7); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), rounded; about 25 to 30 percent shell fragments; about 10 to 20 percent micritic matrix; very loosely to loosely cemented.	4	110 - 114
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, echinoids and mollusks; about 25 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded to well rounded; loosely cemented.	3	114 - 117
Siltstone, light-olive-gray (5 Y 5/2); slightly calcareous and sandy; about 35 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 15 percent shell fragments, mollusks; very loosely cemented.	3	117 - 120
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, well sorted (fine), subangular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subrounded to well rounded; about 5 to 10 percent shell fragments, mollusks; very loosely cemented in places.	7	120 - 127
Silt, light-olive-gray (5 Y 5/2); slightly calcareous and sandy; about 35 to 40 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 1 to 3 percent shell fragments.	3	127 - 130

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 5 to 10 percent shell fragments, mollusks; about 30 percent micritic matrix; very loosely to moderately cemented.	5	130 - 135
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, mollusks; about 35 percent quartz, fine grained to silt, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; is a sandstone in places; very loosely to moderately cemented.	12	135 - 147
Limestone, yellowish-gray (5 Y 7/2) to light-gray (N 7); sandy, sparse poorly washed biosparite, mollusks and bryozoans; about 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; moderately to well cemented; moderately porous, moldic and vugs.	3	147 - 150
Limestone, yellowish-gray (5 Y 7/2) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, mollusks; about 25 percent quartz, fine to very fine grained, well sorted (very fine), angular to subrounded; moderately to well cemented; porous, moldic and interparticle.	4	150 - 154,
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, mollusks; about 30 to 35 percent quartz, fine grained, angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; is a sandstone in places; loosely cemented to moderately cemented; slightly to moderately porous, moldic.	6	154 - 160
Limestone as above; about 35 to 40 percent quartz.	4	160 - 164
Limestone as above; about 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; moderately to well cemented; moderately porous to porous, moldic.	3	164 - 167
Limestone as above; light-olive-gray (5 Y 6/1); grades to a sandstone toward base; well cemented.	3	167 - 170

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, <u>Pecten sp., Turritella sp.,</u> and other mollusks; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; moderately to well cemented; porous, moldic.	7	170 - 177
Sandstone, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, fine to very fine grained, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subangular to rounded; about 10 to 15 percent shell fragments, mollusks; about 10 to 20 percent micritic matrix; very loosely to moderately cemented; moderately porous, moldic.	3	177 - 180
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to well rounded; about 20 to 25 percent shell fragments, mollusks.	4	180 - 184
Sand as above; light-olive-gray (5 Y 6/1); about 20 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to rounded.	6	184 - 190
Sandstone, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 15 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to rounded; about 25 to 30 percent shells and shell fragments, mollusks; about 20 percent micritic matrix; is a limestone in places; loosely to moderately cemented.	4	190 - 194
Sandstone, light-gray (N 7) to medium-light-gray (N 6); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (fine), subangular to well rounded; about 30 percent shell fragments; about 15 to 20 percent micritic matrix; very loosely to loosely cemented.	3	194 - 197

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-gray (N 7) to medium-gray (N 5); quartzose, fine to very fine grained, well sorted (fine), angular to subangular; about 20 to 25 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subangular to well rounded; about 20 percent shell fragments, mollusks; loosely cemented in places.	3	197 - 200
Siltstone, grayish-olive (10 Y 4/2); about 35 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, subrounded to rounded; interbedded with about 20 percent sand, quartzose, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 5 percent shell fragments.	4	200 - 204
Siltstone, grayish-olive (10 Y 4/2); clayey and sandy; about 5 percent shell fragments.	6	204 - 210
Claystone, grayish-olive (10 Y 4/2); silty, sandy and slightly calcareous to calcareous; contains foraminifers; moderately cemented.	10	210 220

Lithologic Log of Well G-3295

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	3	0 - 3
Limestone, medium-gray (N 5), yellowish-gray (5 Y 7/2) to very pale orange (10 YR 8/2), and grayish-orange (10 YR 7/4); sandy, sparse to packed biosparite, small gastropods; about 15 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded to rounded; very well cemented; slightly porous, vugs.	1.5	3 - 4.5
Limestone, very pale orange (10 YR 8/2) to white (N 9); sandy spar- ite; stylolites; some are stained by ferrous minerals; about 10 to 30 percent quartz in places, coarse to fine grained, well sorted (fine), angular to subrounded; very well cemented; virtually non- porous.	1.5	4.5 - 6
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6) and moderate-yellowish-brown (10 YR 5/4) to moderate-brown (5 YR 4/4); sandy, fossiliferous sparite to sandy, sparse biosparite, corals and mollusks; stylolites; about 25 to 30 percent quartz and 15 to 20 percent quartz toward base, coarse to fine grained, well sorted (fine), angular to rounded; very well cemented; virtually nonporous to slightly porous toward base.	2	6 - 8
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2) and pale-yellowish-brown (10 YR 6/2); sandy, packed biomicrite, mollusks including Ostrea sp.; ferrous stained; about 40 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; moderately to well cemented; porous, interparticle, moldic, and vugs.	2	8 - 10
Sandstone, grayish-orange (10 YR 7/4) to yellowish-gray (5 Y 7/2); quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to rounded; about 35 percent shells and shell fragments, mollusks including Ostrea sp.; about 10 to 20 percent micritic matrix; is a limestone in places; loosely to well cemented; moderately porous, moldic and interparticle.	4	10 - 14
Limestone, yellowish-gray (5 Y 7/2) and dusky-yellow (5 Y 6/4); sandy, packed biomicrite, Balanus sp., Ostrea sp., and other mollusks; about 40 percent quartz, medium to fine grained, angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to fine grained; moderately to well cemented and very loosely to loosely cemented toward base; porous, interparticle and moldic.	6	14 - 20

Description	Thick- ness (feet)	Depth, feet below land surface
Lime mud, yellowish-gray (5 Y 7/2); sandy, shelly micrite; about 35 percent shell fragments, corals, Ostrea sp., and other mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded.	4	20 - 24
Shell fragments, mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 30 percent micrite, not cemented; cemented in places.	2	24 - 26
Lime mud, yellowish-gray (5 Y 7/2); shelly, sandy micrite; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 15 percent shell fragments.	4	26 - 30
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, sparse biomicrite, mollusks; is stained black in places; about 25 to 30 percent quartz, coarse to fine grained, poorly to moderately sorted (fine) toward base, subrounded to well rounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, poorly sorted, subrounded to well rounded; loosely to moderately cemented; slightly to moderately porous, moldic.	6	30 - 36
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, sparse poorly washed biosparite, mollusks; about 25 to 30 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to rounded; about 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded to well rounded; moderately to well cemented; moderately porous, moldic.	2	36 - 38
Limestone, yellowish-gray (5 Y 8/1) and light-gray (N 7) to dark-gray (N 3); sandy, packed poorly washed biosparite to biomicrite, mollusks; about 10 to 20 percent quartz, medium to fine grained, well sorted (medium), rounded; about 5 percent phosphorite, medium grained, rounded; moderately to well cemented; moderately porous to porous, moldic and interparticle.	4	38 - 42
Limestone as above; serpulids, Ostrea sp., and other mollusks; quartz is moderately sorted (fine); about 5 percent heavy minerals, fine grained, subrounded; very loosely to moderately cemented and not cemented in places; sandy, shelly micrite; about 5 percent quartz, fine grained, angular; about 3 to 5 percent heavy minerals, fine grained, well rounded.	12	42 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Lime mud as above; light-olive-gray (5 Y 6/1); about 30 to 40 percent shells and shell fragments, Ostrea sp., Pecten sp., and other mollusks; very loosely cemented in places into a sandy, sparse biomicrite as in 38 to 42 feet.	6	54 - 60
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, mollusks, coquinoid texture; about 5 to 10 percent quartz, medium to fine grained, well sorted, angular to subangular; about 3 to 5 percent heavy minerals, fine grained, rounded to well rounded; loosely to well cemented; moderately porous, interparticle and framework.	6	60 - 66
Limestone as above; grades to silty, shelly, calcareous claystone in places; moderately cemented; virtually nonporous to slightly porous.	2	66 - 68
Limestone as in 60 to 66 feet; about 15 percent quartz; about 10 percent heavy minerals and phosphorite; loosely to moderately cemented; moderately porous.	2	68 - 70
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, packed biomicrite to sandy, packed poorly washed biosparite, bryozoans, Chione sp., and other mollusks; about 25 percent quartz, medium to very fine grained, well sorted (fine), angular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), rounded; moderately to well cemented; moderately porous to porous, moldic and interparticle.	5	70 - 75
Limestone, light-olive-gray (5 Y 6/1) to medium-gray (N 5); sandy, packed unsorted biosparite, Pecten sp., Turritella sp., and other mollusks; about 20 percent quartz, fine to very fine grained, angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, angular to rounded; well cemented; porous, moldic and interparticle.	5	75 - 80
Limestone, very light gray (N 8) to medium-gray (N 5); sandy, packed sorted biosparite, Encope sp., Pecten sp., and other mollusks and bryozoans; about 20 percent quartz, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; moderately to well cemented; moderately porous.	5	80 - 85

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 25 percent quartz; about 20 percent heavy minerals and phosphorite; moderately to well cemented; porous, moldic, interparticle, and framework.	10	85 - 95
Limestone as above; loosely to moderately cemented and moderately to well cemented in places; porous.	20	95 - 115
Limestone, yellowish-gray (5 Y 8/1) to medium-gray (N 5); sandy, packed biosparite, Pecten sp. and other mollusks; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; moderately to well cemented; porous, interparticle, framework, and moldic.	10	115 - 125
Limestone as above; very light gray (N 8) and yellowish-gray (5 Y 8/1); about 5 to 10 percent heavy minerals and phosphorite.	5	125 - 130
Limestone as above; about 35 to 45 percent quartz, coarse to fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals; is a sandstone in places.	6.5	130 - 136.5
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), subangular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (medium), subrounded to well rounded.	3.5	136.5 - 140
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (medium), subangular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately sorted (medium), subangular to well rounded; interbedded with sandstone at 143.5 to 144 feet, same properties as in sand; about 5 percent shell fragments; about 25 percent sparite matrix.	5	140 - 145
Sand as above; quartz is poorly sorted; about 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subrounded to well rounded; shark teeth; interbedded at 146.5 to 147 feet with sandy, packed biosparite as in 130 to 136.5 feet; quartz is very coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent phosphorite and heavy minerals, granules to very fine grained, moderately sorted (fine), subangular to well rounded.	5	145 - 150

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 10 to 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, angular to subrounded; interbedded with about 5 to 10 percent sandstone; quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded; about 15 percent shell fragments; is a limestone in places.	10	150 - 160
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), subrounded to well rounded; about 5 to 10 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (fine), subrounded to well rounded; interbedded with about 3 to 5 percent sandstone as above.	5	160 - 165
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, moderately sorted (very fine), subrounded to well rounded.	5	165 - 170
No recovery.	4	170 - 174
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 3 to 5 percent mica.	3	174 - 177
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to fine grained, moderately (medium) to poorly sorted, subangular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; about 5 percent mica; interbedded with about 35 percent sandy, silty, sparse biomicrite.	3	177 - 180
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to fine grained, moderately sorted (medium), angular to well rounded; about 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subrounded to well rounded; about 20 to 25 percent shell fragments, mollusks; interbedded with about 5 percent sandy, silty, sparse biomicrite.	4	180 - 184

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; contains phosphatized and pyritized wood chips and shark teeth; interbedded with thin layers of limestone; sandy, silty micrite and micrite, some root casts.	6	184 - 190
Sandstone, yellowish-gray (5 Y 7/2); quartzose, granules to very fine grained, poorly sorted, angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subrounded to well rounded; about 15 percent shell fragments, mollusks; phosphatized bone fragments; about 15 to 20 percent micritic matrix; loosely to moderately cemented.	4	190 - 194
Sandstone as above; interbedded with a sandy, shelly, silty, calcareous claystone, light-olive-gray (5 Y 5/2); contains RF from a siltstone; about 20 percent shell fragments, barnacles, and mollusks; about 30 percent quartz, medium to very fine grained, moderately sorted (medium), angular to subrounded; moderately cemented; virtually nonporous.	3	194 - 197
Claystone as above; about 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to well rounded.	3	197 - 200
Sand as in 190 to 194 feet; about 15 to 20 percent heavy minerals and phosphorite, pebbles to very fine grained, poorly sorted, subrounded to well rounded; about 5 to 10 percent shell fragments; interbedded with about 5 to 10 percent claystone, sandy and calcareous.	4	200 - 204
Sand as above; interbedded with about 10 to 15 percent sandy micrite (root casts) and claystone as above.	3	204 - 207
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately (medium) to poorly sorted, angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 percent shell fragments; about 3 to 5 percent root casts as above.	3	207 - 210
Sand as in 200 to 204 feet; quartzose, pebbles to very fine grained, poorly sorted, angular to rounded; interbedded with about 40 percent sandstone; quartzose, very coarse grained to silt, poorly sorted, angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, poorly sorted, subangular to well rounded; about 10 to 15 percent shells and shell fragments; about 15 percent micritic matrix; root casts; interbedded with sandy, silty, calcareous claystone.	4	210 - 214

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; interbedded with about 30 percent sandstone; quartz- ose, medium to fine grained, well sorted (medium), subrounded to well rounded; about 10 to 15 percent heavy minerals and phospho- rite, medium to very fine grained, moderately sorted (medium), sub- rounded to rounded; grades to a sandy, sparse biomicrite in places; about 35 percent quartz, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy min- erals and phosphorite, very coarse to very fine grained, moderately sorted (medium), subrounded to well rounded; moderately to well cemented; slightly porous.	3	214 - 217
Sand as above; about 15 to 20 percent shell fragments; about 5 percent sandy, silty, fossiliferous micrite.	9	217 - 226
Claystone, light-olive-gray (5 Y 5/2); silty; about 25 percent sand, very fine grained, angular; slightly calcareous to calcareous; moderately cemented; virtually nonporous.	1	226 - 227
Silt, light-olive-gray (5 Y 5/2); about 30 to 40 percent sand, very fine grained, angular; clayey and calcareous; about 3 percent shell fragments; interbedded with about 10 percent silty claystone as above, grayish-olive (10 Y 4/2).	3	227 - 230

Lithologic Log of Well G-3296

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	5	0 - 5
Peat.	1	5 - 6
Peat; interbedded with silty, shelly micrite, not cemented, freshwater gastropods.	4	6 - 10
Missing.	4	10 - 14
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and dark-yellowish-brown (10 YR 4/2); sparse biomicrite, abundant Helisoma sp., interfingering with sparse poorly washed biosparite, Chione sp.; well cemented; moderately porous, moldic and vugs.	6	14 - 20
Limestone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4); sorted packed biosparite to packed biosparite, mollusks and small skeletal fragments; well cemented; moderately porous to porous, interparticle, moldic, and vugs, interfingering with fossiliferous sparite at 21 to 21.5 feet; very well cemented; very slightly to slightly porous, vugs.	4	20 - 24
Limestone as above; packed biosparite to a sparse biosparite in places; well to very well cemented; moderately porous to porous, moldic, interparticle, and vugs.	2	24 - 26
Limestone as above; packed biosparite, Chione sp. and other mollusks; well cemented; porous, moldic, interparticle, and vugs.	2	26 - 28
Limestone as above; grades to a packed poorly washed biosparite; interfingering with about 10 to 20 percent freshwater limestone toward base, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); packed poorly washed biosparite, Helisoma sp.; well cemented; porous, moldic.	2	28 - 30
Limestone (freshwater) as above; interfingering with about 30 to 40 percent limestone as in 24 to 26 feet.	2	30 - 32
Limestone, very pale orange (10 YR 8/2); fossiliferous to sparse poorly washed biosparite, Helisoma sp.; very well cemented; slightly to moderately porous, moldic.	2	32 - 34
Limestone, white (N 9) to very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sparse poorly washed biosparite, Chione sp. and other mollusks; about 5 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well to very well cemented; moderately porous, vugs and moldic.	2	34 - 36

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse to packed poorly washed biosparite, <u>Chione</u> sp. and other mollusks; about 25 to 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; well to very well cemented; moderately porous to porous, moldic and vugs.	4	36 - 40
Limestone, very pale orange (10 YR8/2); sandy, sparse to packed poorly washed biosparite, <u>Chione</u> sp. and corals; about 35 percent quartz, very coarse to very fine grained, moderately sorted (medium), angular to subrounded; very well cemented; moderately porous to porous, moldic and vugs.	4	40 - 44
Limestone, yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4) and light-olive-brown (5 Y 5/6); sandy, sparse to sandy, packed biosparite, mollusks including <u>Turritella</u> sp.; about 25 to 30 percent quartz, very coarse to very fine grained, poorly to moderately sorted (medium), angular to well rounded; well cemented; porous, moldic and vugs.	2	44 - 46
Limestone as above; packed biosparite, <u>Pecten</u> sp. and other mollusks; about 35 to 40 percent quartz, granules to fine grained, poorly to moderately sorted (medium), angular to well rounded; is a sandstone in places; moderately cemented.	2	46 - 48
Sandstone, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, granules to fine grained, moderately to well sorted (coarse), subrounded to well rounded; about 3 to 5 percent heavy minerals and phosphorite, coarse to very fine grained, poorly sorted, subrounded to well rounded; about 25 percent shell fragments, barnacles, corals, and mollusks; pieces of petrified wood; about 3 to 5 percent sparite matrix; moderately cemented; very porous, interparticle and vugs; interbedded with about 30 percent sand, same properties as the sandstone; about 5 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subrounded to well rounded.	2	48 - 50
Sand as above; about 30 to 40 percent shell fragments; cemented in places to about 10 to 20 percent sandstone as above, concretionary.	4	50 - 54
Sand as above; about 20 percent shell fragments; about 5 to 20 percent sandstone as above.	8	54 - 62
Sand as above; quartzose, granules to fine grained, moderately sorted (medium), angular to rounded; about 30 percent shell fragments; about 10 percent sandstone as above.	2	62 - 64

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; quartz is moderately sorted (medium to fine), angular to rounded; about 3 to 5 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (medium), subrounded to well rounded; about 25 percent shell fragments; about 10 to 15 percent sandstone as above.	2	64 - 66
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded; about 10 to 15 percent shell fragments; about 5 to 10 percent sandstone as above, concretionary.	4	66 - 70
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately sorted (medium), angular to well rounded; about 10 percent heavy minerals and phosphorite, very coarse to fine grained, moderately sorted (medium), subrounded to well rounded; about 25 to 30 percent shell fragments, <u>Balanus</u> sp., echinoid spines, and mollusks; interbedded with about 30 to 40 percent sandstone, same properties as in the sand; about 5 percent sparite matrix; very loosely to well cemented; concretionary.	2	70 - 72
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately sorted (medium), angular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subrounded to well rounded; about 25 to 30 percent shell fragments; interbedded with about 10 to 15 percent sandstone, same properties as in the sand; about 30 to 35 percent shell fragments; about 15 to 20 percent poorly washed sparite matrix; is a limestone in places.	2	72 - 74
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); sandy, intraclastic packed biomicrite, mollusks; clasts consist of sandy, carbonaceous, phosphatic limestone; about 25 percent quartz, coarse to very fine grained, poorly sorted, angular to well rounded; about 5 percent heavy minerals and phosphorite, very coarse to very fine grained, poorly sorted, subrounded to well rounded; loosely to moderately cemented.	2	74 - 76
Limestone as above; light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); about 30 percent quartz, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to rounded; loosely to moderately cemented.	2	76 - 78

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1) to medium-gray (N 5); packed biomicrite to packed poorly washed biosparite in places, mollusks; about 20 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subrounded to rounded; loosely to well cemented; moderately porous, moldic and interparticle.	. 2	78 - 80
Limestone, yellowish-gray (5 Y 7/2) to medium-gray (N 5); sandy, sparse biomicrite to sandy, sparse poorly washed biosparite, Encope sp., Balanus sp., Pecten sp., and other mollusks; about 25 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to well rounded; moderately to well cemented; moderately porous, moldic and interparticle.	2	80 - 82
Limestone, medium-gray (N 5); sandy, sorted packed poorly washed bio- sparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; moderately cemented; moderately porous, interparticle.	4	82 - 86
Limestone, yellowish-gray (5 Y 7/2) to light-brown (5 YR 5/6); sandy, sparse to packed poorly washed biosparite, mollusks; an appreciable amount of shell fragments are coated with ferrous minerals; about 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; loosely to well cemented; moderately porous, moldic and interparticle.	2	86 - 88
Limestone, yellowish-gray (5 Y 7/2) to light-brown (5 YR 5/6) and light-olive-gray (5 Y 6/1) to medium-gray (N 5); sandy, packed biosparite, Pecten sp. and other mollusks; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; moderately to well cemented; porous, interparticle, moldic, and vugs.	2	88 - 90
Limestone as above; light-gray (N 7) to medium-gray (N 5); about 25 percent quartz; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine); well cemented.	2	90 - 92

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, Pecten sp., Ostrea sp., Encope sp., and Balanus sp.; about 30 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to rounded; well cemented; porous, interparticle, moldic, and vugs.	2	92 - 94
Limestone as above; about 25 to 30 percent quartz, fine grained, subrounded to rounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; moderately to well cemented and loosely to moderately cemented at 96 to 100 feet; porous, moldic and interparticle.	6	94 - 100
Limestone as in 82 to 86 feet; loosely to moderately cemented.	10	100 - 110
Limestone as above; about 15 percent quartz, fine grained, angular to subangular; about 5 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; loosely to moderately cemented.	5	110 - 115
Limestone, light-gray (N 7) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, Encope sp., echinoids, serpulids, and mollusks; about 20 to 25 percent quartz, fine to very fine grained, angular to subangular; about 5 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; loosely to well cemented; porous, interparticle, moldic, and vugs.	25	115 - 140
Limestone as above; about 30 to 40 percent quartz; about 15 percent heavy minerals; moderately to well cemented; moderately porous to porous, moldic and interparticle.	15	140 - 155
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, mollusks; about 20 to 35 percent quartz, fine to very fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, subrounded to well rounded; loosely to well cemented; moderately porous, moldic and interparticle.	5	155 - 160

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, mollusks and <u>Balanus</u> sp.; about 30 to 40 percent quartz, fine to very fine grained, angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; is a sandstone in places; loosely to well cemented; moderately porous, moldic and interparticle.	20	160 - 180
Sand, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 35 percent detrital carbonate and shell fragments, mollusks and echinoid spines; about 10 percent micrite, not cemented; loosely cemented in places.	4	180 - 184
Sand as above; about 10 percent heavy minerals and phosphorite; about 25 to 35 percent shell fragments; about 20 to 30 percent micrite, not cemented; cemented in places.	9.5	184 - 193.5
Siltstone, light-olive-gray (5 Y 5/2); sandy; quartzose, very fine grained, angular to subangular; slightly calcareous; loosely to moderately cemented; virtually nonporous.	1.5	193.5 - 195
Claystone, moderate-olive-brown (5 Y 4/4); silty; contains foraminifers; loosely to moderately cemented; virtually nonporous.	5	195 - 200
Clay, moderate-olive-brown (5 Y 4/4); silty.	2	200 - 202

Lithologic Log of Well G-3297

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); fossiliferous sparite; very well cemented; very slightly to slightly porous; interbedded with peat.	2	4 - 6
Limestone as above; very pale orange (10 YR 8/2) to moderate-brown (10 YR 4/4); interbedded with peat and calcareous, silty soil containing Helisoma sp.	2	6 - 8
Limestone, very pale orange (10 YR 8/2); sparse oosparite; well cemented; porous, vugs; interbedded with soil as above.	2	8 - 10
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4), moderate-reddish-brown (10 R 4/6), moderate-brown (5 YR 4/4), and dark-yellowish-brown (10 YR 4/2); oolite-bearing intrasparite to oolite-bearing poorly washed intrasparite; ferrous stained; about 30 to 35 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well to very well cemented; moderately porous to porous.	2	10 - 12
Limestone, yellowish-gray (5 Y 7/2); sandy, fossiliferous poorly washed sparite; about 20 to 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; moderately to well cemented; moderately porous to porous, vugs.	2	12 - 14
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sparse sparite, Helisoma sp.; well cemented; porous, moldic.	2	14 - 16
Limestone, very pale orange (10 YR 8/2), yellowish-gray (5 Y 7/2), dusky-yellow (5 Y 6/4), and light-olive-brown (5 Y 5/6); fossil-iferous sparite to sandy, sparse biosparite, Helisoma sp.; about 15 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well to very well cemented; moderately porous, vugs and moldic.	2	16 - 18
Limestone, very pale orange (10 YR 8/2); silty, intraclastic packed biosparite, mollusks; about 20 percent heavy minerals, very fine grained to silt, well sorted (silt), angular; about 5 to 10 percent quartz, very fine grained to silt, well sorted (silt), angular to subangular; moderately to well cemented; moderately porous to porous, moldic and interparticle.	5	18 - 23

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1 to 5 Y 5/2); sparse biosparite, Helisoma sp.; differential cementation is evident; well cemented; moderately porous to porous, moldic; at 23.5 to 24 feet is very well cemented; slightly porous.	5.5	23 - 28.5
Limestone, very pale orange (10 YR 8/2); sparse biosparite, <u>Archais</u> sp. and small mollusks; well cemented; slighly to moderately porous, vugs; interfingering with limestone as above.	3.5	28.5 - 32
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, <u>Chione</u> sp. and other mollusks, and bryozoans; about 10 percent heavy minerals, very fine grained to silt, well sorted (very fine), angular to subangular; well cemented; porous to very porous, vugs.	2	32 - 34
Limestone as above; lacks heavy minerals; about 5 to 10 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular.	1	34 - 35
Limestone, light-olive-gray (5 Y 6/1); packed poorly washed biospar- ite, <u>Helisoma</u> sp.; well cemented; porous, moldic.	1	35 - 36
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite to sandy, sparse biosparite, marine mollusks; about 15 to 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well to very well cemented; moderately porous to porous, moldic and vugs.	2	36 - 38
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, <u>Helisoma</u> sp.; interfingering with sandy, sparse intrasparite, mollusks; about 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, moldic and vugs.	2	38 - 40
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, bryozoans, mollusks, and serpulids; about 15 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic and framework.	5	40 - 45
Limestone, very pale orange (10 YR 8/2), yellowish-gray (5 Y 7/2), and pale-yellowish-brown (10 YR 6/2); sparse to packed biosparite, Helisoma sp.; well cemented; moderately porous to porous, moldic and vugs.	5	45 - 50

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to pale-yellowish-brown (10 YR 6/2); sandy, sparse biosparite, Chione sp. and other mollusks, and corals, Montastrea sp.; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded; well to very well cemented; moderately porous to porous, moldic, interparticle, and vugs.	5	50 - 55
Limestone, yellowish-gray (5 Y 7/2) to pale-yellowish-brown (10 YR 6/2) and olive-gray (5 Y 3/2); sparse to packed biosparite, Heli-soma sp. and small pelecypods; well cemented; moderately porous to porous, moldic and vugs.	5	55 - 60
Limestone, yellowish-gray (5 Y 8/1), light-olive-gray (5 Y 6/1), and medium-light-gray (N 6); sandy, intraclastic packed biosparite, abundant serpulids; about 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), angular to rounded; well to very well cemented; moderately porous, interparticle, framework, and moldic.	4	60 - 64
Limestone, yellowish-gray (5 Y 8/1) and dark-gray (N 3); sandy, packed biosparite, mollusks; about 20 to 25 percent quartz as above, medium to very fine grained, well sorted (fine), angular to subangular; about 5 percent heavy minerals and ferrous minerals, medium to fine grained, moderately sorted (fine), angular to subrounded; very well cemented; slightly to moderately porous, moldic and interparticle.	3	64 - 67
Limestone, yellowish-gray (5 Y 8/1) and light-gray (N 7) to medium-light-gray (N 6); sandy, sparse biosparite to sandy, sparse biomicrite, mollusks; about 35 to 40 percent quartz, very coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; is a sandstone in places; loosely to well cemented; moderately porous, moldic and interparticle.	3	67 - 70
Sandstone, light-olive-gray (5 Y 6/1) to medium-dark-gray (N 4); quartzose, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 30 to 35 percent shell fragments, mollusks; about 5 to 10 percent sparite matrix; moderately to well cemented; moderately porous to porous, moldic, interparticle, and vugs.	7	70 - 77

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, medium-gray (N 6) and light-gray (N 7); sandy, packed biosparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), angular to well rounded; moderately to well cemented; porous, interparticle, moldic, and vugs.	3	77 - 80
Shells and shell fragments, mollusks including <u>Olivella</u> sp.; about 35 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 3 to 5 percent heavy minerals and phosphorite, coarse to very fine grained, poorly sorted, subrounded to well rounded; loosely cemented in places to a sandy, packed biosparite, coquinoid texture.	. 7	80 - 87
Shells and shell fragments as above; interbedded with about 30 to 40 percent sandy, sparse poorly washed biosparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, poorly sorted, subangular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subangular to well rounded; root casts; well cemented; porous, vugs.	3	87 - 90
Sand, very light gray (N 8); quartzose, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 1 percent mica; about 10 to 15 percent shell fragments.	4	90 - 94
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, mollusks; about 35 to 40 percent quartz, coarse to very fine grained, poorly sorted, subangular to well rounded; about 5 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; loosely to moderately cemented; very slightly to slightly porous.	3	94 - 97
Sandstone, yellowish-gray (5 Y 8/1); quartzose, very coarse to fine grained, moderately sorted (medium), subrounded to well rounded; about 5 percent heavy minerals and phosphorite, coarse to very fine grained, poorly sorted, subangular to well rounded; about 15 percent shell fragments, mollusks; about 5 to 10 percent micritic matrix; very loosely to loosely cemented.	3	97 - 100

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; yellowish-gray (5 Y 8/1) to light-gray (N 7) and light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, moderately sorted (medium), subrounded to well rounded; about 20 to 30 percent shell fragments; about 5 percent micritic to poorly washed sparite matrix; loosely to moderately cemented.	10	100 - 110
Sand, very light gray (N 8); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (coarse), subrounded to rounded; about 3 to 5 percent shell fragments.	12.5	110 - 122.5
Limestone, light-olive-gray (5 Y 6/1) and medium-dark-gray (N 4); sandy, sparse biosparite, mollusks including Pecten sp. and Ostrea. sp.; about 30 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded; well cemented; moderately porous to porous, moldic.	2.5	122.5 - 125
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1) and medium-light-gray (N 6); sandy, sparse to sandy, packed biosparite, mollusks; about 35 percent quartz, medium to very fine grained, moderately sorted (fine), angular to rounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; well cemented; moderately porous to porous, moldic, interparticle, and vugs; interbedded with about 10 percent sand as in 110 to 122.5 feet.	5	125 - 130
Sand as in 110 to 122.5 feet; interbedded with about 20 to 30 percent limestone as above; about 30 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite; is a sandstone in places; moderately to well cemented; porous, moldic.	4	130 - 134
Limestone as above; sandy, sparse biomicrite; moderately porous, moldic; interbedded with about 10 percent sand as above.	3	134 - 137
Sand as above; interbedded with about 20 percent limestone as above.	3	137 - 140

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1); quartzose, fine to very fine grained, well sorted (very fine), angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to subrounded; about 40 percent casts and molds including some shells; about 30 percent micritic matrix; grades to a limestone in places; sandy, packed poorly washed biosparite; moderately to well cemented; porous to very porous, moldic; interbedded with about 30 to 40 percent sand as above.	4	140 - 144
Sandstone as above; grades to a limestone in places; loosely to well cemented; interbedded with about 10 to 20 percent sand as above.	6	144 - 150
Sand as above; interbedded with about 20 percent sandstone as above; increase in micritic matrix.	4	150 - 154
Sand, very light gray (N 8); quartzose, coarse to very fine grained, moderately sorted (medium), angular to rounded; about 15 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), subangular to well rounded; interbedded with about 5 to 10 percent sandy, calcareous siltstone, light-olive-gray (5 Y 5/2); about 3 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; about 5 to 10 percent shell fragments; calcareous; loosely to moderately cemented; virtually nonporous.		154 - 160
Sandstone, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 5 percent micritic matrix; moderately cemented; slightly porous, moldic; interbedded with about 30 percent sand as above; about 25 to 35 percent shells, large mollusks.	5	160 - 165
Sandstone as above; increase in silt; about 10 percent micritic matrix; loosely to moderately cemented; interbedded with about 30 percent sand as above; about 30 percent shell fragments.	5	165 - 170
Sand, dusky-yellow (5 Y 6/4); quartzose, fine grained to silt, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to subrounded; about 1 to 3 percent mica; about 3 to 5 percent micrite, not cemented.	10	170 - 180

Lithologic Log of Well G-3298

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	2	0 - 2
Soil and peat.	2	2 - 4
Limestone, very pale orange (10 YR 8/2); fossiliferous oosparite; well cemented; moderately porous to porous, vugs.	2	4 - 6
Limestone, very pale orange (10 YR 8/2); fossiliferous to sparse oosparite, bryozoans; well cemented; porous to very porous, vugs.	4	6 - 10
Limestone, very pale orange (10 YR 8/2); sandy, sparse intrasparite, mollusks; about 25 to 30 percent quartz, fine grained, angular to subrounded; clasts consist of sandy, sparse biosparite, olive-gray (5 Y 4/1), benthic foraminifers; about 5 to 35 percent quartz, fine grained, angular to subrounded; well cemented; slightly porous.	2	10 - 12
Limestone as above; very pale orange (10 YR 8/2), yellowish-gray (5 Y 8/1), moderate-yellowish-brown (10 YR 5/4), and olive-gray (5 Y 4/1); interfingering with oolite-bearing sparse poorly washed biosparite; well cemented; moderately porous, vugs and moldic.	2	12 - 14
Limestone, very pale orange (10 YR 8/2); sparse poorly washed biosparite, mollusks and Helisoma sp.; interfingering with a sandy, sparse biosparite, pale-yellowish-brown (10 YR 6/2), benthic foraminifers; about 15 percent quartz, fine grained, angular to subrounded; well cemented; moderately porous, moldic and vugs.	2	14 - 16
Limestone as above; interfingering with a sparse biomicrite; moderately to well cemented; moderately porous.	2	16 - 18
Limestone as above; sparse biomicrite; grades to a packed biosparite, very pale orange (10 YR 8/2), mollusks; well cemented; porous, moldic and interparticle.	4	18 - 22
Limestone, very pale orange (10 YR 8/2); calcrete crust in contact with a packed poorly washed biosparite, mollusks; well cemented; moderately porous to porous, moldic and vugs.	2	22 - 24
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sandy, sparse poorly washed biosparite, mollusks; about 5 to 15 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, vugs and moldic and slightly to moderately porous at 26 to 28 feet, moldic.	4	24 - 28

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 6/1); sandy, sparse to sandy, packed poorly washed biosparite, mollusks; about 25 to 30 percent quartz, coarse to very fine grained, well sorted (fine), angular to well rounded; in contact with a sandy, sparse poorly washed biosparite, Helisoma sp.; about 20 to 25 percent quartz, fine grained, angular to subrounded; well cemented; porous, moldic and vugs.	2	28 - 30
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, packed biosparite, mollusks; about 15 percent quartz, fine grained, angular to subrounded; well cemented; porous, moldic and vugs.	2	30 - 32
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite to sandy, sparse biosparite, mollusks; about 20 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; well cemented; moderately porous, moldic and vugs; interfingering with about 20 percent sandy, sparse biosparite at 34 to 36 feet, Helisoma sp.; about 20 to 25 percent quartz, fine grained, angular to subrounded; well cemented; moderately porous to porous, moldic.	4	32 - 36
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks and corals; about 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; porous to very porous, interparticle and moldic.	4	36 - 40
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sandy, sparse to sandy, packed poorly washed biosparite and sandy, sparse to sandy, packed biosparite toward base, mollusks; about 25 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite toward base, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic and vugs.	4	40 - 44
Limestone as above; about 30 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded; is a sandstone in places; moderately to well cemented; moderately porous, moldic and vugs.	10	44 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; interbedded with about 10 percent sand, yellow-ish-gray (5 Y 8/1), quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 20 percent detrital carbonate and very small shell fragments.	2	54 - 56
Sand as above; interbedded with about 20 percent limestone as above.	2	56 - 58
Limestone as above; porous to very porous, vugs; interbedded with about 40 percent sand as above.	2	58 - 60
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, corals, Montastrea sp., and mollusks; about 20 to 25 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subrounded to rounded; well cemented; porous, moldic, vugs, and framework; interbedded with about 10 to 20 percent sand as above.	4	60 - 64
Limestone as above; about 5 percent quartz, fine grained, angular; about 3 to 5 percent heavy minerals and phosphorite.	3	64 - 67
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and light-olive-gray (5 Y 6/1); sandy, sparse to sandy, packed biosparite, corals and mollusks; about 20 percent quartz, medium to fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (very fine), angular to rounded; porous to very porous, moldic and vugs.	3	67 - 70
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 Y 7/4) and yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks; about 25 to 40 percent quartz, very coarse to very fine grained, moderately sorted (fine), angular to well rounded; about 3 to 10 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately sorted (very fine), subrounded to well rounded; well cemented; porous to very porous, vugs and moldic.	7	70 - 77

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2) to grayish-orange (10 Y 7/4); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, poorly sorted and well sorted (fine) in places, angular to well rounded; very well cemented; porous, moldic and vugs; interbedded with about 30 percent sand, quartzose, very coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (medium), subangular to rounded; about 30 percent detrital carbonate and shell fragments.	3	77 - 80
Limestone, yellowish-gray (5 Y 8/1); sandy, intraclastic sparse to sandy, intraclastic packed biosparite, bryozoans, sponge spicules, and mollusks; about 35 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to rounded; loosely to well cemented; porous, vugs; interbedded with sand as above; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 35 to 40 percent detrital carbonate and shell fragments.	4	80 - 84
Limestone as above; about 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to well rounded.	3	84 - 87
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, Balanus sp. and mollusks; about 25 to 30 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 5 to 10 percent heavy minerals, phosphorite, and collophane, coarse to fine grained, moderately sorted (fine), subangular to well rounded; moderately to well cemented; porous, vugs and moldic.	3	87 - 90
Limestone as above; about 20 to 30 percent quartz, moderately to well sorted (medium); loosely to well cemented.	7	90 - 97
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, packed biomicrite, <u>Balanus</u> sp. and mollusks including <u>Pecten</u> sp.; about 30 to 35 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to well rounded; very loosely to loosely cemented.	3	97 - 100
Limestone as above; about 40 to 45 percent quartz; is a sandstone in places.	4	100 - 104

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, Balanus sp. and mollusks; about 40 to 45 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to well rounded; very loosely cemented.	3	104 - 107
Limestone, dusky-yellow (5 Y 6/4) to pale-olive (10 Y 6/2); sandy, silty, sparse biomicrite, mollusks; about 35 percent quartz, fine grained to silt, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to subrounded; very loosely to loosely cemented.	3	107 - 110
Limestone as above; moderately to well cemented; slightly to moderately porous, moldic.	7 .	110 - 117
Limestone as above; loosely to moderately cemented.	3	117 - 120
Limestone as above; about 25 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; moderately cemented.	4	120 - 124
Sandstone, light-olive-brown (5 Y 5/6) to light-olive-gray (5 Y 5/2); quartzose, medium to very fine grained, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals, phosphorite, and ferrous minerals, very fine grained, subangular to subrounded; about 5 to 10 percent sparite matrix; about 35 to 40 percent casts and molds including some shells.	3	124 - 127
Sandstone as above; yellowish-gray (5 Y 7/4) and dusky-yellow (5 Y 6/4); about 10 percent micritic matrix; is a limestone in places.	7	127 - 134
Sandstone as above; about 20 percent casts and molds including shell fragments.	6	134 - 140
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to well rounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), angular to well rounded; about 25 to 30 percent shell fragments; interbedded with about 30 percent sandstone as above.	4	140 - 144

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, sorted packed biosparite, mollusks, coquinoid texture; about 30 percent quartz, medium to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), subangular to well rounded; well cemented; porous, interparticle and moldic.	3	144 - 147
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to well rounded; about 35 to 40 percent shell fragments; about 10 percent sparite matrix; is a limestone in places; well cemented; porous, interparticle and moldic.	3	147 - 150
Limestone as in 144 to 147 feet; about 35 to 40 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, well sorted (fine), angular to rounded.	7	150 - 157
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, sparse biosparite, mollusks; about 30 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), angular to rounded; well cemented; porous, interparticle and moldic.	3	157 - 160
Sandstone, very light gray (N 8); quartzose, medium to fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to subrounded; about 35 percent shell fragments, mollusks; about 10 to 20 percent sparite matrix; is a limestone in places; loosely to well cemented.	4	160 - 164
Sand, very light gray (N 8); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subangular to well rounded; about 3 percent shell fragments; interbedded with about 5 percent sandy, calcareous siltstone, light-olive-gray (5 Y 5/2).	3	164 - 167

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; interbedded with about 10 to 20 percent sandy, calcareous siltstone as above.	3	167 - 170
Sand as above; interbedded with about 40 percent sandy, calcareous siltstone as above.	4 .	170 - 174
Sand as above; about 40 percent sandy, clayey, calcareous siltstone.	3	174 - 177
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, moderately sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subangular to well rounded.	3	177 - 180
Claystone, light-olive-gray (5 Y 5/2) and moderate-olive-brown (5 Y 4/4) to olive-gray (5 Y 3/2); sandy and silty.	10	180 - 190
Claystone as above; not sandy.	5	190 - 195
Siltstone, light-olive-gray (5 Y 5/2); sandy and clayey.	5	195 - 200

Lithologic Log of Well G-3299

Lat 25°50'42", long 80°16'30" Sec. 7, T. 53 S., R. 41 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 20 to 30 percent soil; about 5 to 10 percent limestone, sandy micrite.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6) and dark-yellowish-brown (10 YR 4/2); sandy, sparse biosparite, bryozoans and mollusks; about 20 to 35 percent quartz, coarse to fine grained, well sorted to moderately sorted toward base (fine), angular to subrounded; about 3 to 5 percent heavy minerals and ferrous minerals, fine grained, subangular to subrounded; moderately to well cemented; porous to very porous, vugs.		4 - 10
Limestone, very pale orange (10 YR 8/2); very sandy, sparse poorly washed biosparite, abundant <u>Chione</u> sp.; about 40 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine grained, angular to rounded; well cemented; porous to very porous, interparticle, moldic, and vugs.	2	10 - 12
Lime mud, very pale orange (10 YR 8/2); sandy micrite; about 40 to 45 percent quartz, coarse to fine grained, well sorted (fine); about 5 percent shell fragments; loosely cemented in places.	2	12 - 14
Sand, grayish-orange (10 YR 7/4); quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent shell fragments; about 5 to 10 percent micrite, not cemented.	2	14 - 16
Sand, grayish-orange (10 YR 7/4); quartzose, coarse to fine grained, well to moderately sorted (medium), angular to subrounded; about 3 to 5 percent heavy minerals, fine grained, angular to subrounded; about 1 to 3 percent shell fragments at 16 to 18 feet.	8	16 - 24
Sand, grayish-orange (10 YR 7/4); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, fine grained, angular to subrounded.	2	24 - 26
Sand as in 16 to 24 feet.	2	26 - 28
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to medium grained, well sorted (coarse), angular to rounded; about 3 percent heavy minerals, medium to fine grained, well sorted (medium), subangular to rounded.	2	28 - 30
Sand as in 16 to 24 feet; very pale orange (10 YR 8/2); about 3 to 5 percent heavy minerals, medium to fine grained, well sorted (medium), subangular to rounded.	. 5	30 - 35

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, pale-yellowish-orange (10 YR 8/6) to moderate-yellowish-brown (10 YR 5/4); sandy, sparse intrasparite, mollusks; about 15 percent quartz, fine grained, angular to subangular; about 5 percent heavy minerals, very fine grained, angular to subrounded; well cemented; porous, vugs.	2	35 - 37
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and moderate-yellowish-brown (10 YR 5/4); sandy, intraclastic packed biosparite, mollusks and benthic foraminifers; about 20 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals, fine grained, subrounded to rounded; very well cemented; porous, vugs, moldic, and interparticle.	3	37 - 40
Limestone as above; about 5 to 10 percent quartz, medium to fine grained, well sorted (medium), angular to subrounded.	4	40 - 44
Limestone as above; corals and mollusks; well to very well cemented; porous to very porous; interbedded with sand as cavity-filling detritus; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 15 percent heavy minerals and phosphorite, fine grained, angular to well rounded.	3	44 - 47
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4) to moderate-yellowish-brown (10 YR 5/4); sandy, sparse biosparite, mollusks, corals, and bryozoans; about 10 to 25 percent quartz in places, medium to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), angular to well rounded; well cemented; porous, framework and vugs.	2	47 - 49
Limestone, yellowish-gray (5 Y 8/1 to 5 Y 7/2) to very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite to sandy, sparse poorly washed biosparite, mollusks including gastropods; about 30 to 35 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), subangular to rounded; moderately to very well cemented; very slightly to moderately porous, moldic and vugs.	3	49 - 52
Limestone as above; about 15 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), angular to rounded; porous, moldic, interparticle, and vugs.	2	52 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2) and dark-yellowish-orange (10 YR 6/6); quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 20 percent heavy minerals, phosphorite, and collophane, coarse to fine grained, well sorted (fine), subrounded to well rounded; about 30 to 40 percent detrital carbonate and shell fragments, mollusks; about 10 percent sparite matrix; is a limestone in places; concretionary; porous to very porous, vugs; interbedded with about 10 to 20 percent sand, same properties as in sandstone; about 20 percent detrital carbonate and shell fragments.		54 - 56
Sand as above; interbedded with about 10 to 20 percent sandstone as above.	2	56 - 58
Sand as above; interbedded with sandstone at 59 to 59.5 feet; quartz-ose, fine to very fine grained, well sorted (fine), angular to subangular; about 15 percent heavy minerals, fine grained, angular to subrounded; about 20 percent detrital carbonate and shell fragments; about 10 to 30 percent sparite matrix; is a limestone in places; very well cemented; moderately porous to porous, vugs.	2	58 - 60
Sandstone, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 5/2); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, fine grained, angular to subrounded; about 15 percent small shell fragments, mollusks; about 10 percent sparite matrix; well cemented; concretionary; interbedded with about 35 to 40 percent sand, same properties as in sandstone.	4	60 - 64
Sand as above; interbedded with limestone at 65 to 66 feet, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks, Encope sp., and echinoids; about 40 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals, fine grained, subrounded to well rounded; well cemented; porous, vugs.	3	64 - 67
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, moderately sorted to well sorted (fine) in places, angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent shell fragments, mollusks; about 10 to 20 percent sparite matrix; concretionary in places; well cemented; porous, vugs; interbedded with about 40 to 50 percent sand, same properties as in sandstone.	7	67 - 74

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks; about 30 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), angular to subrounded; moderately to well cemented; porous, vugs; interbedded with sand as in 64 to 67 feet.	3	74 - 77
Limestone, yellowish-gray (5 Y 8/1 to 5 Y 7/2) and moderate-yellowish brown (10 YR 5/4); sandy, packed biosparite, mollusks; about 30 to 35 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals, phosphorite, and collophane, coarse to fine grained, well sorted (fine), angular to well rounded; well cemented; porous, moldic and interparticle.	3	77 - 80
Limestone, yellowish-gray (5 Y 7/2); sandy, intraclastic packed biosparite to sandy, sorted packed biosparite in places, mollusks, coquinoid texture; about 25 to 35 percent quartz, coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (medium), angular to rounded; moderately to well cemented; porous, interparticle and moldic.	4	80 - 84
Limestone as above; in contact with about 40 percent sandy, sparse poorly washed biosparite, mollusks including gastropods and Ostrea sp.; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, moldic and vugs.	3	84 - 87
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biosparite, mollusks; about 25 percent quartz, fine to very fine grained, angular to subangular; about 10 percent heavy minerals, ferrous minerals, and phosphorite, fine grained, angular to well rounded; well cemented; moderately porous to porous, moldic and vugs.	3	87 - 90
Limestone, very pale orange (10 YR 8/2) and yellowish-gray (5 Y 7/2); sandy, sparse biosparite, mollusks and corals; about 15 to 20 percent quartz, coarse to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, ferrous minerals, and phosphorite, coarse to very fine grained, moderately to well sorted (fine), angular to well rounded; very well cemented; moderately porous to porous, moldic, framework, and vugs.	4	90 - 94

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks including <u>Chione</u> sp.; about 20 to 25 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, moldic.	3	94 – 97
Limestone, yellowish-gray (5 Y 8/1) to medium-gray (N 5); sandy, sparse poorly washed biosparite, mollusks; about 20 to 25 percent quartz, coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subrounded to well rounded; loosely to well cemented; porous, moldic and vugs; interbedded with about 30 to 40 percent sand, quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subrounded to well rounded, subrounded to well rounded; about 20 percent shell fragments.	3	97 - 100
Sandstone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 30 percent shell fragments; about 10 to 20 percent sparite matrix; is a limestone in places; loosely to well cemented; concretionary toward base; porous, vugs; interbedded with about 20 to 30 percent sand, same properties as in sandstone; about 20 percent shell fragments.	7	100 - 107
Sandstone, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, very coarse to fine grained, moderately sorted (medium), angular to rounded; about 25 to 30 percent small shell fragments, mollusks; loosely to well cemented; porous, vugs; interbedded with about 30 percent sand, same properties as in sandstone.	3	107 - 110
Sandstone as above; quartz is poorly sorted; heavy minerals and phosphorite range in size from granules to very fine grained, poorly sorted; porous, vugs and interparticle; interbedded with about 25 to 30 percent sand, same properties as in sandstone; about 30 percent shell fragments (large and small), mollusks and serpulids.	4	110 - 114
Sand as above; about 10 percent heavy minerals and phosphorite; about 40 to 50 percent shells and shell fragments, <u>Ostrea</u> sp., <u>Olivella</u> sp., <u>Turritella</u> sp., and serpulids.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, mollusks and serpulids; about 40 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, poorly sorted, subangular to well rounded.	3	117 - 120
Sand as above; about 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (medium), subangular to well rounded; about 30 to 35 percent shell fragments.	4	120 - 124
Sand as above; very light gray (N 8) to medium-light-gray (N 6); about 5 to 10 percent heavy minerals and phosphorite; about 25 to 35 percent shell fragments, mollusks, fish teeth, and bryozoans.	13	124 - 137
Sand as above; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (medium), angular to rounded; about 20 to 30 percent shell fragments, mollusks, bryozoans, Balanus sp., and benthic foraminifers; loosely cemented in places.	17	137 - 154
Sand as above; interbedded with about 30 to 40 percent limestone, light-olive-gray (5 Y 5/2); sandy, sparse biomicrite, mollusks; about 25 to 30 percent quartz, coarse to fine grained, moderately sorted (medium), angular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to well rounded; very loosely to loosely cemented.	3	154 - 157
Sand as above; interbedded with about 20 percent limestone as above; silty.	3	157 - 160
Limestone as in 154 to 157 feet; very loosely to moderately cemented.	10	160 - 170
Limestone as above; dusky-yellow (5 Y 6/4); about 25 to 35 percent quartz, coarse to fine grained, well sorted (fine), subangular to rounded; very loosely to well cemented in places.	14	170 - 184
Limestone as above; about 35 percent quartz, medium grained to silt, well sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; loosely cemented.	3	184 - 187

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, poorly sorted, angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), angular to rounded; about 20 to 25 percent shell fragments, mollusks; about 15 to 30 percent micrite, not cemented; loosely cemented into a limestone in places, up to about 30 percent of sample.	13	187 - 200
Sand as above; quartz is moderately sorted (fine); heavy minerals and phosphorite are moderately sorted (fine), angular to well rounded; about 15 to 20 percent shell fragments; loosely cemented in places into about 5 percent limestone.	4	200 - 204
Silt, yellowish-gray (5 Y 7/2); about 25 percent quartz, medium to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent heavy minerals, fine grained, angular to subrounded; about 10 percent shell fragments, mollusks; about 20 percent micrite, not cemented.	3	204 - 207
Silt as above; about 15 to 20 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals; about 10 percent shell fragments.	3	207 - 210
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), angular to rounded; about 10 to 15 percent shell fragments; about 10 percent micrite, not cemented; very loosely to loosely cemented in places into a sandstone.	4	210 - 214
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals, medium to very fine grained, moderately sorted (medium), angular to subrounded; about 25 percent shell fragments, mollusks; about 20 percent micritic matrix.	3	214 - 217
Limestone, moderate-olive-brown (5 Y 4/4); sandy, sparse biosparite, mollusks; about 30 percent quartz, fine grained, angular to sub-rounded; about 5 percent heavy minerals and phosphorite, fine grained, subrounded; loosely to well cemented; slightly to moderately porous, moldic.	3	217 - 220

Description	Thick- ness (feet)	Depth, feet below land surface
Redrilled; sand, yellowish-gray (5 Y 8/1); quartzose, medium grained to silt, moderately sorted (medium), angular to subangular; about 5 to 10 percent heavy minerals, medium to fine grained, well sorted	10	220 - 230
(medium), angular to subrounded; about 3 percent shell fragments; about 5 percent micrite, not cemented; cemented in places into about 5 percent sandy siltstone.		
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (medium), angular to subrounded; about 10 to 15 percent heavy minerals, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent shell fragments; interbedded with siltstone at 232.5 to 234 feet; loosely cemented.	4	230 - 234
Sand as above; interbedded with about 10 percent calcareous, sandy, clayey siltstone to very calcareous toward base.	6	234 - 240
Sand as above; about 15 to 20 percent heavy minerals; interbedded with about 5 percent silty micrite.	4	240 - 244
Sand as above; about 10 to 15 percent heavy minerals, medium to fine grained, well sorted (medium), angular to subrounded; interbedded with siltstone at 246.5 to 247 feet and 249.5 to 250 feet.	6	244 - 250
Sand as above; interbedded with silty, calcareous claystone at 252.5 to 253 feet.	4	250 - 254
Sand as above; interbedded with about 5 percent calcareous, clayey siltstone.	3	254 - 257
Sand as above; about 1 to 3 percent shell fragments; interbedded with very calcareous siltstone at 258 to 259 feet and 259.5 feet to 260 feet.	3	257 - 260
Siltstone as above; interbedded with about 30 percent sand as above.	4	260 - 264
Sand as above; about 3 to 5 percent shell fragments; interbedded with about 20 to 30 percent siltstone as above.	13	264 - 277
Siltstone as above; interbedded with about 40 to 50 percent sand as above.	3	277 - 280

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; quartz is coarse to fine grained, well sorted (medium), angular to subrounded; interbedded with about 20 percent siltstone as above.	4	280 - 284
Sand as above; quartz is medium to fine grained, well sorted (medium); interbedded with about 10 to 20 percent siltstone as above.	3	284 - 287
Sand as above; interbedded with about 30 percent siltstone as above.	3	287 - 290
Sand as above; about 10 to 15 percent heavy minerals and phosphorite, very coarse to fine grained, moderately sorted (medium), subrounded to rounded; interbedded with about 40 percent siltstone as above; grades to a claystone in places.	5	290 - 295
Claystone as above; interbedded with about 40 percent sand as above.	5	295 - 300
No recovery.	5	300 - 305
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, moderately sorted (very fine), angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded.	5	305 - 310

Lithologic Log of Well G-3300

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, brownish-gray (5 YR 4/1); quartzose, coarse to fine grained, well sorted (medium), angular to well rounded; about 30 percent organics interbedded with about 10 percent limestone, very pale orange (10 YR 8/2); sandy oosparite; about 25 percent quartz, fine grained, angular to subangular; well cemented; porous, vugs.	3	0 - 3
Sand as above; pale-yellowish-brown (10 YR 6/2); about 15 to 20 percent organics.	1	3 - 4
Sand as above; about 10 percent organics.	2	4 - 6
Sand as above; quartz is moderately sorted (medium); interbedded with about 10 to 20 percent limestone at about 7 to 8 feet as in 0 to 3 feet.	2	6 - 8
Sand as above; interbedded with about 40 to 50 percent limestone, very pale orange (10 YR 8/2); sandy, sparse oosparite, mollusks; about 10 percent quartz, coarse to fine grained, well sorted (medium), angular to well rounded; well cemented; porous, vugs.	2	8 - 10
Limestone as above; interbedded with cavity-filling sand, dark-yellowish-brown (10 YR 4/2); quartzose, coarse to fine grained, moderately sorted (medium), angular to well rounded.	2	10 - 12
Limestone as above; grades toward base to very sandy sparite in places; about 15 percent quartz; very porous, vugs; interbedded with a cavity-filling detritus, silty, sandy micrite (not cemented); about 20 to 30 percent quartz, coarse grained to silt, poorly sorted, angular to subrounded; about 10 percent ferrous minerals, fine grained to silt, well sorted (very fine), angular to subangular; reduces porosity considerably.		12 - 16
Sand, very pale orange (10 YR 8/2); quartzose, coarse to very fine grained, well sorted (medium), angular to subrounded; about 10 percent small shell fragments, mollusks; about 30 to 40 percent micrite, not cemented.	2	16 - 18
Sandstone, yellowish-gray (5 Y 7/2) to very pale orange (10 YR 8/2) and pale-yellowish-orange (10 YR 8/6); quartzose, medium to very fine grained, moderately sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; about 25 to 30 percent shell fragments, mollusks; about 20 percent sparite matrix to poorly washed sparite matrix in places; well cemented; porous, moldic, vugs, and interparticle; interbedded with about 30 to 40 percent sand as above; quartz is moderately sorted (medium).	2	18 - 20

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Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 percent heavy minerals, fine grained, angular to subrounded; interbedded with about 20 to 30 percent limestone, yellowish-gray (5 Y 7/2) and grayish-orange (10 YR 7/4); sandy, sorted packed biosparite, mollusks, coquinoid texture; about 40 percent quartz, coarse to very fine grained, poorly sorted, angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to well rounded; is a sandstone in places; well cemented.	2	20 - 22
Sandstone, yellowish-gray (5 Y 7/2); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent shell fragments; about 20 percent poorly washed sparite matrix; is concretionary and contains burrow casts; moderately to well cemented; very porous, vugs; interbedded with about 20 percent sand, quartzose, medium to very fine grained, well sorted (fine), angular to subangular; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 to 15 percent small shell fragments; about 30 percent micrite, not cemented.	2	22 - 24
Sandstone as above; yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals; about 20 percent small shell fragments; about 15 to 20 percent sparite matrix; concretionary in places; porous, vugs and interparticle; interbedded with sand as above; about 10 to 15 percent micrite, not cemented.	2	24 - 26
Sand as above; about 20 to 25 percent shell fragments; interbedded with about 10 to 20 percent sandstone as above.	2	26 - 28
Sand as above; interbedded with about 10 to 15 percent sandstone as above; about 5 percent heavy minerals, very fine grained, angular to subrounded; about 5 to 10 percent sparite matrix.	2.5	28 - 30.5
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to well rounded; about 20 percent sparite matrix; very well cemented; moderately porous.	1.5	30.5 - 32

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2) and grayish-orange (10 YR 7/4); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded; about 25 percent shells and shell fragments, mollusks and benthic foraminifers, Archais sp.; about 15 to 25 percent sparite matrix; well cemented; moderately porous to porous, vugs; solution holes are partially filled with semicemented sand as in 22 to 24 feet.	2	32 - 34
Sandstone as above; yellowish-gray (5 Y 7/2); quartz is moderately sorted (fine); about 20 percent shell fragments; about 20 percent sparite matrix; moderately to well cemented; porous, vugs and interparticle.	2	34 - 36
Sandstone, yellowish-gray (5 Y 8/1) and very pale orange (10 YR 8/2) to grayish-orange (10 YR7/4); quartzose, coarse to fine grained, moderately to well sorted (medium), subangular to rounded; about 15 percent heavy minerals and phosphorite, very coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 25 percent shell fragments; about 5 percent clasts of a gray sandstone; about 10 to 30 percent sparite matrix; is a limestone in places; well cemented; porous, moldic and vugs; interbedded with about 30 percent sand, quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), angular to well rounded; phosphatized bone chips.	2	36 - 38
Sand as above; interbedded with about 5 to 10 percent sandstone as above.	2	38 - 40
Sand as above; interbedded with about 30 to 40 percent sandstone as above.	2	40 - 42
Sandstone as above; interbedded with about 40 to 50 percent sand as above.	2	42 - 44
Sandstone as above; phosphorite is well sorted (fine); about 20 to 25 percent shell fragments; very well cemented; moderately porous to porous, vugs; interbedded with about 10 to 20 percent sand as above.	2	44 - 46

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; interbedded with about 20 percent sand as above; about 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 to 20 percent small shell fragments.	2	46 - 48
Sandstone, yellowish-gray (5 Y 8/1) to very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); quartzose, medium to very fine grained, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals, coarse to fine grained, moderately sorted (medium), angular to rounded; about 10 to 15 percent small shell fragments; about 5 to 10 percent poorly washed sparite matrix; moderately to well cemented; porous, vugs; interbedded with about 20 percent sand as above.	2	48 - 50
Sandstone as above; about 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), angular to rounded; about 25 to 30 percent detrital carbonate and shell fragments; about 15 to 30 percent sparite matrix; well cemented; porous to very porous, vugs.	2	50 - 52
Sandstone as above; quartz is moderately sorted (fine).	2	52 - 54
Limestone, yellowish-gray (5 Y 7/2), very pale orange (10 YR 8/2), and dark-grayish-orange (10 YR 6/6); sandy, packed biosparite, corals and mollusks; about 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to rounded; well cemented; porous to very porous, moldic, framework, interparticle, and vugs.	2	54 - 56
Limestone as above; very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); about 10 to 20 percent quartz, fine grained, angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), angular to subrounded; well to very well cemented; porous to very porous.	6	56 - 62
Limestone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4); sandy, sparse biosparite, corals; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals and ferrous minerals, fine grained, angular; very well cemented; porous to very porous, vugs.	4	62 - 66

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4); sandy, packed biosparite, mollusks and corals; about 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals and phosphorite, fine grained, angular; well cemented; porous, vugs and framework.	2	66 - 68
Limestone as above; Chione sp. and corals, Montastrea sp.; about 20 percent quartz, very porous, moldic, framework, and vugs.	2	68 - 70
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sandy, sparse intrasparite, mollusks; about 30 to 35 percent quartz, medium to very fine grained, moderately to well sorted (fine), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, well sorted (fine), angular to well rounded; well cemented; porous, vugs.	4	70 – 74
Limestone as above; interbedded with about 20 percent sand, quartz-ose, medium to fine grained, well sorted (fine), angular to sub-rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, well sorted (fine), angular to well rounded; about 25 to 30 percent detrital carbonate and shell fragments.	3	74 - 77
Sand as above; cemented into a sandstone at 79 to 79.5 feet; about 10 to 20 percent detrital carbonate and shell fragments; about 10 to 30 percent sparite matrix; is a limestone in places; very well cemented; moderately porous, vugs.	3	77 - 80
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, moderately sorted (fine), subangular to rounded; about 10 percent shell fragments; cemented in places into a sandstone; about 20 percent shell fragments; about 10 to 20 percent sparite matrix; loosely to well cemented.	4	80 - 84
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sandy, intraclastic sparse biosparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), angular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subangular to well rounded; moderately to well cemented; moderately porous, interparticle; interbedded with sand as above.	3	84 - 87

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; grades to a sandy sparite in places; about 30 to 35 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), angular to rounded; moderately porous to porous toward base, vugs and interparticle; interbedded with about 30 to 40 percent sand as above and 10 to 20 percent at 90 to 94 feet.	7	87 - 94
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biosparite, benthic foraminifers and mollusks; about 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded; well cemented; porous to very porous, vugs; interbedded with about 25 to 30 percent sand, quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded; about 20 percent small shell fragments.	3	94 - 97
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biosparite, mollusks; about 30 to 35 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subangular to well rounded; well cemented; porous, interparticle and vugs; interbedded with about 20 to 30 percent sand as above.	3	97 - 100
Limestone as above; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals; moderately to well cemented.	7	100 - 107
Limestone as above; very well cemented; moderately porous, vugs; interbedded with about 20 percent sand as above.	3	107 - 110
Limestone as above; about 40 percent quartz; about 5 to 10 percent heavy minerals and phosphorite.	4	110 - 114
Limestone as above; about 40 to 45 percent quartz; is a sandstone in places; interbedded with about 30 percent sand as above, quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1 and 5 Y 7/2) to dusky-yellow (5 Y 6/4); sandy, intraclastic sparse to sandy, intraclastic packed oosparite, Balanus sp. and mollusks; about 35 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, very coarse to very fine grained, poorly sorted, subangular to well rounded; well cemented; porous to very porous, moldic, vugs, and interparticle.	3	117 - 120
Limestone, yellowish-gray (5 Y 8/1) to dusky-yellow (5 Y 6/4); sandy, sparse biosparite, mollusks; about 35 to 45 percent quartz, coarse to very fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, moderately sorted (very fine), subangular to subrounded; well cemented, moderately porous to porous, moldic and vugs.	4	120 - 124
Sandstone, yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4); quartzose, coarse to very fine grained, moderately sorted (medium), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, well sorted (fine), subangular to well rounded; about 20 to 30 percent shell fragments; about 5 to 20 percent sparite matrix; is a limestone in places; moderately to well cemented; porous, vugs; interbedded with about 30 percent sand, quartzose, coarse to medium grained, well sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 20 to 30 percent shells and shell fragments.	6	124 - 130
Sand as above; about 15 to 20 percent shell fragments, mollusks and echinoid spines; interbedded with about 30 to 40 percent sandstone as above.	4	130 - 134
Sandstone, yellowish-gray (5 Y 7/2); quartzose, fine to very fine grained, well sorted (fine), angular; about 10 to 15 percent heavy minerals, coarse to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent small shell fragments; about 20 to 30 percent sparite matrix; concretionary and root casts; very well cemented; porous to very porous, vugs; interbedded with sand at 135 to 136 feet, same properties as in sandstone; about 5 to 10 percent shell fragments.	6	134 - 140
Sandstone as above; mollusks including <u>Pecten</u> sp. and <u>Balanus</u> sp.; interbedded with about 20 percent sand as above.	7	140 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1 to 5 Y 7/2) and dusky-yellow (5 Y 6/4); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, angular to subrounded; moderately to well cemented; porous, vugs.	3	147 - 150
Limestone as above; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous, moldic and vugs; interbedded with about 20 percent sand as in 134 to 140 feet.	4	150 - 154
Limestone as above; interbedded with sand as above, quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), angular to rounded.	3	154 - 157
Sandstone, yellowish-gray (5 Y 8/1 to 5 Y 7/2); quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, moderately sorted (fine), angular to rounded; about 20 to 25 percent shell fragments; about 15 to 20 percent sparite matrix; well cemented; porous, vugs.	3	157 - 160
Sandstone as above; quartz is well sorted (fine); about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 25 to 30 percent shell fragments; about 10 to 20 percent sparite matrix; very well cemented; interbedded with about 20 percent sand, quartzose, coarse to fine grained, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), angular to rounded; about 25 percent shell fragments.	4	160 - 164
Sandstone as above; about 15 percent heavy minerals, phosphorite, and collophane, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 30 percent shell fragments; about 10 percent sparite matrix; well cemented; porous to very porous, vugs.	3	164 - 167

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1 to 5 Y 7/2); sandy, sparse bio- sparite, mollusks and crab claws; about 35 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded to rounded; well ce- mented; porous to very porous, moldic, interparticle, and vugs.	7	167 - 174
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); quartzose, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 10 to 15 percent small shell fragments; about 5 to 10 percent sparite matrix; concretionary; very well cemented; very porous, vugs; in contact with limestone; sandy, packed biosparite, Olivella sp., Pecten sp., and other mollusks, coquinoid texture; about 25 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to very fine grained, moderately sorted (fine), angular to rounded; is a sandstone in places; very well cemented; porous, vugs; interbedded with about 20 to 30 percent sand, quartzose, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded; about 20 percent small shell fragments.	3	174 - 177
Limestone as above; mollusks; about 15 to 20 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subangular to well rounded, moderately porous to porous, moldic; interbedded with about 30 percent sand as above; about 15 to 20 percent heavy minerals, fine grained, subangular; about 10 percent shell fragments.	3	177 - 180
Limestone as above; porous, moldic and vugs; interbedded with about 20 percent sand as above.	4	180 - 184
Limestone as above; about 20 to 25 percent heavy minerals, phosphorite, and ferrous minerals; very porous, vugs; interbedded with about 10 percent sand.	3	184 - 187
Limestone as above; about 15 to 20 percent heavy minerals and phosphorite; porous, moldic and vugs; interbedded with about 20 percent sand as above.	3	187 - 190

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above.	7	190 - 197
Limestone as above; very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); about 30 percent quartz; about 10 to 15 percent heavy minerals and phosphorite; moderately to well cemented; moderately porous to porous, moldic and vugs.	3	197 - 200
Limestone, grayish-orange (10 YR 7/4) to light-gray (N 7); sandy, sparse biosparite, echinoid spines and mollusks; about 30 percent quartz, coarse to fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), subrounded to well rounded; moderately to well cemented; moderately porous, vugs.	4	200 - 204
Limestone as above; moderately cemented; slightly to moderately porous, interparticle and vugs.	3	204 - 207
Limestone as above; yellowish-gray (5 Y 7/2) and dusky-yellow (5 Y 6/4); is a sandy, sparse poorly washed biosparite in places; about 20 to 25 percent quartz; about 10 to 15 percent heavy minerals, phosphorite, and ferrous minerals; moderately to well cemented; slightly to moderately porous and moderately porous to porous in places, moldic.	3	207 - 210
Limestone as above; yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, sparse poorly washed biosparite; about 20 percent quartz; about 10 percent heavy minerals and phosphorite; slightly to moderately porous.	4	210 - 214
Limestone as above; yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4); sandy, sparse biosparite; about 25 percent quartz; about 15 percent heavy minerals and phosphorite.	3	214 - 217
Limestone as above; moderately porous, moldic and vugs.	3	217 - 220
Limestone, pale-olive (10 Y 6/2); sparse poorly washed biosparite, mollusks; about 20 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to rounded; moderately to well cemented; moderately porous, moldic.	7	220 - 227

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, pale-olive (10 Y 6/2); sandy, silty, sparse biomicrite, foraminifers and mollusks; about 10 to 15 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to subrounded; moderately cemented; slightly to moderately porous, moldic.	28	227 - 255
Limestone as above; about 30 to 35 percent quartz; about 15 percent heavy minerals; moderately porous, interparticle and moldic.	5	255 - 260
Limestone, pale-olive (10 Y 6/2); sandy, fossiliferous micrite; about 10 to 20 percent quartz, fine grained, angular to subangular; about 5 to 15 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; moderately cemented; virtually nonporous to slightly porous and slightly to moderately porous at 265 to 270 feet, moldic.	10	260 - 270
Limestone as above; slightly to moderately porous, vugs and moldic.	10	270 - 280
Limestone as above; about 10 percent quartz, medium to very fine grained, moderately sorted (fine), angular to subangular; about 3 to 5 percent heavy minerals; very slightly to slightly porous, moldic.	20	280 - 300
Limestone as above; grading to a sandy, sparse biomicrite; slightly porous.	10	300 - 310
Limestone as above; loosely to well cemented; very slightly porous.	10	310 - 320
Limestone as above; about 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to subrounded; slightly porous, moldic.	10	320 - 330

Lithologic Log of Well G-3301

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4.5	0 - 4.5
Lime mud, very pale orange (10 YR 8/2) to olive-gray (5 Y 4/1); sandy micrite; about 10 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 25 to 30 percent shell fragments; interbedded with about 30 percent organics and soil.	2	4.5 - 6.5
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) to pale-yellowish brown (10 YR 6/2); packed poorly washed biosparite, bryozoans and abundant benthic foraminifers; about 5 percent quartz, coarse to fine grained, well sorted (medium), subangular to subrounded; about 3 percent heavy minerals, fine grained, subangular; well cemented; slightly to moderately porous.	0.5	6.5 - 7
Limestone, light-olive-gray (5 Y 6/1) to grayish-orange (10 YR 7/4); sandy, fossiliferous micrite; about 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to rounded; well cemented; moderately porous; in contact with a sparse dolomitic biomicrite, pale-yellowish-brown (10 YR 6/2) and dusky-yellowish-brown (10 YR 2/2), gastropods, bryozoans, and benthic foraminifers; very well cemented; virtually nonporous; interbedded with sandy micrite as in 4.5 to 6.5 feet; contains peat.	1	7 - 8
Limestone, yellowish-gray (5 Y 7/2), moderate-yellowish-brown (10 YR 5/4), and dark-yellowish-brown (10 YR 4/2); sandy, sparse poorly washed biosparite to sandy, sparse biomicrite as above; about 20 to 35 percent quartz in places, coarse to fine grained, moderately sorted (medium), angular to subrounded; well cemented; moderately porous, moldic.	1	8 - 9
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4), moderate-yellowish-brown (10 YR 5/4), grayish-orange-pink (5 YR 7/2), and olive-gray (5 Y 4/1), mottled; sandy, sparse biomicrite, gastropods, pelecypods, and other mollusks; neomorphic calcite in tests and matrix; about 25 percent quartz, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular; rodochrosite specks in matrix; well cemented; moderately porous, moldic.	1	9 - 10

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biomicrite, pelecypods and gastropods; neomorphic calcite in matrix; about 35 percent quartz, coarse to very fine grained, poorly sorted, angular to rounded; about 3 percent heavy minerals, medium to very fine grained, well sorted (very fine), angular to subrounded; well cemented; moderately porous, moldic and vugs.	1	10 - 11
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse dismicrite, mollusks; about 20 to 25 percent quartz, coarse to medium grained, well sorted (coarse), subrounded; about 1 to 3 percent heavy minerals and ferrous minerals, fine grained, subangular; moderately to well cemented; slightly porous and moderately porous to porous at 12 to 13 feet.	3	11 - 14
Limestone as above; grades to a sandy, packed biomicrite in places at 14 to 15 feet, mollusks including <u>Chione</u> sp., and gastropods; neomorphic calcite in matrix; about 35 to 40 percent quartz, very coarse to fine grained, moderately sorted (medium), angular to subrounded; about 5 percent heavy minerals; moderately to well cemented; porous.	2	14 - 16
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals, fine grained, subrounded; about 3 to 5 percent shell fragments; interbedded with about 30 percent limestone as above; grades to a sandstone in places.	4	16 - 20
Sand, pinkish-gray (5 YR 8/1); quartzose, very coarse to very fine grained, well sorted (medium), angular to rounded; about 1 percent heavy minerals, very fine grained, subangular to subrounded; about 1 percent shell fragments; about 5 to 10 percent sandstone as above	2	20 - 22
Sand as above; interbedded with about 20 percent shells and shell fragments, Ostrea sp., Turritella sp., and other mollusks.	2	22 - 24
Sand as above; about 30 to 40 percent shells and shell fragments; loosely to moderately cemented in places.	2	24 - 26
Shells and shell fragments, Ostrea sp., Turritella sp., gastropods, and other mollusks; about 30 to 40 percent sand as above; loosely to moderately cemented in places into a sandy, packed biomicrite (coquina).	4	26 - 30

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 40 to 45 percent shells and shell fragments grading to about 20 to 30 percent at 32 to 38 feet; abundant Turritella sp., large.	8	30 - 38
Sand, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, medium to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent phosphorite and heavy minerals, medium to very fine grained, well sorted (fine), subangular to subrounded; about 20 percent shell fragments grading to about 10 to 15 percent at 42 to 44 feet.	6	38 - 44
Sand, yellowish-gray (5 Y 7/2); quartzose, medium grained to silt, moderately sorted (fine), angular to subangular; about 3 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded; about 10 percent mica; about 25 to 30 percent shell fragments.	4	44 - 48
Shells and shell fragments, Ostrea sp. and other mollusks, large with pitted texture; about 40 to 50 percent sand, quartzose, granules to very fine grained, poorly sorted, angular to rounded; about 5 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to subrounded.	2	48 - 50
Shells and shell fragments as above; about 20 to 30 percent sand as above; about 5 percent phosphorite and heavy minerals, very coarse to very fine grained, poorly sorted, angular to subrounded.	6	50 - 56
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, poorly sorted, angular to rounded; about 5 percent phosphorite and heavy minerals, granules to very fine grained, moderately sorted (fine), subangular to rounded; about 30 percent shell fragments as above, some large; about 20 to 25 percent micrite, not cemented.	2	56 - 58
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent phosphorite and heavy minerals, coarse to fine grained, well sorted (fine), angular to subrounded; about 30 percent shell fragments, mollusks, smaller than above.	2	58 - 60
Sand, yellowish-gray (5 Y 7/2); quartzose, very coarse to fine grained, moderately to well sorted (fine), angular to rounded; about 5 to 10 percent phosphorite and heavy minerals, coarse to fine grained, well sorted (fine), angular to subrounded; about 20 to 25 percent shell fragments; about 5 to 10 percent micrite, not cemented.	13	60 - 73

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1) and light-gray (N 7) to dark-gray (N 3); sandy, packed biomicrite, mollusks, corals, Encope sp., and bryozoans; about 25 to 30 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; about 5 to 10 percent phosphorite and heavy minerals, very coarse to fine grained, poorly sorted, subrounded to rounded; moderately to well cemented; porous, interparticle and moldic.	4	73 - 77
Limestone as above; Balanus sp.; about 30 percent quartz, coarse to fine grained, well sorted (medium), rounded.	3	77 - 80
Limestone, light-olive-gray (5 Y 6/1) and light-gray (N 7) to medium-light-gray (N 6); sandy, sparse biomicrite, Ostrea sp., Balanus sp., and bryozoans; about 15 to 20 percent quartz, coarse to fine grained, moderately sorted (medium), rounded; about 1 to 5 percent heavy minerals, very coarse to fine grained, poorly sorted, angular to subrounded; moderately cemented; porous, framework, moldic, and interparticle.	4	80 - 84
Limestone as above; about 10 percent quartz, coarse to very fine grained, moderately sorted (medium), subangular to subrounded; about 1 to 3 percent heavy minerals, fine to very fine grained, subangular to subrounded; loosely cemented and loosely to moderately cemented at 90 to 94 feet.	10	84 - 94
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, packed intramicrite, mollusks including pelecypods and Ostrea sp.; about 10 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 1 to 3 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded; moderately to well cemented; moderately porous to porous, moldic.		94 - 100
Limestone, yellowish-gray (5 Y 8/1) and light-gray (N 7) to light-medium-gray (N 6); packed biomicrite, mollusks, and serpulids; about 5 percent heavy minerals at 104 to 114 feet, fine grained, subangular to subrounded; moderately to well cemented; moderately porous to porous, interparticle, moldic, and vugs.	14	100 - 114
Limestone as above; grades to a sandy, packed intramicrite in places; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals, fine grained, subangular to subrounded; moderately to well cemented; moderately porous to porous, interparticle.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as in 100 to 114 feet; grades to a sandy, packed biomicrite, mollusks, Balanus sp., and echinoids; about 25 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, fine grained, subangular to subrounded; moderately to well cemented; porous, moldic and interparticle.	27	117 - 144
Limestone as above; about 10 to 20 percent quartz, medium to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals and phosphorite; loosely cemented.	3	144 - 147
Limestone as above; grades to a sandstone in places, quartzose, very coarse to fine grained, poorly to well sorted in places, subangular to rounded; about 10 to 25 percent detrital carbonate and shell fragments; about 5 to 10 percent heavy minerals, ferrous minerals, and phosphorite, coarse to fine grained, moderately sorted (fine), subangular to rounded; about 20 percent sparite matrix; well cemented; slightly to moderately porous, small vugs.	3	147 - 150
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to fine grained, moderately sorted (medium), subangular to well rounded; about 15 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (medium), subrounded to well rounded; about 1 percent muscovite; interbedded with about 30 percent sandstone as above; quartzose, coarse to very fine grained, poorly sorted, angular to rounded; about 5 to 10 percent sparite matrix; well cemented.	4	150 - 154
Sand as above; minor shell fragments; about 5 percent sandstone as above.	3	154 - 157
Sand as in 150 to 154 feet.	3	157 - 160
Sand as above; interbedded with about 25 to 30 percent sandstone as above; grades to a limestone in places; sandy, sparse poorly washed biosparite; well cemented.	5	160 - 165
Sand as above; interbedded with sandstone as above at 169 feet.	4	165 - 169
Sand as above; interbedded with about 20 percent silty, sandy, fossiliferous micrite; minor mica.	1	169 - 170
Sand as above; interbedded with about 30 percent sandstone as above; about 5 to 10 percent shell fragments.	5	170 - 175

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; grades into a limestone in places; sandy, silty micrite; interbedded with about 30 percent sand as above.	5	175 - 180
Sand as above; about 5 percent muscovite; interbedded with about 10 to 15 percent sandstone and 10 percent limestone as above.	5	180 - 185
Sandstone, yellowish-gray (5 Y 7/2); quartzose, granules to very fine grained, poorly sorted, angular to rounded; about 20 percent heavy minerals and phosphorite, granules to coarse grained and fine to very fine grained in places, moderately sorted (fine), rounded; about 10 percent detrital carbonate and shell fragments, Balanus sp., Encope sp., echinoid spines, and mollusks; about 5 percent muscovite; about 5 percent micritic matrix; very loosely to loosely cemented and moderately cemented at 185.5 to 186.6 feet; virtually nonporous.	5	185 - 190
Sandstone as above; loosely cemented to not cemented in places; about 5 to 10 percent silty micritic matrix.	5	190 - 195
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to medium grained, poorly sorted, angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, pebbles to fine grained, poorly sorted, subangular to rounded; about 15 to 20 percent detrital carbonate and shell fragments, shark teeth (phosphatized), Encope sp., Balanus sp., echinoids , and other mollusks; about 5 percent muscovite; about 10 percent silty micrite, not cemented; interbedded with about 5 to 10 percent sandstone, concretionary; root casts or burrows.	10	195 - 205
Sand as above; about 30 percent micrite, not cemented; interbedded with about 15 percent sandstone as in 190 to 195 feet; virtually nonporous.	5	205 - 210
Sand as above; about 15 percent micrite, not cemented; interbedded with a sandy, calcareous siltstone at 212 feet, yellowish-gray (5 Y 7/2).	2	210 - 212
Silt, light-olive-gray (5 Y 6/1); calcareous and clayey; about 35 percent sand, quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 10 to 15 percent muscovite; abundant benthic foraminifers and some planktonic foraminifers, Globigerina sp., and sponge spicules.	3	212 - 215

Lithologic Log of Well G-3302

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	2	0 - 2
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, oolite-bearing sparse biosparite, mollusks, and benthic foraminifers, Archais sp.; about 15 to 20 percent quartz, medium to fine grained, moderately sorted (fine), subangular to rounded; about 10 percent heavy minerals, very fine grained, rounded; very well cemented; slightly porous, vugs; interbedded with about 10 percent soil.	2	2 - 4
Limestone as above; calcrete crust; in contact with a sparse oospar- ite, mollusks; solution holes are filled with sandy micrite that was later cemented; moderately porous, vugs; interbedded with about 5 to 10 percent soil.	4	4 - 8
Limestone as above; about 5 to 10 percent quartz, fine grained, angular to subrounded.	2	8 - 10
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse poorly washed biosparite, Archais sp., bryozo-ans, corals, and mollusks; about 30 percent quartz, very coarse to fine grained, moderately sorted (medium), subangular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to rounded; very well cemented; slightly to moderately porous toward base, vugs.	4	10 - 14
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and pale-yellowish-brown (10 YR 6/2); sandy, sparse biomicrite to sandy, sparse poorly washed biosparite, mollusks; about 35 to 40 percent quartz, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, well sorted (fine), subrounded to well rounded; moderately to well cemented; moderately porous, vugs.	2 .	14 - 16
Sand, very pale orange (10 YR 8/2); quartzose, very coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), angular to well rounded; interbedded with about 40 percent limestone as above.	2	16 - 18
Sand as above; moderately to poorly sorted toward base.	6	18 - 24

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); quartzose, granules to very fine grained, poorly sorted, angular to rounded; grains are iron stained; about 5 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to rounded.	3	24 - 27
Sand, pinkish-gray (5 YR 8/1) and pale-yellowish-brown (10 YR 6/2); quartzose, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subangular to subrounded; about 5 percent muscovite.	7	27 - 34
Sand, dark-yellowish-brown (10 YR 4/2); quartzose, very coarse to very fine grained, poorly sorted, angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subangular to subrounded; about 10 to 20 percent organic specks.		34 - 37
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, granules to very fine grained, moderately sorted (medium), angular to well rounded; about 5 percent heavy minerals (including garnet), medium to very fine grained, well sorted (fine), angular; about 10 to 15 percent organic specks; about 3 to 5 percent muscovite.	3	37 - 40
Sand, very pale orange (10 YR 8/2); quartzose, pebbles to fine grained, moderately to well sorted (coarse), subangular to well rounded; about 5 percent heavy minerals (including garnet), and phosphorite, coarse to fine grained, moderately sorted (fine), angular.	4	40 - 44
Sand, very pale orange (10 YR 8/2) and pinkish-gray (5 YR 8/1); quartzose, pebbles to medium grained, well sorted (coarse), subrounded to well rounded; about 3 to 10 percent heavy minerals and phosphorite, coarse to medium grained, well sorted (medium), subangular to subrounded.	13	44 - 57
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 5 percent heavy minerals, fine grained, subangular to subrounded.	3	57 - 60
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, moderately to well sorted (fine), subangular to rounded; about 5 percent heavy minerals, very fine grained, subangular.	4	60 - 64

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, pinkish-gray (5 YR 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 3 percent muscovite.	3	64 - 67
Sand, pinkish-gray (5 YR 8/2) to pale-yellowish-brown (10 YR 6/2) toward base, medium grained to silt, well sorted (fine), subangular to rounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded.	3	67 - 70
Sand, dark-yellowish-brown (10 YR 4/2); quartz, fine grained to silt, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals, fine grained, subangular to subrounded; about 5 to 10 percent muscovite; about 5 to 10 percent shell fragments, large mollusks.	4	70 - 74
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, very fine grained, angular; about 10 percent heavy minerals, very fine grained; about 30 percent micrite, not cemented; about 10 percent shell fragments; interbedded with about 20 percent limestone toward base, light-olive-gray (5 Y 6/1) and light-gray (N 7) to medium-light-gray (N 6); sandy, packed poorly washed biosparite, mollusks, pitted coquinoid texture; about 10 percent quartz, medium to fine grained, well sorted (fine), subrounded to rounded; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained (fine), subangular to rounded; moderately to well cemented; porous, vugs and interparticle.	3	74 - 77
Limestone as above; very light-gray (N 8) to light-gray (N 7) toward base.	8	77 - 85
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); sandy, packed biomicrite, large pelecypods with pitted texture, serpulids, and bryozoans; about 5 to 10 percent quartz, coarse to fine grained, poorly sorted, subrounded to rounded; about 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), subangular to rounded; moderately cemented; moderately porous, moldic, interparticle, and small vugs.	5	85 - 90
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, silty, sparse biomicrite, mollusks including large pelecypods; about 25 percent quartz, fine to very fine grained, well sorted (fine), angular; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subrounded to well rounded; loosely to moderately cemented.	5	90 - 95

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1) and light-gray (N 7); silty, sandy, packed poorly washed biosparite, Balanus sp., Encope sp., and bryozoans; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; moderately cemented; porous, interparticle and moldic.	5	95 - 100
Limestone as above; light-gray (N 7) to medium-light-gray (N 6); about 15 percent quartz; about 5 to 10 percent heavy minerals.	5	100 - 105
Limestone, light-olive-gray (5 Y 6/1) and very light gray (N 8) to medium-gray (N 5); sandy, packed poorly washed biosparite, Pecten sp. and other mollusks, and abundant Balanus sp., coquinoid texture; about 10 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; loosely to moderately cemented; porous, framework, moldic, and interparticle.	20	105 - 125
Limestone, yellowish-gray (5 Y 7/2), light-gray (N 7), and light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, abundant <u>Turritella</u> sp. and other mollusks; about 30 percent quartz, coarse grained to silt, poorly to moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, moderately to well sorted (fine), subrounded to well rounded; moderately to well cemented; porous, moldic and interparticle.	5	125 - 130
Limestone as above; about 35 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals; loosely to well cemented; moderately porous, moldic.	4	130 - 134
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); sandy, packed poorly washed biosparite, mollusks; about 25 to 30 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; loosely to well cemented; porous, moldic and interparticle.	2	134 - 136

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to well rounded; about 20 percent sparite matrix; very loosely to loosely cemented.	1	136 - 137
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to well rounded; about 10 percent shell fragments, mollusks, sponge spicules, and Encope sp.; about 5 to 10 percent mica, biotite and muscovite; contains pyrite at 147 to 156 feet; very loosely to loosely cemented in places into a sandstone as above.	17.5	137 - 154.5
Sandstone, yellowish-gray (5 Y 8/1); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 20 to 25 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to rounded; about 15 to 20 percent shell fragments, mollusks; about 25 to 30 percent micritic matrix; is a limestone in places; interbedded with about 20 percent sand as above.	9.5	154.5 - 164
Sand, yellowish-gray (5 Y 8/1) and pinkish-gray (5 YR 8/1); quartz-ose, very coarse to fine grained, well sorted (coarse), subangular to well rounded; about 10 to 15 percent phosphorite and heavy minerals, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 15 percent shell fragments; cemented in places.	3	164 - 167
Sand as above; cemented in places into a silty sandstone; quartzose, very coarse grained to silt, poorly sorted; about 10 percent micritic matrix.	3	167 - 170
Siltstone, light-olive-gray (5 Y 5/2); about 30 percent quartz, coarse to very fine grained, poorly sorted, angular to subrounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, poorly sorted, subrounded to well rounded; about 10 percent shell fragments, mollusks and shark teeth; about 15 percent micritic matrix; loosely to moderately cemented.	5	170 - 175

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, moderately sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded; about 5 percent shell fragments; about 3 to 5 percent micrite, not cemented; very loosely cemented in places.	5	175 - 180
Sandstone, yellowish-gray (5 Y 7/2); quartzose, very coarse grained to silt, poorly sorted, angular to well rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained; about 5 to 10 percent shell fragments; about 30 percent micritic matrix; very loosely to loosely cemented.	5	180 - 185
Sandstone as above; about 10 percent micritic matrix; not cemented to loosely cemented.	5	185 - 190
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to rounded; about 5 percent mica; about 3 percent shell fragments.	5	190 - 195
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subrounded; about 5 to 10 percent heavy minerals, very fine grained, subangular to rounded; about 1 to 3 percent shell fragments.	5	195 – 200
Silt, moderate-olive-brown (5 Y 4/4); abundant foraminifers; about 30 percent quartz, fine to very grained, well sorted (very fine), angular to subangular; about 10 percent clayey micrite, not cemented; about 5 percent muscovite.	5	200 - 205
Siltstone, moderate-olive-brown (5 Y 4/4); abundant foraminifers; about 15 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 5 to 10 percent clayey micrite, not cemented; loosely to moderately cemented.	5	205 - 210

Lithologic Log of Well G-3303

Lat 25°45'45", long 80°36'17"

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4.5	0 - 4.5
Peat.	2.5	4.5 - 7
Limestone, yellowish-gray (5 Y 8/1), pale-yellowish-brown (10 YR 6/2), moderate-yellowish-brown (10 YR 5/4), pale-yellowish-orange (10 YR 8/6), to dark-yellowish-orange (10 YR 6/6), mottled; calcrete crust in contact with a fossiliferous oomicrite, benthic foraminifers, and mollusks; about 1 to 5 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; well cemented; porous, vugs.	1	7 - 8
Limestone, very pale orange (10 YR 8/2), moderate-brown (5 YR 4/4), dark-yellowish-brown (10 YR 4/2) and grayish-orange (10 YR 7/4), mottled; fossiliferous oomicrite to sparse oomicrite, mollusks and bryozoans; neomorphic calcite in tests; about 5 percent quartz, medium to fine grained, well sorted (fine), subrounded to rounded; well cemented; porous.	2	8 - 10
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4), mottled; sandy, fossiliferous comicrite to sandy, sparse comicrite, mollusks, bryozoans, and serpulids; about 10 to 30 percent quartz, medium to fine grained, well sorted (fine), subrounded; about 5 percent heavy minerals and ferrous minerals, very fine grained to silt, well sorted (very fine), subangular; well cemented; porous, vugs.	2	10 - 12
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6) to moderate-yellowish-brown (10 YR 5/4) and dark-yellowish-brown (10 YR 4/2); intraclastic comicrite to sandy, intraclastic comicrite, benthic foraminifers; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), subrounded; clasts are from a sparse biosparite containing freshwater gastropods or benthic foraminifers, Archais sp.; well cemented; moderately porous; in contact with a sandy, sparse biosparite, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), dark-yellowish-brown (10 YR 4/2), and moderate-reddish-orange (10 R 6/6) to pale-red (10 R 6/2); abundant rhodochrosite specks and stains; about 10 to 20 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; well cemented; very slightly porous.	2	12 - 14
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and pale-yellowish-brown (10 YR 6/2); fossiliferous micrite to fossiliferous dismicrite and sparse biomicrite, <u>Helisoma</u> sp.; very well cemented; virtually nonporous to very slightly porous.	1.5	14 - 15.5

Lat 25°45'45", long 80°36'17"

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2) and moderate-yellowish-brown (10 YR 5/4); sandy, sparse intramicrite, mollusks; about 35 to 40 percent quartz, medium to very fine grained, well sorted (very fine), subangular; well cemented; moderately porous to porous, vugs and moldic.	0.5	15.5 - 16
Limestone, yellowish-gray (5 Y 8/1) and light-olive-brown (5 Y 5/6); sandy, sparse intradismicrite, benthic foraminifers including Archais sp., and mollusks; about 20 to 30 percent quartz, medium to very fine grained, well sorted (very fine), subangular; well cemented; very porous, vugs and moldic.	1.5	16 - 17.5
Limestone, yellowish-gray (5 Y 8/1) to very pale orange (10 YR 8/2); sparse biomicrite to sandy, sparse biomicrite, abundant Helisoma sp.; neomorphic calcite in tests; about 3 to 5 percent quartz, coarse to fine grained, well sorted (medium), subrounded; about 5 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), angular to rounded; interbedded at 18 feet with a sparse biomicrite, marine mollusks; well cemented; moderately porous, moldic.	0.5	17.5 - 18
Limestone, yellowish-gray (5 Y 8/1); sparse to packed pelmicrite, Archais sp., and mollusks; neomorphic calcite present in places; about 5 percent quartz, coarse to medium grained, well sorted (coarse), rounded; about 3 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded; well cemented; porous, vugs.	2	18 - 20
Limestone as above; interbedded at 21 to 22 feet with a fossiliferous dismicrite, mollusks; contains microfracture-like structures filled with calcite crystals; about 3 to 5 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subangular; well cemented; virtually nonporous to very slightly porous.	2	20 - 22
Limestone, yellowish-gray (5 Y 7/2) and very pale orange (10 YR 8/2) to grayish-yellow (5 Y 8/4); sandy, sparse biomicrite, mollusks and benthic foraminifers; neomorphic calcite in tests and in matrix; about 15 percent quartz, medium to very fine grained, well sorted (very fine), angular to subangular; about 10 percent organic specks; well cemented; porous, vugs.	2	22 - 24
Limestone as above; interbedded with about 30 to 40 percent sparse biomicrite, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1) and olive-gray (5 Y 4/1); abundant Helisoma sp.; about 5 percent quartz, medium to very fine grained, well sorted (fine), angular; about 10 percent organic specks; well cemented; porous, moldic.	2	24 - 26

Lat 25"45'45", long 80°36'17"

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above (freshwater); about 10 to 15 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent organic specks; moderately porous; in contact with a calcrete crust that is in contact with a sandy, sparse dismicrite at 27.5 to 28 feet, marine mollusks; about 20 percent quartz, very coarse to fine grained, moderately sorted (fine), subangular to rounded; about 5 percent organic specks; well cemented; porous, moldic.	2	26 - 28
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1 and 5 Y 7/2); sandy, sparse biomicrite to sandy, fossiliferous micrite at 30 to 32 feet, Chione sp., gastropods, and benthic foraminifers; neomorphic calcite in tests; about 20 to 25 percent quartz, very coarse to very fine grained, moderately sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded; well cemented; moderately porous to porous, connecting vugs at 30 to 32 feet containing iron specks.	4	28 - 32
Limestone, yellowish-gray (5 Y 8/1) and very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and light-olive-gray (5 Y 5/2); sandy, fossiliferous micrite; about 40 percent quartz, very coarse to very fine grained, poorly sorted, angular to rounded; about 5 percent iron specks and organics; about 1 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately sorted (fine), subrounded to rounded; grades into a sandstone in places; well cemented; moderately porous.	2	32 - 34
Limestone as above; about 45 percent quartz; about 3 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded to rounded; grades into a sandstone in places; porous in places; interbedded with sand at 36 feet, yellowish-gray (5 Y 8/1), quartz-ose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 3 percent heavy minerals, very fine grained, subangular to subrounded.	. 2	34 - 36
Sand as above; interbedded with thin layers of sandstone; quartzose, granules to very fine grained, poorly sorted, angular to rounded; about 3 percent heavy minerals, very fine grained, subangular; grades into a limestone in places; well cemented; porous.	2	36 - 38

Lat 25°45'45", long 80°36'17"

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1) to medium-dark-gray (N 4); quartzose, granules to fine grained, moderately sorted (fine), subangular; about 10 to 20 percent heavy minerals and phosphorite, very fine grained, angular to rounded; grades into a limestone in places; well cemented; porous, vugs; interbedded with sand at 39 to 40 feet, quartzose, yellowish-gray (5 Y 8/1), pebbles to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, granules to very fine grained, moderately to well sorted (fine), angular to rounded.	2	38 - 40
Sand as above; cemented in places into a sandstone; about 40 percent is coated with ferrous minerals; grades into a limestone in places.	2	40 - 42
Sand as above; about 15 to 30 percent shells and shell fragments, mollusks.	4	42 - 46
Sand as above, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 5/2); about 10 percent micrite, not cemented; about 30 to 35 percent shells and shell fragments, <u>Turritella</u> sp.	4	46 - 50
Sand as above; dark-yellowish-brown (10 YR 4/2); about 15 to 20 percent shells and shell fragments, mollusks; about 15 to 20 percent calcareous, silty clay instead of micrite.	2	50 - 52
Sand as in 46 to 50 feet; about 10 to 15 percent shells and shell fragments.	2	52 - 54
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 10 to 15 percent heavy minerals, fine grained to silt, well sorted (very fine), subangular to rounded; about 10 percent micrite, not cemented; about 30 to 35 percent shells and shell fragments.	2	54 - 56
Sand as in 50 to 52 feet; about 25 to 30 percent shells and shell fragments.	2	56 - 58
Sand as above; light-olive-gray (5 Y 5/2); about 25 to 30 percent silty, calcareous clay instead of micrite.	2	58 - 60
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to rounded; about 20 to 25 percent shells and shell fragments, mollusks including Pecten sp. and Turritella sp.; about 1 percent RF; carbonaceous, sandy limestone.	2	60 - 62

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Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, mollusks including gastropods, pelecypods, and Ostrea sp.; about 40 percent sand as above, grading to 20 percent toward base.	8	62 - 70
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to fine grained, moderately to well sorted (medium), angular to rounded; about 5 percent heavy minerals and phosphorite, well sorted (fine), subrounded to rounded; about 35 to 40 percent shells and shell fragments and about 20 to 25 percent at 72 to 74 feet.	4	70 - 74
Sand, dark-yellowish-brown (10 YR 4/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 3 percent heavy minerals, fine grained to silt, well sorted (very fine), angular to rounded; about 1 to 3 percent muscovite; slightly calcareous; about 5 to 10 percent shell fragments at 76 to 78 feet.	4	74 - 78
Sand, yellowish-gray (5 Y 7/2); quartzose, very coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained; about 30 to 40 percent shells and shell fragments, mollusks; slightly calcareous.	2	78 - 80
Sand as in 74 to 78 feet; lacks shell fragments.	10	80 - 90
Sand, yellowish-gray (5 Y 7/2); quartzose, medium grained to silt, well sorted (fine), angular to subangular; about 5 percent heavy minerals, fine grained, subangular to subrounded; about 10 percent shell fragments.	5	90 - 95
Sand as in 80 to 90 feet.	5	95 - 100
Sand as in 74 to 78 feet; about 3 to 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 3 to 5 percent muscovite; about 5 to 7 percent shells and shell fragments, Pecten sp., large.	10	100 - 110
Sand as above; about 10 to 15 percent shell fragments, large.	5	110 - 115
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse grained to silt, moderately to well sorted (fine), angular to subrounded; about 10 percent phosphorite and heavy minerals, granules to very fine grained, moderately sorted (very fine), subrounded; about 20 to 25 percent shells and shell fragments.	5	115 - 120

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Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-gray (N 7); sandy, packed biomicrite, encrusting bryozoans, Encope sp., Ostrea sp., and benthic foraminifers; about 3 to 5 percent quartz, fine grained, angular; about 10 to 15 percent phosphorite, medium to fine grained, well sorted (medium to fine at 126 to 128 feet), subangular to subrounded; loosely to moderately cemented.	8	120 - 128
Limestone as above; light-gray (N 7) to medium-gray (N 5); about 15 to 20 percent quartz, coarse to very fine grained, well sorted (fine), angular to rounded; loosely to well cemented; porous.	12	128 - 140
Sandstone, medium-light-gray (N 6) to medium-gray (N 5); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; about 40 percent shells and shell fragments, Pecten sp., gastropods, and other mollusks; about 10 percent sparite matrix; moderately to well cemented; porous, moldic.	5	140 - 145
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, mollusks; about 35 percent quartz, coarse to very fine grained, moderately sorted (very fine), angular to subangular; about 10 percent heavy minerals and phosphorite, very fine grained, subrounded to well rounded; grades to a sandy, packed biomicrite in places, mollusks including Turritella sp., and encrusting bryozoans; about 25 to 30 percent quartz, coarse to very fine grained, moderately to well sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to rounded; well cemented; porous, moldic.		145 - 150
Sandstone, yellowish-gray (5 Y 7/2); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately to well sorted (very fine), subangular to rounded; about 30 percent shell fragments and detrital carbonate; about 10 percent micritic matrix; grades to a sandy, sparse biomicrite in places; loosely to moderately cemented; moderately porous to porous, moldic.	10	150 - 160
Sandstone as above; about 20 percent shell fragments and detrital carbonate; very loosely to loosely cemented.	5	160 - 165

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Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2); quartzose, very coarse to fine grained, well sorted (medium), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subrounded; about 20 percent shell fragments and detrital carbonate; about 10 percent micritic matrix; very loosely cemented.	7	165 - 172
Sandstone, yellowish-gray (5 Y 7/2); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately to well sorted (fine), subrounded to rounded; about 15 to 20 percent detrital carbonate and shell fragments, <u>Balanus</u> sp., and mollusks including <u>Pecten</u> sp.; about 10 to 30 percent micritic matrix; grades to a sandy, sparse biomicrite in places; very loosely to moderately cemented.	4	172 - 176
Sand, yellowish-gray (5 Y 7/2); quartzose, very coarse to very fine grained, moderately to poorly sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, pebbles to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent shells and shell fragments; interbedded with about 5 percent sandstone as above; interbedded with about 10 (at 176 to 178 feet) to 40 percent siltstone, light-olive-gray (5 Y 7/2) and olive-gray (5 Y 3/2); about 20 percent quartz, very coarse to very fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately to well sorted (very fine), subangular to rounded; about 10 percent shell fragments, mollusks; about 20 percent calcareous clay matrix; loosely to moderately cemented.	4	176 - 180
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent shell fragments, mollusks, echinoid spines, and mantaray teeth; interbedded with about 30 percent siltstone as above; loosely cemented.	2	180 - 182
Siltstone as in 176 to 180 feet; very loosely cemented; interbedded with about 30 to 40 percent sand as above.	2	182 - 184

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Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 180 to 182 feet; interbedded with about 15 to 20 percent sandy, calcareous, clayey siltstone; abundant foraminiferal ooze; about 15 to 20 percent quartz, fine grained, angular to subangular; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; loosely to moderately cemented; interbedded with about 20 percent silty, calcareous claystone, olive-gray (5 Y 3/2); abundant foraminifers; moderately cemented.	2	184 - 186
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to very fine grained, well sorted (medium), angular to rounded; about 10 percent phosphorite and heavy minerals, coarse to very fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent shell fragments; interbedded with about 20 to 30 percent sandy, silty claystone, light-olive-gray (5 Y 5/2); slightly calcareous.	4	186 - 190
Siltstone, grayish-olive (10 Y 4/2); clayey and calcareous; about 3 percent shell fragments and abundant foraminifers; about 20 percent quartz to 35 percent toward base, very fine grained, angular; about 5 percent heavy minerals, very fine grained, subrounded; loosely to moderately cemented.	5	190 - 195
No recovery.	4	195 - 199
Siltstone as above; about 30 percent quartz, fine to very fine grained, well sorted (very fine), angular.	6	1 99 - 2 05

Lithologic Log of Well G-3304

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Peat; interbedded with lime mud, sandy, silty micrite; about 20 to 30 percent freshwater gastropods.	2	4 - 6
Lime mud as above; some peat.	1	6 - 7
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sparse oosparite, mollusks and bryozoans; well cemented; porous, vugs; solution holes are filled with micrite as above.	3	7 - 10
Limestone, very pale orange (10 YR 8/2), moderate-red (5 R 4/6), dark-yellowish-orange (10 YR 6/6), and pale-yellowish-brown (10 YR 6/2); sandy, sparse intraclastic oosparite mollusks, brecciated texture; clasts are from a sandy, cherty, sparse biosparite, bryozoans; about 35 to 40 percent quartz, very fine grained, angular; well to very well cemented; porous, vugs.	4	10 - 14
Limestone, very pale orange (10 YR 8/2) and grayish-yellow (5 Y 8/4); sparse to packed biomicrite, mollusks including Chione sp. and Archais sp.; moderately to well cemented; porous, vugs.	2	14 - 16
Limestone, very pale orange (10 YR 8/2); sparse to packed biomicrite, <u>Helisoma</u> sp.; about 5 percent quartz, fine grained, angular; well cemented; porous, moldic.	2	16 - 18
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); packed poorly washed biosparite, <u>Chione</u> sp., <u>Turritella</u> sp., and other mollusks, and benthic foraminifers; well cemented; porous, vugs and moldic; in contact with limestone toward base as below.	6	18 - 24
Limestone, very pale-orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sparse poorly washed biosparite, <u>Helisoma</u> sp.; grades to a poorly washed fossiliferous sparite in places; well to very well cemented; slightly to moderately porous, burrows and moldic.	2.5	24 - 26.5
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, benthic foraminifers, Archais sp., and mollusks; about 20 to 25 percent quartz, fine grained, angular to subangular; well cemented; moderately porous to porous, moldic and vugs.	3.5	26.5 - 30
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite to sandy, packed poorly washed biosparite at 31.5 to 32 feet, mollusks and corals; about 15 to 20 percent quartz, fine grained, angular to subangular; well cemented; porous to very porous, moldic and vugs.	4	30 - 34

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 5 to 10 percent quartz; porous to moder-ately porous toward base, moldic and vugs.	2	34 - 36
Limestone, very pale orange (10 YR 8/2) and pale-yellowish-brown (10 YR 6/2); sparse biomicrite, <u>Helisoma</u> sp.; well to very well cemented; moderately porous to porous, moldic.	3	36 - 39
Limestone, yellowish-gray (5 Y 7/2) and dusky-yellow (5 Y 6/4); sandy, sparse to sandy, packed biosparite, mollusks; about 25 percent quartz, fine grained, angular to subangular; well cemented; porous, vugs and moldic.	1.5	39 - 40.5
Limestone, grayish-orange-pink (5 YR 7/2); sparse biosparite, gastro-pods; very well cemented; moderately porous, burrows and vugs.	1.5	40.5 - 42
Limestone as in 39 to 40.5 feet; yellowish-gray (5 Y 7/2) to grayish-yellow (5 Y 8/4); neomorphic and cavity-filling calcite.	2	42 - 44
Limestone, pale-yellowish-brown (10 YR 6/2); packed poorly washed biosparite, <u>Helisoma</u> sp.; sample is coated with organic specks; well cemented; porous, moldic.	2.5	44 - 46.5
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, corals, bryozoans, and mollusks; about 20 to 25 percent quartz, coarse to very fine grained, poorly sorted, angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse grained and fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous, vugs.	1.5	46.5 - 48
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, sparse biosparite, mollusks; about 30 to 35 percent quartz, coarse to very fine grained, poorly sorted (angular) to rounded; about 10 percent heavy minerals and ferrous minerals, very fine grained, angular to rounded; well cemented; porous, moldic and vugs.	2	48 - 50
Limestone, white (N 9) to medium-light-gray (N 6) and grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks including <u>Pecten</u> sp.; about 35 to 40 percent quartz, coarse to very fine grained, poorly sorted, angular to subrounded; about 10 to 15 percent heavy minerals and ferrous minerals, very fine grained, angular to rounded; grades to a sandstone in places; limestone contains about 20 percent quartz toward base, fine to very fine grained, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and ferrous minerals; fine to fine grained, well sorted (very fine), angular to well rounded; well cemented; porous, vugs and interparticle.	4	50 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, white (N 9) to medium-light-gray (N 6) and grayish-orange (10 YR 7/4); sandy, packed biosparite, mollusks; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to well rounded; very loosely to well cemented; porous, vugs and interparticle.	6	54 - 60
Limestone, white (N 9) to medium-light-gray (N 6) and grayish-orange (10 YR 7/4); sandy, packed biomicrite, mollusks; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to well rounded; loosely to very loosely cemented.	7	60 - 67
Limestone, white (N 9) to medium-light-gray (N 6) and grayish-orange (10 YR 7/4); sandy, packed biosparite, <u>Pecten sp., Ostrea sp.,</u> and other mollusks; about 20 percent quartz, very coarse to medium grained, well sorted (medium), subangular to rounded; loosely cemented to not cemented (shells and shell fragments), <u>Turritella sp. and Olivella sp.</u>	7	67 - 74
Shells and shell fragments, mollusks as above and bryozoans; about 20 to 30 percent quartz, coarse to fine grained, well sorted (medium), subangular to subrounded.	3	74 - 77
Limestone, light-olive-gray (5 Y 6/1) and very light gray (N 8) to medium-light-gray (N 6); sandy, packed biosparite, mollusks; phosphatized bone chips; about 25 to 30 percent quartz, very coarse to fine grained, poorly sorted, subangular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; loosely to well cemented; porous, moldic and interparticle.	10	77 - 87
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, packed biosparite, echinoids, Encope sp., and mollusks, coquinoid texture; about 35 percent quartz, coarse to fine grained, poorly sorted, angular to subrounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to rounded; is a sandstone in places; loosely to well cemented; porous, vugs, moldic, and interparticle.	7	87 - 94
Limestone as above; light-olive-gray (5 Y 6/1); also contains Ostrea sp., Pecten sp., and echinoid spines; about 35 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to subrounded; moderately to well cemented and very loosely cemented at 97.5 to 100 feet; porous, moldic and interparticle.	6	94 - 100

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 35 percent quartz, coarse to fine grained, moderately to well sorted (medium), subangular to rounded; very loosely to loosely cemented.	4	100 - 104
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, poorly sorted, angular to well rounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), subangular to well rounded; about 25 to 30 percent shell fragments; about 20 percent micritic matrix; almost a limestone in places; very loosely to loosely cemented.	6	104 - 110
Siltstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy; quartzose, medium to fine grained, moderately sorted (fine), subangular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; about 25 percent shell fragments, mollusks; about 15 percent micritic matrix; loosely to moderately cemented.		110 - 115
Sandstone, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, moderately sorted (medium), subangular to subrounded; about 10 percent heavy minerals, very fine grained, angular to rounded; about 35 percent shell fragments; about 10 to 15 percent micritic matrix; very loosely cemented to not cemented.	5	115 - 120
Limestone, medium-gray (N 5); sandy, sparse biosparite, mollusks; about 35 percent quartz, medium to very fine grained, well sorted (very fine), angular to subangular; about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to well rounded; moderately to well cemented; moderately porous, moldic.	5	120 - 125
Limestone, light-olive-gray (5 Y 6/1) and light-gray (N 7) to medium-light-gray (N 5); sandy, sparse to sandy, packed biosparite, mollusks and bryozoans; about 25 to 30 percent quartz, coarse to very fine grained, poorly sorted, subangular to rounded; about 15 percent heavy minerals, medium to fine grained, moderately sorted (fine), subrounded to well rounded; well cemented; porous, moldic and interparticle.	5	125 - 130
Sandstone, yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, moderately sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), subrounded to well rounded; about 20 to 30 percent shell fragments and casts and molds; about 10 percent micritic matrix; well cemented; porous, moldic.	5	130 - 135

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1); sandy, poorly washed packed biosparite; about 30 percent quartz, medium to very fine grained, moderately sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine to very fine grained, rounded to well rounded; moderately to well cemented; moderately porous to porous.	10	135 - 145
Sandstone, light-olive-gray (5 Y 6/1); quartzose, medium to fine grained, angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, subrounded to well rounded; about 20 to 35 percent shell fragments and casts and molds, mollusks, barnacles, and shark teeth; grades to a limestone in places; loosely to well cemented; moderately porous, moldic.	. 10	145 - 155
Sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, moderately sorted (very fine), angular to rounded; about 25 percent heavy minerals and phosphorite, very coarse grained and fine to very fine grained, well sorted (very fine), subrounded to well rounded; about 35 to 40 percent shell fragments and casts and molds, mollusks; about 15 percent poorly washed sparite matrix; is a limestone in places; moderately to well cemented; porous, moldic and interparticle.	5	155 - 160
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium to fine grained, well sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded; about 25 percent shell fragments, mollusks; loosely cemented; interbedded with about 20 percent sand, quartz-ose, coarse to fine grained, well sorted (medium), subrounded to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded.	5	160 - 165
Sandstone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subrounded to well rounded; about 25 percent shell fragments and casts and molds; about 10 percent micritic matrix; moderately to well cemented; interbedded with sand at 169 to 173 feet, quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to well rounded.	8	165 - 173

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; about 35 to 40 percent shell fragments, mollusks and barnacles; about 10 to 15 percent sparite matrix; is a limestone in places; loosely to moderately cemented.	2	173 - 175
Sandstone, light-olive-gray (5 Y 5/2) and moderate-olive-brown (5 Y 4/4); quartzose, medium grained to silt, moderately sorted (very fine), angular to subrounded; about 25 percent shell fragments, mollusks; about 5 to 10 percent clayey micritic matrix; very loosely cemented; interbedded with sand at 180 feet, quartzose, coarse to medium grained, well sorted (medium), subrounded to well rounded; about 3 to 5 percent heavy minerals and phosphorite, medium grained, rounded to well rounded.	5	175 - 180
Sand as above; shelly, mollusks including large <u>Pecten</u> sp. coated with encrusting large barnacles; interbedded with sandstone; quartzose, coarse grained to silt, poorly sorted, angular to subrounded; about 5 percent phosphorite, medium grained, subrounded to rounded; about 15 percent shell fragments, mollusks and barnacles; about 20 percent micritic matrix; moderately to well cemented; slightly porous, small vugs.	4	180 - 184
Sandstone as above; about 30 percent shell fragments, mollusks and echinoid spines; grades to a limestone in places; loosely to well cemented; moderately porous, moldic.	3	184 - 187
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); sandy, sparse biomicrite, mollusks; about 30 to 35 percent quartz, medium grained to silt, moderately sorted (medium), subangular to subrounded; about 5 percent phosphorite, medium grained, subrounded to rounded; moderately to well cemented and loosely cemented at 188 to 190 feet.	3	187 - 190
Claystone, light-olive-gray (5 Y 5/2) and grayish-olive (10 Y 4/2); silty and sandy; abundant benthic and planktonic foraminifers; loosely to moderately cemented.	20	190 - 210

Lithologic Log of Well G-3305

Description	Thick- ness (feet)	Depth, feet below land surface
Soil.	1.5	0 - 1.5
Limestone, moderate-yellowish-brown (10 Y 5/4) and dark-yellowish-orange (10 YR 6/6); sparse oosparite, mollusks including gastropods; well cemented; porous to very porous, vugs.	0.5	1.5 - 2
Limestone as above; very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); bryozoans.	4	2 - 6
Limestone, very pale orange (10 YR 8/2) and medium-light-gray (N 6); sandy, onlite-bearing sparse biosparite, bryozoans; about 10 to 15 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; well cemented; very porous, vugs; is in contact with a sandy, calcrete crust at 10 to 12 feet, moderate-yellowish-brown (10 YR 5/4) and dark-yellowish-orange (10 YR 6/6), mottled, stained with ferrous minerals; well cemented; very porous, vugs.	6	6 - 12
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sandy, sparse poorly washed biosparite, mollusks and bryozoans; about 30 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, vugs; in contact with a sparse poorly washed biosparite, light-olive-gray (5 Y 5/2) and medium-gray (N 5), Helisoma sp.; about 5 percent quartz, medium grained, subangular; very well cemented; slightly porous.	2	12 - 14
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6) and light-olive-gray (5 Y 6/1); sandy, fossiliferous poorly washed sparite; about 20 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; well cemented; slightly to moderately porous, vugs.	2	14 - 16
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6) and light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, mollusks and benthic foraminifers; about 35 to 40 percent quartz, medium to fine grained, well sorted (medium), subrounded; well cemented; moderately porous to porous, vugs.	3.5	16 - 19.5
Limestone, very pale orange (10 YR 8/2); fossiliferous sparite; very well cemented; very slightly porous.	0.5	19.5 - 20

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; about 3 to 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded; well cemented; moderately porous to porous, vugs.	2	20 - 22
Limestone, very pale orange (10 YR 8/2), moderate-yellow (5 Y 7/6), and dusky-yellow (5 Y 6/4); sandy, packed poorly washed biosparite, mollusks including Chione sp.; about 10 percent quartz, medium to fine grained, well sorted (medium), angular to subangular; about 3 to 5 percent heavy minerals, medium to fine grained, well sorted (medium), subrounded; well cemented; porous to very porous, moldic and vugs.	5.5	22 - 27.5
Limestone, yellowish-gray (5 Y 7/2) to very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 20 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals and ferrous minerals, fine grained, subrounded; well to very well cemented; slightly to moderately porous and porous at 28 to 30 feet, vugs and moldic.	2.5	27.5 - 30
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite to sandy, sparse poorly washed biosparite at 33.5 to 34 feet, Chione sp. and other mollusks; neomorphic calcite in tests; about 35 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; about 3 to 5 percent heavy minerals, fine grained, subrounded; well cemented; porous to very porous, moldic and vugs.	4	30 - 34
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks; about 40 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to rounded; well cemented; porous to very porous, vugs and moldic.	2	34 - 36
Limestone, very pale orange (10 YR 8/2); sandy, sparse to sandy, packed biosparite, mollusks; neomorphic cement in tests; about 30 percent quartz, medium to fine grained, well sorted (medium), angular to subrounded; about 3 percent heavy minerals, medium to very fine grained, moderately sorted (very fine), subangular to subrounded; well cemented; porous, moldic and vugs.	1.5	36 - 37.5

Description	Thick- ness (feet)	Depth, fee below land surface
Limestone, very pale orange (10 YR 8/2); sandy, fossiliferous to sandy, sparse biosparite, mollusks; about 30 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; very well cemented; slightly porous.	0.5	37.5 - 38
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, mollusks; cavity-filling calcite; about 25 to 30 percent quartz as above; well cemented; moderately porous, moldic.	2	38 - 40
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite; about 35 to 40 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; well cemented; porous, moldic and vugs.	2	40 - 42
Limestone, very pale orange (10 YR 8/2); sandy, sparse to sandy, packed biosparite in places, mollusks and Archais sp.; about 25 to 30 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; about 3 percent heavy minerals, fine grained, subrounded; well cemented; porous, vugs and moldic; interbedded with about 20 to 30 percent sand at 44 to 46 feet, quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded.	4	42 - 46
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks including Chione sp., Pecten sp. and Ostrea sp.; about 40 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded to rounded; grades to a sandstone in places; well cemented; porous to very porous, vugs, moldic, and interparticle; interbedded with about 10 to 20 percent sand as above.	4	46 - 50
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks; neomorphic and cavity-filling calcite; about 25 percent quartz, medium to very fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to rounded; very well cemented; porous, moldic and interparticle.	2	50 - 52

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 10 percent quartz; about 5 to 10 percent heavy minerals; is a sandstone in places; well cemented; very porous, vugs, moldic, and interparticle; laterally in contact with a sandy, sparse poorly washed biosparite, Helisoma sp.; about 25 to 30 percent quartz, medium grained, angular; well cemented; moderately porous to porous, moldic.	2	52 - 54
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); sandy, sparse biosparite, bryozoans, corals, and mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded to well rounded; is a sandstone in places; well cemented; porous, vugs and moldic.	2	54 - 56
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, mollusks; about 30 to 40 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals, ferrous minerals, and phosphorite, medium to very fine grained, well sorted (medium and fine at 58 to 60 feet), subrounded to well rounded; well cemented; porous, moldic and vugs.	6	56 - 62
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded to well rounded; about 30 to 40 percent sparite matrix; well cemented; porous, moldic and vugs.	0.5	62 - 62.5
Cavity.	1	62.5 - 63.5
Sandstone as in 62 to 62.5 feet; moderately to well cemented; in places.	2.5	63.5 - 66
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biomicrite to a sandy, poorly washed biosparite at 68 to 70 feet; about 35 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to rounded; moderately to well cemented; porous, moldic and vugs.	4	66 - 70

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, bryozoans and abundant corals, Montastrea sp.; about 20 to 30 percent quartz, coarse to very fine grained, well sorted to moderately sorted (fine) toward base, subangular to rounded; about 3 to 5 percent heavy minerals and ferrous minerals, fine grained, subrounded; well cemented; porous, vugs and moldic.	8	70 - 78
Limestone, yellowish-gray (5 Y 8/1) and pale-olive (10 Y 6/2); sandy, intraclastic sparse biomicrite, foraminifers, <u>Balanus</u> sp., and mollusks including <u>Ostrea</u> sp.; about 25 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to subrounded; well cemented; porous, vugs and moldic.	2	7 8 - 80
Limestone, yellowish-gray (5 Y 7/2); sandy, packed biosparite, bry-ozoans, <u>Balanus</u> sp., <u>Ostrea</u> sp., <u>Pecten</u> sp., and echinoid spines; about 25 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; moderately to well cemented; porous, interparticle, framework, and vugs.	4	80 - 84
Sandstone, yellowish-gray (5 Y 7/2 to 5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (medium), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; about 30 percent shell fragments, mollusks including Ostrea sp. and Pecten sp., and serpulids; about 10 percent sparite matrix; moderately to well cemented; porous, vugs and interparticle.	3	84 - 87
Sandstone as above; light-olive-gray (5 Y 6/1) at 97 to 100 feet; loosely to well cemented; slightly porous, interparticle; about 10 percent poorly washed sparite matrix at 90 to 94 feet.	13	87 - 100
Limestone, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 5/2); sandy, packed biomicrite, mollusks; about 20 to 40 percent quartz, very coarse to very fine grained, moderately sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals, ferrous minerals, and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded; loosely to well cemented; moderately porous to porous, moldic, interparticle, and vugs.	33	100 - 133

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, moderately (medium) to poorly sorted, angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained to silt, well sorted (silt), subangular to rounded; about 40 percent shell fragments, abundant bryozoans, echinoid spines, and sponge spicules; about 5 percent micritic matrix; loosely cemented to moderately cemented at 140 to 144 feet; very slightly porous.	11	133 - 144
Sandstone, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, angular to rounded; about 15 percent shell fragments; about 5 percent micrite, not cemented; moderately to well cemented; slightly to moderately porous.	3	144 - 147
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, well sorted (medium), angular to subrounded; about 20 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subrounded to well rounded; about 20 to 25 percent casts and molds; about 3 to 5 percent micrite, not cemented; well cemented; moderately porous to porous, vugs and moldic.	10	147 - 157
Sandstone as above; quartz is moderately sorted (fine).	3	157 - 160
Sandstone as above; quartz is poorly sorted.	4	160 - 164
Sandstone as in 157 to 160 feet; slightly porous.	3	164 - 167
Sandstone as above; very loosely cemented.	7	167 - 174
Siltstone, olive-gray (5 Y 3/2); about 20 percent quartz, medium to fine grained, well sorted (fine), subangular; about 10 percent heavy minerals and phosphorite, fine grained, subangular to rounded; about 10 percent shell fragments; clayey at 177 to 180 feet; loosely to moderately cemented.	6	174 - 180
Siltstone as above; interbedded with about 30 sand, quartzose, medium grained to silt, moderately sorted (medium), subangular to subrounded.	5	180 - 185
Siltstone as above; abundant foraminifers; about 20 to 30 percent quartz, medium to fine grained, well sorted (medium); interbedded with sand as above at 185 to 195 feet.	15	185 - 200

Lithologic Log of Well G-3306

Description	Thick- ness (feet)	Depth, feet below land surface
Soil.	2	0 - 2
Sand, very pale orange (10 YR 8/2) and pale-yellowish-orange (10 YR 8/6); quartzose, coarse to medium grained, well sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded; interbedded with about 40 percent limestone, very pale orange; sandy, oolite-bearing fossiliferous sparite; about 25 percent quartz, coarse to fine grained, well sorted (medium), subangular to subrounded; well cemented; very porous.	3	2 - 5
Sandstone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); quartzose, coarse to fine grained, well sorted (medium), subangular to subrounded; about 5 percent shell fragments, mollusks; about 3 to 5 percent ooids; about 20 percent sparite; well cemented; porous to very porous.	5	5 - 10
Sandstone as above; about 15 to 20 percent shell fragments, pelecy-pods; about 5 to 15 percent sparite; about 3 to 5 percent heavy minerals, fine grained, rounded; loosely cemented at 10 to 12 feet.	4	10 - 14
Sand, very pale orange (10 YR 8/2); quartzose, coarse to fine grained, well sorted (medium), subangular to subrounded; about 3 to 5 percent heavy minerals, fine grained, subangular to subrounded; about 5 to 10 percent micrite, not cemented; interbedded with about 30 to 40 percent sandstone as above; about 15 to 20 percent sparite matrix.	3	14 - 17
Sand as above; about 1 to 3 percent shell fragments; about 5 percent micrite, not cemented at 17 to 20 feet.	20	17 - 37
Sandstone, dusky-yellow (5 Y 6/4); quartzose, coarse to medium grained, well sorted (medium), subangular to rounded; about 5 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded; about 15 percent shell fragments; about 15 to 20 percent sparite matrix; well cemented; porous, interparticle; grades to a limestone toward base; sandy, sparse biosparite, Archais sp.; about 5 to 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), subrounded; very well cemented; porous.	3	37 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, coarse to medium grained, well sorted (medium), subangular to subrounded; about 10 to 15 percent shell fragments and detrital carbonate; about 10 percent heavy minerals, ferrous minerals, and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; about 15 to 20 percent sparite matrix; moderately to well cemented; porous, interparticle and small vugs.	4	40 - 44
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; about 20 percent shell fragments and detrital carbonate; about 25 percent sparite matrix; well cemented; porous, framework, interparticle, and small vugs; interbedded with limestone toward base; sandy, sparse poorly washed biosparite, pale-yellowish-brown (10 YR 6/2), Helisoma sp.; about 20 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; well cemented; porous, moldic.	3	44 - 47
Limestone as above; yellowish-gray (5 Y 8/1); about 30 percent quartz, coarse to fine grained; about 3 percent ferrous minerals, medium grained, subangular; porous, moldic and vugs.	3	47 - 50
Limestone, very pale orange (10 YR 8/2) and pale-yellowish-brown (10 YR 6/2); sandy, packed biosparite, pelecypods, gastropods, and Montastrea sp.; about 25 percent quartz, coarse to fine grained, well sorted (medium), subangular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), subrounded; well cemented; porous, moldic, framework, and vugs.	4	50 - 54
Limestone, very pale orange (10 YR 8/2) and moderate-yellow (5 Y 7/6); sandy, sparse pelsparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; well cemented; porous, moldic and vugs.	3	54 - 57
Limestone, yellowish-gray (5 Y 8/1); biolithite and sandy, sparse biosparite, Montastrea sp.; about 15 to 20 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; porous, framework, moldic, and vugs.	3	57 - 60

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; sandy, sparse biosparite; about 40 percent quartz; about 5 percent heavy minerals and ferrous minerals, fine grained, subangular to rounded; very well cemented; porous, moldic and vugs.	4	60 - 64
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, moderately to well sorted (fine), subrounded to well rounded; about 20 percent sparite matrix; about 20 percent shell fragments and detrital carbonate, corals, Archais sp., and mollusks; well cemented; moderately porous to porous, moldic and vugs.	3	64 - 67
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), subangular to subrounded; about 10 to 20 (at 67 to 70 feet) percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), rounded to well rounded; about 15 percent sparite matrix; about 30 percent detrital carbonate and shell fragments, benthic foraminifers and Pecten sp.; moderately to well cemented; moderately porous, vugs and moldic; interbedded with about 30 percent sand, quartzose, coarse to very fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), rounded to well rounded.	7	67 - 74
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; grades to a sandstone in places; well cemented; moderately porous to porous, moldic, interparticle, and vugs; interbedded with about 20 to 30 percent sand at 74.5 to 76 feet and 79 to 80 feet, quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 15 percent heavy minerals and phosphorite, medium to fine grained (medium), subrounded to well rounded; about 30 percent shell fragments.	6	74 - 80

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, well sorted (medium), subangular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained (medium), subrounded to well rounded; about 25 to 30 percent shell fragments, mollusks and echinoid spines; about 15 percent sparite matrix; concretionary in places; loosely to well cemented; slightly to moderately porous at 80 to 87 feet and porous at 87 to 90 feet, moldic and interparticle; interbedded with about 20 percent sand as above.	10	80 - 90
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, mollusks and benthic foraminifers, Archais sp.; about 25 to 30 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded; well cemented; moderately porous, vugs and moldic; interbedded with sparse biosparite, pale-yellowish-brown (10 YR 6/2), freshwater gastropods; very well cemented; slightly porous, moldic and vugs.	4	90 - 94
Limestone, yellowish-gray (5 Y 8/1 to 5 Y 7/2); sandy, sparse poorly washed biosparite, mollusks including gastropods; about 25 to 35 percent quartz at 100 to 104 feet, very coarse to fine grained, moderately (medium) to poorly sorted at 100 to 104 feet, angular to well rounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained at 94 to 97 feet and coarse to fine grained at 97 to 104 feet, well sorted (medium), rounded to well rounded; well cemented; moderately porous to porous, moldic.	10	94 - 104
Shells and shell fragments, serpulids and mollusks; about 35 to 40 percent quartz, very coarse to fine grained, moderately (medium) to poorly sorted, subrounded to well rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subrounded to well rounded; loosely cemented in places.	3	104 - 107
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to medium grained, well sorted (medium), subrounded to well rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subrounded to well rounded; about 35 to 40 percent shells and shell fragments, mollusks including pelecypods up to 3 inches in size at 110 to 114 feet.	7	107 - 114
Shells and shell fragments, mollusks including Chione sp.; about 40 to 45 percent sand as above.	3	114 - 117

Lat 25°46'00", long 80°17'37" Sec. 1, T. 54 S., R. 40 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, Ostrea sp. and other mollusks; about 30 percent quartz, very coarse grained to silt, poorly sorted, subangular to subrounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded.	3	117 - 120
Shells and shell fragments, <u>Turritella</u> sp. and other mollusks, and serpulids; about 30 percent quartz, very coarse to fine grained, moderately to well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded.	4	120 - 124
Sand, light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; about 30 percent shell fragments, mollusks; loosely to moderately cemented in places.	10	124 - 134
Sandstone, light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; about 35 percent shell fragments; about 5 to 10 percent micritic matrix; loosely to well cemented in places.	3	134 - 137
Sand as in 124 to 134 feet.	3	137 - 140
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, mollusks; about 35 to 40 percent quartz, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; loosely to well cemented in places.	5	140 - 145
Sand as in 124 to 127 feet; quartz is coarse to very fine grained at 150 to 155 feet.	10	145 - 155
Sand as above; is loosely to moderately cemented in places into about 30 percent sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded;	5	155 - 160

about 10 to 15 percent micritic matrix.

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 25 to 30 percent shells and shell fragments, mollusks and sponge spicules.	5	160 - 165
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, moderately sorted (very fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine grained to silt, well sorted (very fine), angular to rounded; about 20 percent micrite, not cemented; about 15 percent shell fragments, mollusks.	5	165 - 170
Shells and shell fragments, <u>Pecten</u> sp. and other mollusks, and sponge spicules; about 40 percent sand as above.	10	170 - 180
Sand, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, poorly sorted, angular to subrounded; about 10 percent heavy minerals and phosphorite, fine grained to silt, well sorted (very fine), angular to rounded; about 30 percent shell fragments, mollusks and echinoid spines; about 15 percent micrite, not cemented.	5	180 - 185
Sand, light-olive-gray (5 Y 5/2); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), rounded; about 40 percent shell fragments to about 25 percent at 190 to 195 feet.	10	185 - 195
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, poorly sorted, angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to rounded; about 20 percent micritic matrix; about 20 to 25 percent casts and molds; loosely to well cemented; porous, moldic.	5	195 - 200
Sandstone as above; about 5 percent heavy minerals and phosphorite; about 10 percent shell fragments, mollusks and echinoid spines; about 5 percent micritic matrix; moderately porous, moldic, interparticle, and vugs.	5	200 - 205
Sandstone as above; about 10 percent casts and molds; moderately porous to porous, moldic; interbedded with about 40 percent sand, quartzose, very coarse to medium grained, well sorted (medium), subrounded to rounded; about 5 to 10 percent phosphorite, coarse to medium grained, well sorted (medium), subrounded to well rounded; about 5 to 10 percent shell fragments, mollusks.	5	205 - 210

Description	Thick- ness (feet)	below land
Sand as above; interbedded with about 30 percent sandstone as above; containing <u>Turritella</u> sp.	5	210 - 215
Sandstone as above; interbedded with about 10 to 15 percent sand as above.	. 5	215 - 220
Sandstone, dusky-yellow (5 Y 6/4); quartzose, medium to very fine grained, moderately sorted (very fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (very fine), subrounded; crab claws; moderately to well cemented; slightly porous.	5	220 - 225
Sandstone as above; slightly porous; interbedded with about 30 percent sand as in 215 to 220 feet.	2	225 - 227
Silt, light-olive-gray (5 Y 5/2); quartzose, about 40 percent clay; slightly calcareous.	3	227 - 230

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Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6) and grayish-orange (10 YR 7/4); sandy, poorly washed fossiliferous commicrite, mollusks; about 40 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; well cemented; very porous, vugs.	3	4 - 7
Sandstone, very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6), grayish-orange (10 YR 7/4), and light-brown (5 YR 5/6); quartzose, coarse to fine grained, moderately to well sorted (medium), angular to subrounded; about 1 to 3 percent heavy minerals, very fine grained, subangular to subrounded; about 1 to 3 percent iron coating, hematite; about 5 to 10 percent shells and shell fragments, mollusks; about 15 to 20 percent sparite matrix; root casts with calcite cavity-filling cement in center; well cemented; porous, vugs; interbedded with about 20 to 25 percent cavity-filling detritus.	3	7 - 10
Sandstone as above; quartz is moderately sorted (fine); abundant burrows or root casts; very porous, vugs.	4	10 - 14
Sandstone as above; quartzose, coarse to very fine grained, poorly sorted, angular to subrounded; about 10 percent shells and shell fragments, mollusks, and bryozoans, less abundant burrows; porous, vugs; about 15 to 20 percent solution-hole filling sand, very pale-orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, coarse to fine grained, well sorted (medium), subangular to subrounded; about 5 percent heavy minerals, fine grained to silt, angular to subrounded.	3	14 - 17
Sand as above; dark-yellowish-orange (10 YR 6/6) to grayish-orange (10 YR 7/4); interbedded with sandstone at 18.5 to 20 feet.	3	17 - 20
Sand as above.	1	20 - 21
Sandstone, light-brown (5 YR 5/6) to moderate-yellowish-brown (10 YR 5/4); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 15 percent shells and shell fragments, mollusks and bryozoans; about 5 to 10 percent sparite matrix, coated with ferrous minerals; well cemented; porous, vugs; grades to a silty sandstone; quartzose, coarse grained to silt, poorly sorted, angular to subrounded; about 5 to 10 percent shells and shell fragments, mollusks; about 5 to 10 percent sparite matrix, coated by ferrous minerals; well cemented; moderately porous.	3	21 - 24

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, pale-yellowish-orange (10 YR 8/6) to grayish-orange (10 YR 7/4); quartzose, medium to fine grained, well sorted (medium), angular to subangular; about 1 to 3 percent heavy minerals, fine grained to silt, well sorted (silt), angular to subangular; about 10 percent shell fragments; about 10 to 15 percent micrite, not cemented; loosely cemented in places; interbedded with limestone at 26 to 26.5 feet, grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, coarse grained to silt, moderately sorted (medium), angular to subrounded; about 1 percent heavy minerals and phosphorite, fine to very fine grained, angular to rounded; iron-stained matrix; well cemented; porous, moldic and vugs.	3	24 - 27
Sand as above; interbedded with sandstone at 29 to 30 feet, pale-yellowish-orange (10 YR 8/6) and grayish-orange (10 YR 7/4); quartzose, coarse grained to silt, poorly sorted, angular to subangular; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded; about 20 percent shells and shell fragments, mollusks; iron-stained matrix; root casts; well cemented; moderately porous to porous.	3	27 - 30
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biosparite, Ostrea sp. and other mollusks, and echinoid spines; about 25 to 30 percent quartz, coarse to fine grained, moderately sorted (medium), angular to subrounded; well cemented; porous, moldic, framework, interparticle, and vugs.	4	30 - 34
Limestone, very pale orange (10 YR 8/2); pelletiferous packed biomicrite to sandy, pelletiferous packed biomicrite, small pelecypods and bryozoans; neomorphic calcite in matrix; about 5 percent quartz, medium grained, subangular; about 3 to 5 percent heavy minerals and phosphorite, fine grained, subrounded; well cemented; porous, small vugs.	3	34 - 37
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse grained to silt, moderately sorted (very fine), angular to subrounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to subrounded; about 3 to 5 percent casts and molds; well cemented; moderately porous; interbedded with about 20 to 25 percent sand, quartzose, coarse to fine grained, well sorted (medium), angular; about 10 percent heavy minerals and phosphorite, fine grained, angular to rounded.	3	37 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately to well sorted in places (medium), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), angular to rounded; about 5 to 10 percent shells and shell fragments, mol-	4	40 - 44
lusks; about 5 to 10 percent sparite matrix; well cemented; porous, vugs; interbedded with about 20 to 25 percent sand, quartzose, medium to fine grained, well sorted (medium), angular to subangular; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded.		
Sand as above; interbedded with about 25 percent sandstone as above, yellowish-gray (5 Y 8/1) to grayish-orange (10 YR 7/4).	3	44 - 47
Sandstone, yellowish-gray (5 Y 8/1), grayish-orange (10 YR 7/4), dark-yellowish-brown (10 YR 4/2), and dark-yellowish-orange (10 YR 6/6); quartzose, very coarse grained to silt, poorly sorted, angular to rounded; about 10 to 20 percent heavy minerals, phosphorite and ferrous minerals, very coarse to very fine grained, moderately to well sorted in places, angular to rounded; about 10 to 30 percent shell fragments, mollusks, bryozoans, and echinoid spines; about 10 percent sparite; well cemented; porous to moderately porous at 54 to 57 feet, vugs, moldic, and interparticle; grades to a limestone in places at 57 to 60 feet; sandy, sparse biomicrite; interbedded with sand at 47 to 50 feet (as in 40 to 44 feet) and at 54 to 57 feet, quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), angular to well rounded.	17	47 - 64
Limestone, white (N 9); sandy, silty, sparse poorly washed biosparite, benthic foraminifers and mollusks; about 30 percent quartz, fine grained to silt, well sorted (silt), angular to subangular; about 5 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine), angular; well cemented; moderately porous to porous.	3	64 - 67
Limestone, yellowish-gray (5 Y 8/1), white (N 9), and light-olive-brown (5 Y 5/6), mottled; sandy, sparse poorly washed biosparite, mollusks; about 10 percent quartz, fine grained, angular; about 1 percent ferrous minerals; well cemented; moderately porous, moldic and vugs.	3	67 - 70
Limestone as in 64 to 67 feet; white (N 9), yellowish-gray (5 Y 8/1), and light-olive-brown (5 Y 5/6).	4	70 - 74

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subangular; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to subrounded; about 25 percent shells and shell fragments, mollusks including Ostrea sp., and corals; about 30 percent sparite matrix to 40 percent in places; well cemented; porous, moldic and vugs.	3	74 - 77
Limestone, yellowish-gray (5 Y 8/1) to white (N 9); sandy, sparse pelsparite, foraminifers; about 40 to 45 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals and phosphorite, medium to fine grained (fine), subangular to rounded; moderately to well cemented; moderately porous, interparticle and vugs.	3	77 - 80
Limestone, yellowish-gray (5 Y 8/1); sandy, silty, packed biosparite, mollusks; about 30 percent quartz, medium grained to silt, well sorted (very fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine grained, subrounded to rounded; well cemented; moderately porous to porous, moldic and vugs.	4	80 - 84
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subangular to rounded; about 30 to 35 percent shells and shell fragments, <u>Turritella</u> sp. and other mollusks, abundant pellets; grades to a limestone in places; sandy, packed biosparite; loosely to well cemented; moderately porous.	.	84 - 87
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, mollusks; about 25 to 30 percent quartz, medium to very fine grained, angular to subrounded; about 10 percent heavy minerals and phosphorite, fine grained, rounded; well cemented; porous, moldic, interparticle, and vugs.	3	87 - 90
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, medium grained to silt, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine grained to silt, well sorted (silt), subangular to rounded; well cemented; moderately porous.	4	90 - 94

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, packed pelletiferous intrasparite, mollusks; about 35 to 40 percent quartz, medium grained to silt, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine grained to silt, well sorted (silt), subangular to rounded; grades to a sandstone in places; well cemented; moderately porous, vugs and moldic.	3	94 - 97
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks and corals; about 30 percent quartz, coarse to very fine grained, moderately sorted (fine); about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to rounded; well cemented; moderately porous, moldic, framework, and vugs.	3	97 - 100
Limestone as in 94 to 97 feet.	4	100 - 104
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse grained to silt, moderately sorted (very fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, medium grained to silt, well to moderately sorted (very fine) at 107 to 110 feet, subrounded to rounded; about 25 to 30 percent shells and shell fragments, mollusks; about 15 percent sparite matrix; well cemented; moderately porous to porous at 107 to 110 feet, moldic and vugs.	6	104 - 110
Sandstone as above; about 5 to 10 percent heavy minerals and phosphorite, fine grained to silt, well sorted (very fine), subangular to rounded; about 20 percent shell fragments, mollusks and echinoid spines; about 20 to 25 percent sparite matrix; concretionary in places; porous, vugs and moldic.	4	110 - 114
Sandstone as above; very porous, vugs and moldic; grades to a lime- stone toward base; sandy, packed biosparite, Ostrea sp. and other mollusks; neomorphic calcite and cavity-filling calcite; about 30 to 35 percent quartz, coarse grained to silt, poorly sorted, angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), subangular to rounded; well cemented; porous, moldic, interparticle, and vugs; interbedded with about 40 percent sand, quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to rounded; about 30 percent shell fragments.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, <u>Balanus</u> sp., <u>Encope</u> sp., serpulids, and mollusks; cavity-filling calcite; about 30 to 35 percent quartz, medium grained to silt, well sorted (very fine), angular to subangular; about 5 percent heavy minerals, fine grained to silt, well sorted (very fine), subangular to subrounded; well cemented; very porous, moldic, framework, vugs, and interparticle; interbedded with about 25 to 30 percent sand as above.	3	117 - 120
Limestone as above.	4	120 - 124
Limestone, yellowish-gray (5 Y 8/1); sandy, silty, sparse biosparite, mollusks, benthic foraminifers, <u>Balanus</u> sp., and bryozoans; about 25 percent quartz, medium grained to silt, well sorted (very fine), angular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to subrounded; well cemented; moderately porous to porous in places, vugs and interparticle.	6	124 - 130
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, mollusks; about 30 percent quartz, coarse to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; well cemented; moderately porous, moldic and vugs.	4	130 - 134
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse intrasparite, mollusks; about 30 percent quartz, coarse to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; well cemented; moderately porous to porous, vugs and moldic.	3	134 - 137
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse intrasparite, benthic foraminifers and mollusks; about 40 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to subrounded; concretionary in places; well cemented; porous, vugs; interbedded with about 15 to 20 percent sand, quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 10 percent heavy minerals, medium to very fine grained, well sorted (fine), subangular to subrounded; about 40 percent shell fragments and detrital carbonate.	7	137 - 144
Limestone as above; interbedded with about 30 percent sand as above; about 50 percent shell fragments.	3	144 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 30 percent quartz; interbedded with about 35 to 40 percent sand as above.	3	147 - 150
Limestone as in 137 to 144 feet; interbedded with about 30 percent sand as above.	4	150 - 154
Limestone as above; yellowish-gray (5 Y 7/2); well cemented; moder- ately porous, moldic and vugs; no sand.	3	154 - 157
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biosparite, mollusks; about 35 to 40 percent quartz, medium to very fine grained, well sorted (very fine), angular to subangular; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to subrounded; moderately to well cemented; moderately porous, moldic and vugs.	3	157 - 160
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse intrasparite, mollusks; about 35 to 40 percent quartz, medium to very fine grained, well sorted (very fine), angular to subangular; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to subrounded; loosely to moderately cemented; moderately porous, moldic and vugs.	7	160 - 167
Limestone, very pale orange (10 YR 8/2); sandy, sparse intrasparite, mollusks; about 15 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to subrounded; moderately to well cemented; moderately porous, moldic.	3	167 - 170
Limestone, very pale orange (10 YR 8/2); sandy, sparse intrasparite, mollusks; about 35 to 40 percent quartz, coarse to fine grained, well sorted (medium), subangular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (very fine), subrounded to rounded; moderately to well cemented; moderately porous, moldic and vugs.	4	170 - 174
Limestone as above; grading to a sandy, sparse biomicrite toward base, yellowish-gray (5 Y 7/2) and light-olive-gray (5 Y 5/2); about 30 to 35 percent quartz; about 15 percent heavy minerals and phosphorite.	3	174 - 177

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, coarse to very fine grained, well sorted (medium), subangular to rounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; about 10 percent shells and shell fragments, mollusks; phosphatized bone chips; about 30 percent micritic matrix; loosely to well cemented; moderately porous.	7	177 - 184
Sandstone as above; about 15 to 20 percent micritic matrix; about 10 to 15 percent shell fragments.	3	184 - 187
Sandstone as above; quartz is moderately sorted (medium); loosely to moderately cemented.	3	187 - 190
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; about 25 percent shell fragments and detrital carbonate, echinoid spines and Encope sp.	4	190 - 194
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite; bone chips at 195 to 200 feet; about 40 percent quartz, coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; loosely to moderately cemented; slightly to moderately porous.	6	194 - 200
Sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; about 20 to 25 percent micritic matrix; loosely to moderately cemented.	5	200 - 205
Sandstone as above; light-olive-gray (5 Y 5/2); quartz is moderately sorted (fine); about 30 percent shell fragments, abundant Encope sp., Balanus sp., and echinoid spines; about 5 to 10 percent micritic matrix.	5	205 - 210
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, moderately sorted (very fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine grained to silt, well sorted (very fine), subrounded to rounded; about 25 to 30 percent shells and shell fragments, Ostrea sp., and Balanus sp.; about 5 to 10 percent micritic matrix; very loosely to loosely cemented.	5	210 - 215

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; quartzose, coarse grained to silt, well sorted (fine), angular to subrounded; about 10 to 15 percent shell fragments; about 15 to 20 percent micritic matrix; very slightly porous to virtually nonporous.	5	215 - 220
Sandstone as above; about 5 to 10 percent shell fragments, Encope sp.; phosphatized mammal bone chips; about 20 percent micritic matrix; loosely to moderately cemented.	5	220 - 225
Sandstone as above; yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, moderately sorted (fine), angular to subrounded; about 20 percent shell fragments; about 25 percent micritic matrix; moderately cemented.	5	225 - 230
Sandstone as above; quartz is moderately sorted (very fine), about 10 percent shell fragments; small vertabrae and bone chips; about 5 to 10 percent micritic matrix; loosely to moderately cemented.	5	230 - 235
Sand, yellowish-gray (5 Y 7/2); quartzose, fine to very fine grained, well sorted (fine), subangular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 15 percent shell fragments and detrital carbonate; about 5 to 10 percent micrite, not cemented.	5	235 - 240
Sandstone, yellowish-gray (5 Y 7/2); quartzose, fine to very fine grained, well sorted (fine), subangular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 15 to 20 percent micritic matrix; moderately cemented.	5	240 - 2 45
Sand, yellowish-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained to silt, well sorted (fine), angular to well rounded; about 1 percent muscovite; abundant foraminifers; about 10 percent micrite, not cemented.	5	245 - 250

Lithologic Log of Well G-3308

Description	Thick- ness (feet)	Depth, feet below land surface
Fill; interbedded with peat at 4 feet.	5.5	0 - 5.5
Limestone, very pale orange (10 YR 8/2) and pale-yellowish-orange (10 YR 8/6) to grayish-orange (10 YR 7/4); sparse oosparite to sandy, sparse oosparite at 6 to 8 feet, bryozoans; highly weathered; neomorphic calcite in matrix; about 10 percent quartz, medium to fine grained, well sorted (medium), subangular; limestone is coated with micrite, not cemented; well cemented; porous, vugs.	2.5	5.5 - 8
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sandy, sparse biomicrite, mollusks, bryozoans, and Archais sp.; neomorphic and cavity-filling calcite; about 25 to 35 percent quartz, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 1 to 3 percent heavy minerals, fine grained, subangular; grades to a sandy, sparse biosparite in places; very slightly porous to moderately porous and porous in places.	6	8 - 14
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4) to dark-yellowish-orange (10 YR 6/6); sandy, sparse poorly washed biosparite, Archais sp. and mollusks; cavity-filling cement; about 30 to 40 percent quartz, very coarse to fine grained, well sorted (medium), subangular; about 3 to 5 percent heavy minerals, fine grained, subrounded to rounded; grades to a sandstone in places; about 5 percent sparite matrix; well cemented; moderately porous to porous, moldic, vugs, and interparticle.	4	14 - 18
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 3 percent heavy minerals, fine grained, subangular to subrounded; about 1 percent muscovite; about 5 percent micrite, not cemented.	6	18 - 24
Sand as above; quartzose, very coarse grained to silt, moderately sorted (medium), angular to rounded; interbedded with sandy soil at 27.5 to 28 feet, brownish-black (5 Y 2/1).	4	24 - 28
Sand, dusky-yellowish-brown (10 YR 2/2) to dusky-brown (5 YR 2/2) toward base; quartzose, granules to silt, poorly sorted, angular to well rounded; about 20 to 30 percent soil coating on grains.	4	28 - 32
Sand, dusky-brown (5 YR 2/2); quartzose, granules to very fine grained, moderately sorted (medium), angular to rounded; about 3 percent heavy minerals, fine grained, subrounded; about 1 percent muscovite; about 20 to 25 percent soil coating on grains.	2	32 - 34

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, dark-yellowish-brown (10 YR 4/2) to pale-yellowish-brown (10 YR 6/2); quartzose, very coarse to fine grained, moderately to well sorted (fine), angular to well rounded; about 10 percent muscovite; about 30 percent soil coating on sand grains.	6	34 - 40
Sand as in 34 to 40 feet; brownish-gray (5 YR 4/1); about 5 percent muscovite; about 20 percent soil coating on grains.	4	40 - 44
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (fine), subangular to subrounded; about 5 percent muscovite; about 3 to 5 percent heavy minerals, fine grained, subangular to subrounded.	10	44 - 54
Sand as above; quartzose, coarse to fine grained, poorly sorted, subangular to subrounded; about 1 percent heavy minerals.	4	54 - 58
Sand as above; quartzose, coarse grained to silt, moderately to well sorted (fine), subangular to subrounded.	2	58 - 60
Sand, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartz-ose, coarse grained to silt, moderately sorted (fine), subangular to subrounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, well sorted, subangular to rounded.	2	60 - 62
Sand as above; quartz is well sorted (fine); about 5 to 10 percent heavy minerals, fine grained, subangular to rounded.	14	62 - 76
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals, fine grained, subrounded; about 5 to 10 percent muscovite.	14	76 - 90
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (medium), angular to subangular; about 10 percent heavy minerals, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent muscovite; about 10 to 15 percent shell fragments.	8	90 - 98
Sand as above; quartzose, medium grained to silt, moderately to well sorted, subangular to angular; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent shell fragments at 98 to 100 feet.	10	98 - 108
Sand as in 90 to 98 feet.	2	108 - 110

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, <u>Balanus</u> sp., mollusks, and bryozoans; about 10 to 15 percent quartz, medium to fine grained, well sorted (medium), angular to subangular; about 5 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), rounded; about 10 percent organic compounds; loosely to moderately cemented and very loosely to loosely cemented at 116 to 118 feet.	8	110 - 118
Lime mud, yellowish-gray (5 Y 8/1); shelly micrite, not cemented; about 40 percent shell fragments, echinoids, <u>Balanus</u> sp., and mollusks including <u>Pecten</u> sp.; about 10 to 15 percent quartz, medium to fine grained, well sorted (medium), angular to subangular; about 5 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), rounded.	2	118 - 120
No recovery.	1.5	120 - 121.5
Sand, light-gray (N 7); quartzose, medium to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals, fine grained, angular to subrounded; about 45 percent shell fragments and detrital carbonate; cemented in places.	0.5	121.5 - 122
Limestone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, <u>Balanus</u> sp., <u>Ostrea</u> sp., and <u>Pecten</u> sp.; about 25 to 30 percent quartz, medium to fine grained, well sorted (medium), angular to subangular; about 5 percent heavy minerals, fine grained, angular to subrounded; about 3 to 5 percent muscovite; loosely to moderately cemented.	2	122 - 124
Limestone as above; about 10 percent quartz; about 3 percent heavy minerals; moderately to well cemented; moderately porous, moldic, interparticle, and vugs.	4	124 - 128
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); packed biomicrite, Encope sp., serpulids, and encrusting bryozoans; about 5 percent quartz, fine grained, rounded; about 3 to 5 percent heavy minerals, fine grained, rounded; moderately to well cemented; porous, framework, interparticle, and moldic.	2	128 - 130
Limestone as above; benthic foraminifers toward base; about 10 to 15 percent quartz; about 5 to 10 percent heavy minerals and phosphorite.	10	130 - 140
Limestone as above; sandy, packed biomicrite; about 25 percent quartz; about 5 to 10 percent heavy minerals and phosphorite.	5	140 - 145

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; including <u>Turritella</u> sp.; about 30 percent quartz, coarse to fine grained, well sorted (fine), subrounded to rounded.	5	145 - 150
Limestone as above; about 40 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals; grades to a sandstone at 154 to 155 feet; about 10 percent shell fragments; about 30 percent sparite matrix; well cemented; slightly to moderately porous, moldic and vugs.	5	150 - 155
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded; about 10 percent shell fragments; cemented in places into a sandstone (about 20 percent).	5	155 - 160
Sand as above; about 3 percent shell fragments; cemented into a sandstone at 164 to 165 feet; about 5 percent shell fragments; about 5 to 10 percent sparite matrix; well cemented.	5	160 - 165
Sand as above; cemented in places into about 10 percent sandstone; <u>Encope</u> sp. and <u>Pecten</u> sp.	5	165 - 170
Sand as above; about 10 to 15 percent heavy minerals; cemented into about 10 to 20 percent sandstone.	5	170 - 175
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 3 percent shell fragments, mollusks; cemented into about 10 percent sandstone.	5	175 - 180
Sand as above; about 10 to 15 percent heavy minerals and phosphorite; about 20 percent shell fragments, mollusks including <u>Pecten</u> sp. and sponge spicules.	5	180 - 185
Sand, yellowish-gray (5 Y 8/1); quartzose, fine grained to silt, well sorted (fine), angular; about 25 to 30 percent heavy minerals and phosphorite, fine grained, angular to rounded; about 5 percent muscovite; about 10 percent shell fragments, Pecten sp.; about 5 to 10 percent micrite, not cemented; cemented in places into a sandstone, olive-gray (5 Y 4/1).	5	185 - 190

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartz-ose, coarse grained to silt, poorly to moderately sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subangular to rounded.	4	190 - 194
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, well sorted (fine), angular to subrounded; about 25 to 30 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; abundant sponge spicules and about 5 percent shell fragments, mollusks; about 10 percent micrite, not cemented.	3	194 - 197
Sand as above; about 5 percent muscovite; about 3 to 5 percent clay.	3	197 - 200
Sand as above; about 10 percent clay; interbedded with layers of silty claystone, light-olive-gray (5 Y 5/2); very calcareous; abundant foraminifers (mostly benthic), sponge spicules; moderately to well cemented.	4	200 - 204
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (medium), subangular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to subrounded; about 5 to 10 percent muscovite; interbedded with about 10 percent claystone as above.	3	204 - 207
Sand as above; interbedded with about 20 to 25 percent claystone as above.	3	207 - 210
Claystone, olive-gray (5 Y 4/1); silty, calcareous, and slightly dolomitic; moderately to well cemented; virtually nonporous; interbedded with about 30 percent sand as above.	5	210 - 215
Sand as above; interbedded with about 30 percent claystone as above.	5	215 - 220
Claystone as above; olive-gray (5 Y 4/1) and light-olive-gray (5 Y 5/2); interbedded with about 10 to 20 percent sand as above.	5	220 - 225
Sand as above; pale-olive (10 Y 6/2); about 10 to 15 percent foraminiferal ooze; abundant sponge spicules; interbedded with about 15 to 20 percent claystone as above; abundant foraminifers and sponge spicules.	5	225 - 230

Lithologic Log of Well G-3309

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	2	0 - 2
Peat and soil.	4	2 - 6
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, poorly washed oosparite; about 10 percent quartz, fine grained, subangular; grades to a sandy oomicrite in places; well cemented; moderately porous, vugs; contains about 20 percent peat in solution holes.	2	6 - 8
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed oosparite, mollusks; about 10 percent quartz, fine grained, subangular; grades to a sandy oomicrite in places; well cemented; moderately porous to porous, vugs; contains about 10 percent peat in solution holes.	2	8 - 10
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and moderate-yellowish-brown (10 YR 5/4); sandy, intraclastic sparse biomicrite; grades to a sandy, sparse poorly washed biosparite in places, Archais sp.; about 10 to 30 percent quartz in places, medium to fine grained, well sorted (medium), angular to subrounded; well cemented; very slightly to moderately porous, vugs.	2	10 - 12
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and moderate-yellowish-brown (10 YR 5/4); sandy, sparse poorly washed intrasparite to a sandy, sparse intramicrite in places; about 35 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; moderately to well cemented; slightly porous, vugs.	2	12 - 14
Limestone as above; in contact with freshwater limestone, olive-gray (5 Y 4/1); sparse poorly washed biosparite, benthic foraminifers, and mollusks including gastropods; well cemented; virtually nonporous; interval contained about 5 percent calcrete crust.	2	14 - 16
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse poorly washed biosparite grades to a sandy, sparse biomicrite in places, mollusks and benthic foraminifers, Archais sp.; cavity-filling calcite cement; about 30 to 40 percent quartz toward base, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent ferrous minerals, specks; about 1 to 3 percent heavy minerals, fine grained, rounded; very well cemented; slightly to moderately porous in places, small vugs.	4	16 - 20

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 35 to 40 percent quartz; about 5 percent ferrous minerals; moderately porous to porous, vugs, interparticle, and moldic.	2	20 - 22
Sand, pinkish-gray (5 YR 8/1); quartzose, very coarse to fine grained, moderately sorted (medium), subangular to rounded; about 3 percent heavy minerals, medium to fine grained, well sorted (fine), subrounded to rounded; cemented in places to about 20 percent calcareous sandstone.	10	22 - 32
Sand, pinkish-gray (5 YR 8/1); quartzose, very coarse to fine grained, moderately sorted (fine), subangular to rounded; about 5 to 10 percent heavy minerals, fine grained, subangular to rounded.	2	32 - 34
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained grained, well sorted (fine), subrounded; about 1 to 3 percent muscovite; about 30 to 40 percent soil, grayish-black (N 2).	2	34 - 36
Sand, dark-yellowish-brown (10 YR 4/2); quartzose, granules to silt, poorly sorted, angular to rounded; about 30 to 35 percent soil to about 20 percent toward base.	4	36 - 40
Sand, light-olive-gray (5 Y 6/1) and light-olive-gray (5 Y 5/2) at 46 to 48 feet; quartzose, coarse grained to silt, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine to very fine at 40 to 42 feet), angular to subrounded.	12	40 - 52
Sand as above; about 10 to 15 percent heavy minerals and phosphorite, fine grained, angular to well rounded; about 3 percent muscovite; about 3 percent shell fragments, mollusks.	6	52 - 58
Sand as above; quartzose, very coarse grained to silt, moderately sorted (fine); about 25 to 30 percent shells and shell fragments at 59.5 to 60 feet, mollusks.	2	58 - 60
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent muscovite; about 25 to 30 percent shell fragments, mollusks.	2	60 - 62
Sand as above; about 20 percent shell fragments; about 5 percent calcareous clay.	2	62 - 64

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, well sorted (medium), subangular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent muscovite; about 5 to 10 percent small shell fragments; about 5 to 10 percent clay at 65 to 66 feet.	2	64 - 66
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); quartz-ose, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent muscovite; about 5 percent shell fragments; about 10 to 20 percent calcareous, silty clay.	2	66 - 68
Sand as above; about 5 to 10 percent shell fragments, small mollusks; about 1 to 3 percent muscovite; about 30 to 35 percent silty micrite, not cemented.	6	68 - 74
Sand as above; about 3 to 5 percent shell fragments.	6	74 - 80
Sand as above; about 5 percent shell fragments; about 5 percent muscovite.	5	80 - 85
Sand as above; about 25 percent shell fragments; about 35 percent silty micrite, not cemented.	5	85 - 90
Sand as above; about 3 to 5 percent shell fragments; about 30 to 35 percent silty micrite, not cemented.	10	90 - 100
Shells and shell fragments, mollusks including Olivella sp. and Pecten sp.; about 30 percent sand as above; about 15 to 20 percent micrite, not cemented.	2	100 - 102
Sand as in 85 to 90 feet; about 35 to 40 percent shell fragments.	2	102 - 104
Sand as above; about 25 to 30 percent shell fragments.	2	104 - 106
Sand as above; quartzose, fine grained to silt, well sorted (fine), angular; about 15 percent shell fragments.	2	106 - 108
Sand as above; about 5 percent shell fragments.	1.5	108 - 109.5

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to medium-gray (N 5); sandy, packed biomicrite to sandy, packed poorly washed biosparite, abundant Encope sp., bryozoans, Ostrea sp. and other mollusks, and benthic foraminifers; about 5 percent quartz, fine grained, subangular; about 5 percent heavy minerals and phosphorite, fine grained, subangular to subrounded; moderately to well cemented; moderately porous to porous, interparticle, framework, and moldic.	8.5	109.5 - 118
Limestone as above; about 10 to 20 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; moderately cemented.	7	118 - 125
Limestone as above; about 25 to 30 percent quartz.	5	125 - 130
Limestone as above; yellowish-gray (5 Y 7/2); <u>Turritella</u> sp.; about 20 to 30 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; moderately to well cemented; porous, moldic, interparticle, and framework.	5	130 - 135
Limestone, yellowish-gray (5 Y 7/2); sandy, intraclastic packed biomicrite, mollusks; about 40 percent quartz, coarse to very fine grained, poorly sorted, angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to well rounded; well cemented to loosely cemented at 140 feet; moderately porous to porous, intraparticle, moldic, and small vugs.	5	135 - 140
Limestone, yellowish-gray (5 Y 7/2); sandy, sparse biomicrite, mollusks; about 35 percent quartz, coarse to fine grained, moderately to well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, angular to well rounded; loosely to moderately cemented.	4	140 - 144
Sandstone, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately to well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, angular to well rounded; about 20 percent shell fragments, mollusks and Balanus sp.; about 10 to 20 percent micritic matrix; is a limestone in places as above; very loosely to moderately cemented.	3	144 - 147
Sandstone as above; very loosely to loosely cemented.	10	147 - 157

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded; about 10 percent shell fragments, echinoid spines, sponge spicules, mollusks, and claws.	3	157 - 160
Sand as above; about 20 to 25 percent detrital carbonate and shell fragments, Encope sp., bryozoans, Peccent sold other mollusks; interbedded with about 5 percent silty sandstone; slightly calcareous.	7	160 - 167
Sand, yellowish-gray (5 Y 8/1) to light-gray (N 7); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to subrounded; about 30 percent detrital carbonate and shell fragments, mollusks; interbedded with about 5 percent silty sandstone as above.	3	167 - 170
Sand as in 157 to 160 feet; about 30 to 35 percent detrital carbon- ate, shells and shell fragments, mantaray teeth, bryozoans, <u>Balanus</u> sp., <u>Pecten</u> sp., and other mollusks.	7	170 - 177
Sand as above; about 25 percent detrital carbonate and shell frag- ments as above.	7	177 - 184
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, very coarse to very fine grained, moderately sorted (fine), subangular to well rounded; about 35 to 40 percent detrital carbonate and shell fragments as above.	3	184 - 187
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to well rounded; about 5 to 10 percent shell fragments, Pecten sp., echinoid spines, and sponge spicules; interbedded with about 20 percent calcareous, silty sandstone; quartzose, fine grained, angular; about 15 percent heavy minerals and phosphorite, fine grained, angular to subrounded; about 10 percent shell fragments; well cemented.	3	187 - 190

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; interbedded with about 30 to 40 percent silty sand- stone as above.	4	190 - 194
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium grained to silt, well sorted (very fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent shell fragments; about 5 to 10 percent micritic matrix; loosely to moderately cemented; interbedded with about 20 to 30 percent sand, quartzose, medium grained to silt, moderately sorted (fine), angular to subrounded; about 5 to 10 percent shell fragments.	2	194 - 196
Sandstone as above; quartzose, fine grained to silt, well sorted (very fine), angular; about 5 percent muscovite; about 5 percent shell fragments; about 20 percent micritic matrix; interbedded with about 30 percent sand as above.	4	196 - 200
Sand, dusky-yellow (5 Y 6/4) to pale-olive (10 Y 6/2); quartzose, fine grained to silt, moderately to well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 3 percent muscovite; about 5 percent shell fragments; about 15 percent micrite, not cemented.	2	200 - 202
No recovery.	2	202 - 204
Sand as in 200 to 202 feet; yellowish-gray (5 Y 7/2); about 5 to 10 percent heavy minerals and phosphorite; about 5 to 10 percent shell fragments; about 1 to 3 percent micrite, not cemented.	3	204 - 207
Sand as above; dusky-yellow (5 Y 6/4) to pale-olive (10 Y 6/2); about 20 to 30 percent silt; about 20 percent micrite, not cemented.	3	207 - 210

Lithologic Log of Well G-3310

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	2	0 - 2
Limestone, very pale orange (10 YR 8/2); fossiliferous oomicrite to sparse oomicrite in places at 2 to 3 feet, mollusks; neomorphic cement in matrix; about 3 to 5 percent quartz, very fine grained, angular; well cemented; porous to very porous, vugs.	3	2 - 5
Limestone, very pale orange (10 YR 8/2) and medium-gray (N 5); sparse comicrite to sparse poorly washed biosparite in places, mollusks; neomorphic cement in matrix; about 3 to 5 percent quartz, very fine grained, angular; well cemented; porous, vugs.	5	5 - 10
Limestone, very pale orange (10 YR 8/2); sandy, sparse comicrite; neomorphic cement; about 20 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well cemented; cavernous; cavity is filled with rock detritus.	4	10 - 14
Limestone as above; very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sparse poorly washed oosparite in places.	2	14 - 16
Limestone, very pale orange (10 YR 8/2); sandy, oolite-bearing poorly washed biosparite, mollusks; about 20 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well cemented; cavernous; cavity-filling detritus.	2	16 - 18
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sandy, unsorted packed biosparite, mollusks and Archais sp.; about 20 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; grades to a sparse poorly washed biosparite and to fossiliferous micrite in places; well cemented; moderately porous, vugs.	2	18 - 20
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite to a micrite, mollusks and <u>Archais</u> sp.; siliceous replacement is evident in matrix; about 10 to 15 percent quartz, fine grained, angular to subrounded; well cemented; moderately porous to porous, moldic and vugs.	2	20 - 22
Limestone, very pale orange (10 YR 8/2); sandy, intraclastic sparse poorly washed biosparite, mollusks; about 10 to 15 percent quartz, fine grained, angular to subrounded; well cemented; porous, moldic and vugs.	2	22 - 24

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks including Chione sp.; about 10 percent quartz, fine grained, angular to subrounded; well cemented; porous, moldic and vugs.	1	24 - 25
Limestone, medium-gray (N 5) to light-olive-gray (5 Y 6/1); sandy, poorly washed biosparite, <u>Helisoma</u> sp.; about 10 to 15 percent quartz, fine grained, angular to subrounded; well cemented; moderately porous, moldic.	1	25 - 26
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biomicrite, mollusks; neomorphic calcite in tests and matrix; about 20 percent quartz, fine grained, angular to subrounded; well cemented; slightly to moderately porous, moldic.	2	26 - 28
Limestone as above; very pale orange (10 YR 8/2); bryozoans and mol- lusks; about 10 to 20 percent quartz; moderately porous, moldic.	2	28 - 30
Limestone as above; sandy, sparse biomicrite to sandy, sparse poorly washed biosparite in places, corals and mollusks; well cemented; porous, moldic, framework, and vugs.	2	30 - 32
Limestone, very pale orange (10 YR 8/2); sparse biomicrite, Helisoma sp.; neomorphic and cavity-filling calcite; well cemented; moderately porous to porous, moldic; is a sparse biomicrite at 33.5 to 34 feet, abundant benthic foraminifers including Archais sp., cherty texture; very well cemented; slightly to moderately porous, moldic.	2	32 - 34
Limestone, very pale orange (10 YR 8/2); sandy, packed poorly washed biosparite, mollusks and <u>Archais</u> sp.; about 10 percent quartz, fine grained, angular to subangular; well to very well cemented; moderately porous to porous, vugs.	2	34 - 36
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite to fossiliferous dismicrite in places, Nonion sp. and Helisoma sp.; about 20 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; loosely to well cemented; slightly porous to porous, moldic.	1	36 - 37
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biomicrite, benthic foraminifers and Helisoma sp.; about 30 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic and vugs.	1	37 - 38

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite to sandy, sparse biosparite, Archais sp. and mollusks; about 10 percent quartz, fine grained, angular to subangular; well to very well cemented; moderately porous to porous, vugs.	2	38 - 40
Limestone as above; about 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine grained, subrounded; grades to a sandy, packed poorly washed biosparite in places, mollusks; about 25 to 30 percent quartz; well cemented; porous, moldic; also grades to a sandy, sparse poorly washed biosparite; about 30 to 35 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 3 percent heavy minerals and ferrous minerals; well cemented; slightly porous, moldic.	2	40 - 42
Limestone as above; sandy, sparse poorly washed biosparite, Chione sp., gastropods, and large pelecypods; about 25 to 30 percent quartz; well cemented; moderately porous to porous, moldic and vugs.	2	42 - 44
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks; about 20 to 25 percent quartz, coarse to very fine grained, moderately sorted (medium), angular to subrounded; about 5 percent heavy minerals, fine grained, subrounded; well cemented; moderately porous, moldic.	2	44 - 46
Sand, very light gray (N 8); quartzose, coarse to very fine grained, moderately sorted (medium), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; about 15 percent small shell fragments and detrital carbonate; about 5 percent collophane.	2	46 - 48
Sand as above; yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 15 percent heavy minerals, collophane, ferrous minerals, and phosphorite; about 3 to 5 percent shell fragments; about 5 percent micrite, not cemented.	2	48 - 50
Sand as above; very light gray (N 8); interbedded with about 20 percent limestone; sandy, poorly washed sparite; grades to a calcareous sandstone.	2	50 - 52

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately to well sorted (fine), angular to rounded; about 10 percent heavy minerals, phosphorite, and collophane, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 percent shell fragments; about 10 percent limestone; sandy micrite; grades to a sandstone in places.	4	52 - 56
Sand as above; about 10 to 20 percent heavy minerals and phosphorite, very coarse to very fine grained, well sorted (fine to very fine toward base), subangular to rounded; about 5 percent sandy micrite toward base.	4	56 - 60
Sand, yellowish-gray (5 Y 8/1 and 5 Y 7/2); quartzose, coarse to very fine grained, moderately (fine) to poorly sorted, angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, very coarse to very fine grained, well sorted (very fine), subangular to rounded; about 5 percent clay; interbedded with about 10 percent sandy micrite as above.	2	60 - 62
Sand as above; quartz is moderately to well sorted (fine); about 10 percent clay.	2	62 - 64
Sand as above; quartzose, coarse grained to silt, well sorted (fine), angular to rounded; about 20 to 25 percent phosphorite and heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; about 3 to 5 percent muscovite.	6	64 - 70
Sand, yellowish-gray (5 Y 7/2); quartzose, pebbles to silt, poorly sorted, angular to well rounded; about 20 to 25 percent heavy minerals and phosphorite, pebbles to very fine grained, poorly sorted, subangular to well rounded; about 40 to 45 percent large shell fragments, pelecypods, gastropods, and other mollusks.	4	70 - 74
Sand as above; about 30 to 35 percent shell fragments, smaller serpulids, Olivella sp., and other mollusks.	3	74 - 77
Sand as above; quartz is moderately sorted (fine); about 35 percent shell fragments, both large and small.	3	77 - 80
Shells and shell fragments, large and small mollusks; about 35 to 40 percent sand as in 70 to 74 feet.	4	80 - 84

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 25 to 30 percent heavy minerals and phosphorite, fine to very fine grained, subangular to rounded; about 5 to 10 percent shell fragments; about 3 to 5 percent micrite, not cemented.	6	84 - 90
Sand as above; about 3 to 5 percent muscovite; about 20 to 25 percent shell fragments.	4	90 - 94
Shells and shell fragments, large and small mollusks; about 30 to 35 percent sand as above, quartzose, coarse grained to silt, moderately sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite; about 10 to 15 percent micrite, not cemented.	3	94 - 97
Shells and shell fragments; about 25 to 30 percent sand as above; about 10 to 15 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (fine), subangular to rounded.	3	97 - 100
Shells and shell fragments, large and small mollusks; about 15 to 20 percent sand as above, quartzose, granules to very fine grained, poorly sorted, angular to well rounded; about 10 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (fine), angular to rounded; about 5 percent RF, sandstone; about 20 to 30 percent sparite matrix.	4	100 - 104
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, subangular to rounded; about 20 to 25 percent shell fragments, Olivella sp., Pecten sp. and other mollusks; about 20 percent micrite, not cemented.	3	104 - 107
Sand as above; about 15 to 20 percent shell fragments; about 30 percent micrite, not cemented.	3	107 - 110
Sand as above; quartzose, medium grained to silt, well sorted (fine), angular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 20 percent micrite, not cemented.	4	110 - 114
Sand as above; quartzose, fine grained to silt, well sorted (fine), angular; about 10 to 15 percent shell fragments; about 30 percent micrite, not cemented; about 3 percent organics at 117 to 120 feet.	6	114 - 120

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, large to small mollusks; about 15 to 20 percent sand, quartzose, very coarse to fine grained, poorly to moderately sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), angular to rounded; about 3 percent muscovite.	4	120 - 124
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to subrounded; about 35 to 40 percent shell fragments, mollusks, large to small.	3	124 - 127
Shells and shell fragments, mollusks including Olivella sp. and Pecten sp., and bryozoans; about 25 to 30 percent sand, quartzose, granules to very fine grained, poorly to moderately (medium) sorted, subangular to rounded; about 5 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (medium), subrounded to well rounded; loosely cemented in places into a (coquina) sandy, packed biomicrite; about 3 to 5 percent RF, calcareous sandstone with black carbonaceous coating.	. 7	127 - 134
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to well rounded; about 5 percent muscovite; about 35 to 40 percent shells and shell fragments, corals, bryozoans, and sponge spicules.	6	134 - 140
Shells and shell fragments, <u>Turritella</u> sp. and other mollusks; about 20 to 25 percent sand as above.	4	140 - 144
Sand, light-olive-gray (5 Y 6/1); quartzose, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded; about 3 to 5 percent muscovite; about 15 to 20 percent shells and shell fragments; about 15 to 20 percent micrite, not cemented.	6	144 - 150
Shells and shell fragments, mollusks; about 20 to 25 percent sand as above.	4	150 - 154
Sand as in 144 to 150 feet.	6	154 - 160

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to light-gray (N 7); sandy, packed biomicrite, Balanus sp., and mollusks; about 25 percent quartz, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine grained, subangular to rounded; very loosely to loosely cemented.	4	160 - 164
Limestone, light-gray (N 7) to medium-gray (N 5); sandy, packed poorly washed biosparite to sandy, sparse poorly washed biosparite in places at 164 to 167 feet; about 25 to 30 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 5 percent heavy minerals and phosphorite; moderately to well cemented.	10	164 - 174
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, packed biomicrite, mollusks; about 35 percent quartz, medium grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; moderately to well cemented; moderately porous to porous, moldic and interparticle.	3	174 - 177
Limestone, yellowish-gray (5 Y 8/1) to medium-gray (N 5); sandy, packed biomicrite to sandy, packed biosparite, mollusks, coquinoid texture; about 40 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, subangular to rounded; well cemented; porous, moldic and interparticle.	3	177 - 180
Limestone, yellowish-gray (5 Y 8/1); sandy, packed poorly washed biosparite, mollusks and mantaray teeth; about 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; moderately to well cemented; porous, moldic and interparticle.	5	180 - 185
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded; about 40 percent detrital carbonate and shell fragments; about 5 percent micritic matrix; loosely to moderately cemented.	5	185 - 190

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biomicrite, mollusks including Pecten sp.; about 25 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded; grades to a sandstone in places; moderately to well cemented.	4	190 - 194
Sandstone as above; light-olive-gray (5 Y 6/1); about 30 to 35 percent shells and shell fragments, Pecten sp. and Balanus sp.; casts and molds texture; moderately to well cemented; moderately porous, moldic.	3	194 - 197
Sandstone as above; grades to a limestone in places; loosely to well cemented; interbedded with about 40 percent sand, quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to well rounded.		197 - 200
Sand, medium-light-gray (N 6); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 25 to 30 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to well rounded; about 15 to 20 percent shells and shells fragments, mollusks, mantaray teeth, and bryozoans; about 5 percent RF, sandy micrite.	10	200 - 210
Sand as above; quartzose, very coarse to very fine grained, moderately to well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, very coarse to very fine grained, well sorted; about 30 percent shells and shell fragments, Pecten sp. and echinoid spines.	4	210 - 214
Sand as above; quartzose, granules to very fine grained, moderately to well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, granules to very fine grained, moderately to well sorted (fine), subangular to well rounded; about 30 percent shell fragments.	3	214 - 217
Sand, light-olive-gray (5 Y 6/1); quartzose, granules to very fine grained, moderately sorted (medium), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (very fine), subangular to well rounded; about 25 percent shell fragments, mollusks; about 20 percent micrite, not cemented; cemented in places into a calcareous sandstone.	3	217 - 220

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; quartzose, coarse to very fine grained, moderately sorted (fine); about 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine); about 10 to 15 percent shell fragments and about 5 percent toward base; about 5 to 10 percent muscovite; interbedded with about 20 percent sandy, calcareous siltstone to about 35 percent toward base, dusky-yellow-green (5 GY 5/2); containing benthic and planktonic foraminifers.	10	220 - 230
Sand as above; about 5 to 10 percent shell fragments and about 15 percent at 234 to 237 feet; interbedded with about 35 to 50 percent in places; sandy, calcareous, clayey siltstone grades to a sandstone in places at 234 to 237 feet; abundant foraminifers.	9.5	230 - 239.5
Siltstone, pale-olive (10 Y 6/2); sandy, calcareous siltstone grades to a calcareous, clayey siltstone in places; about 10 percent muscovite; well cemented; virtually nonporous.	0.5	239.5 - 240
Sand as above; interbedded with siltstone as above at 241, 243, and 244 feet.	4	240 - 244
Sand as above; interbedded with siltstone at 245.5 feet and 246.5 to 247 feet.	3	244 - 247
Siltstone as above; interbedded with sand as above at 247.5 feet and 249.5 to 250 feet.	3	247 - 250

Lithologic Log of Well G-3311

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	5	0 - 5
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); fossiliferous oosparite, bryozoans and mollusks; well cemented; very porous, vugs.	1	5 - 6
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4), pale-yellowish-orange (10 YR 8/6), and moderate-yellowish-brown (10 YR 5/4); sandy, sparse oosparite, mollusks; well cemented; very porous, vugs.	2	6 - 8
Limestone as in 5 to 6 feet; rims of solution holes are medium-dark-gray (N 4).	2	8 - 10
Limestone as in 6 to 8 feet; very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4).	2	10 - 12
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, oolite-bearing sparse poorly washed biosparite, Chione sp. and bryozoans; about 10 to 20 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; well to very well cemented; porous to very porous, moldic and vugs.	4	12 - 16
Limestone as above; interfingering with fossiliferous sparite, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and dark-yellowish-orange (10 YR 6/6), mottled; well to well very cemented; slightly to moderately porous, vugs.	2	16 - 18
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), dark-yellowish-orange (10 YR 6/6), and grayish-yellow-green (5 GY 7/2); sparse biomicrite to intraclastic sparse biosparite, abundant Archais sp., and mollusks; well cemented; moderately porous to porous, interparticle, moldic, and vugs.	2	18 - 20
Limestone, very pale orange (10 YR 8/2); sparse poorly washed bio- sparite, mollusks; well cemented; moderately porous to porous, moldic and vugs.	2	20 - 22
Limestone as above; corals; grades to a sandy, packed biosparite toward base, mollusks; about 15 percent quartz, fine grained, angular; rims of solution holes are light-olive-gray (5 Y 5/2) to medium-light-gray (N 6); well cemented; very porous, moldic and vugs; interfingering with freshwater limestone, fossiliferous sparite; about 5 percent quartz, very fine grained, angular; well cemented; slightly porous at 23 to 24 feet.	2	22 - 24

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4) and medium-gray (N 5); sandy, packed biosparite to sandy, packed biomicrite at 25 to 26 feet; about 20 to 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; moderately to well cemented; porous, moldic and vugs.	2	24 - 26
Limestone, very pale orange (10 YR 8/2) and light-olive-gray (5 Y 6/1); sandy, fossiliferous sparite to sandy, sparse poorly washed biosparite, freshwater gastropods; about 20 to 30 percent quartz, fine to very fine grained, well sorted (fine to very fine toward base), angular to subrounded; very well cemented; slightly to moderately porous, moldic and vugs.	2.5	26 - 28.5
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, corals and mollusks including <u>Chione</u> sp.; about 15 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; very well cemented; slightly to moderately porous, moldic.	1	28.5 - 29.5
Limestone, very pale orange (10 YR 8/2) to medium-gray (N 5); fos- siliferous sparite, freshwater gastropods; very well cemented; slightly porous, small vugs.	0.5	29.5 - 30
Limestone as above; grades to a sparse biosparite, corals and mol- lusks; very well cemented; slightly porous to porous toward base, moldic and vugs.	2	30 - 32
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 20 to 25 percent quartz, very fine grained, angular to subangular; about 3 to 5 percent heavy minerals and ferrous minerals, very fine grained, angular to subrounded; well cemented; moderately porous to porous, moldic and vugs.	4	32 - 36
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, abundant <u>Chione</u> sp.; about 15 to 20 percent quartz, fine grained, angular; well cemented; porous to very porous, moldic; interfingering with about 5 percent freshwater limestone, pale-yellowish-brown (10 YR 6/2); sparse poorly washed biosparite, <u>Helisoma</u> sp.; about 25 percent quartz, fine grained, angular; porous, moldic.	2	36 - 38
Limestone as in 32 to 36 feet; <u>Chione</u> sp.; porous to very porous, moldic and vugs.	2	38 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 30 percent quartz, very fine grained, angular to subrounded; interfingering with freshwater limestone, pale-yellowish-brown (10 YR 6/2); sandy, sparse poorly washed biosparite, freshwater gastropods; about 10 to 15 percent quartz, fine to very fine grained, angular to subangular; well cemented; moderately porous to porous, moldic.	2	40 - 42
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sandy, sparse biosparite, Archais sp. and mollusks including Chione sp.; cavity-filling calcite; about 5 to 15 percent quartz, fine to very fine grained, angular to subrounded; about 3 to 5 percent heavy minerals, very fine grained, subrounded to rounded; well to very well cemented; porous, moldic and vugs.	4	42 - 46
Limestone as above; grades to a sandy, sparse poorly washed biospar- ite, <u>Chione</u> sp. and other mollusks; about 25 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to sub- rounded; about 1 to 3 percent heavy minerals, very fine grained; well cemented; porous, moldic and vugs.	2	46 - 48
Limestone, very pale orange (10 YR 8/2); sandy, sparse to packed biosparite, <u>Chione</u> sp. and other mollusks; about 25 to 30 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 1 to 5 percent heavy minerals, very fine grained, subrounded; well cemented; porous, moldic.	4	48 - 52
Limestone as above; very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sandy, sparse biosparite; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, moderately sorted (fine), angular to rounded; well cemented; slightly porous to porous toward base, moldic.	2	52 - 54
Limestone, yellowish-gray (5 Y 7/2) and pinkish-gray (5 YR 8/1); sandy, packed biosparite, mollusks including Olivella sp.; about 35 to 40 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (fine), angular to subrounded; is a sandstone in places; very loosely to well cemented in places.	2	54 - 56
Sand, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, very fine grained, rounded; about 40 percent shells and shell fragments, mollusks; bone chips; loosely cemented in places.	2	56 - 58

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, fine grained to silt, well sorted (very fine), angular; about 20 percent heavy minerals, fine to very fine grained, subrounded to well rounded; about 20 percent shell fragments.	2	58 - 60
Sand as above; about 35 to 40 percent shell fragments.	4	60 - 64
Shells and shell fragments, mollusks; about 5 to 20 percent sand as above.	3	64 - 67
Shells and shell fragments as above; about 40 to 45 percent sand as above; in contact with sandy, calcareous silt at 73.5 to 74 feet.	. 7	67 - 74
Sand, light-olive-gray (5 Y 5/2); quartzose, very fine grained to silt, well sorted (very fine), angular; about 20 percent heavy minerals, very fine grained, angular to subrounded; about 10 percent shell fragments, mollusks; about 10 to 15 percent micrite, not cemented.		74 – 77
Silt, dusky-yellowish-brown (10 YR 2/2); sandy; quartzose, very fine grained, angular; about 5 percent shell fragments, mollusks; about 5 percent organics; about 30 percent micrite, not cemented.	3	77 - 80
Soil, dusky-yellowish-brown (10 YR 2/2); silty and sandy; about 5 to 10 percent shell fragments, mollusks and claws; about 20 to 30 percent micrite, not cemented.	3	80 - 83
Limestone, yellowish-gray (5 Y 8/1); sandy, silty, packed biomicrite, mollusks; loosely cemented; interbedded with about 30 percent soil as above; about 30 percent shells and shell fragments, land snails.	2	83 - 85
Sand, grayish-pink (10 YR 8/1); quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals, fine grained, subrounded; about 40 to 45 percent shell fragments.	5	85 - 90
Shells and shell fragments, mollusks; about 20 percent sand as above.	4	90 - 94
Shells and shell fragments, mollusks; loosely to well cemented in places into a sandy, packed biomicrite to sandy, packed poorly washed biosparite, coquinoid texture.	10	94 - 104

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments as above; about 20 percent sand, yellow-ish-gray (5 Y 8/1) to very light gray (N 8), quartzose, coarse to fine grained, moderately sorted, angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), angular to well rounded.	3	104 - 107
Sand as above; about 35 to 40 percent shells and shell fragments, mollusks.	3	107 - 110
Shells and shell fragments, mollusks; very loosely cemented in places; about 10 percent sand as above.	4	110 - 114
Sand, yellowish-gray (5 Y 8/1) to medium-gray (N 5); quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, fine to very fine grained, angular to rounded; about 25 to 35 percent shells and shell fragments, mollusks and echinoid spines; bone chips; loosely cemented in places.		114 - 120
Sand as above; about 20 percent shells and shell fragments, small.	4	120 - 124
Sand as above; about 25 to 30 percent shell fragments, small.	6	124 - 130
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to well rounded; about 35 to 40 percent shell fragments; loosely cemented in places; interbedded with about 20 percent limestone, light-olive-gray (5 Y 6/1); sandy, packed biomicrite, mollusks; about 25 to 30 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to well rounded; moderately cemented; slightly porous, moldic.	4	130 - 134
Sand as in 124 to 130 feet; about 35 to 40 percent shell fragments.	3	134 - 137
Shells and shell fragments, mollusks; about 30 percent sand as above.	1	137 - 138
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, mollusks; about 35 to 40 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), rounded to well rounded; well cemented; porous, moldic and interparticle.	6	138 - 144

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1); sandy, packed biomicrite, mollusks; about 30 to 35 percent quartz, fine to very fine grained, well sorted (fine), angular; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded; moderately to well cemented; moderately porous, moldic.	3	144 - 147
Limestone as in 138 to 144 feet; about 30 percent quartz, coarse to fine grained, moderately to well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to subrounded; loosely to well cemented; moderately porous, moldic and interparticle.	3	147 - 150
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, bryozoans, Pecten sp. and other mollusks; about 30 to 35 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; well cemented; moderately porous to porous, moldic, interparticle, and moldic.	4	150 - 154
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, <u>Turritella</u> sp.; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; moderately to well cemented; moderately porous to porous, moldic.	3	154 - 157
Limestone, yellowish-gray (5 Y 8/1) to medium-gray (N 5); sandy, sparse biosparite, mollusks including Pecten sp.; about 35 to 40 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (medium), angular to rounded; well to very well cemented; slightly to moderately porous in places, interparticle and moldic.	3	157 - 160
Limestone as above; grades to a sandy, packed biosparite in places, Turritella sp., Pecten sp., and other mollusks; about 30 to 40 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to well rounded; moderately to well cemented; moderately porous to porous, moldic and interparticle.	. 4	160 - 164

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; sandy, packed biosparite, white (N 9) to very light gray (N 8); mollusks including Ostrea sp.; about 20 percent quartz; about 10 percent heavy minerals and phosphorite, fine to very fine grained, subangular to well rounded; porous, moldic and interparticle.	3	164 - 167
Limestone as above; light-gray (N 7); about 35 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals; well cemented; moderately porous.	3	167 - 170
Sandstone, light-olive-gray (5 Y 6/1) to medium-gray (N 5); quartz-ose, medium to very fine grained, angular to rounded; about 20 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to well rounded; about 30 percent shell fragments; about 10 to 30 percent sparite matrix; is a limestone in places; sandy, packed biosparite; loosely to well cemented; porous, moldic and interparticle.	4	170 - 174
Sandstone, light-olive-gray (5 Y 6/1); quartzose, fine to very fine grained, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 to 50 percent poorly washed sparite matrix in places; about 30 percent shell fragments, Ostrea sp., Pecten sp., and bryozoans; moderately to well cemented; porous, interparticle, moldic, and vugs.	3	174 - 177
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals, fine to very fine grained, angular to subrounded; about 35 to 40 percent shell fragments, mollusks.	3	177 - 180
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, subangular to well rounded; about 30 percent shell fragments, Pecten sp. and Balanus sp.; loosely cemented in places.	4	180 - 184
Silt, grayish-olive (10 Y 4/2); sandy; abundant benthic and plank- tonic foraminifers; interbedded with about 40 percent sand as above.	3	184 - 187
Shells and shell fragments, mollusks; about 30 to 40 percent sand, quartzose, fine grained to silt, well sorted (very fine), angular; about 10 percent heavy minerals, very fine grained, angular to rounded; about 3 to 5 percent micrite, not cemented.	3	187 - 190

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 180 to 184 feet.	2	190 - 192
Siltstone, grayish-olive (10 Y 4/2); clayey and sandy; abundant ben- thic and planktonic foraminifers; loosely to moderately cemented.	2	192 - 194
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to fine grained, angular to subrounded; about 10 percent heavy minerals, fine grained, angular to rounded; about 10 percent shell fragments; about 5 percent mica; interbedded with about 20 percent siltstone as above.	3	´ 194 – 197
Siltstone, moderate-olive-brown (5 Y 4/4) and light-olive-gray (5 Y 5/2); sandy and clayey; abundant foraminifers; about 5 percent shell fragments; loosely to moderately cemented.	13	197 - 210
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, poorly sorted, subrounded to well rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, poorly sorted, subrounded to rounded; about 5 to 10 percent shell fragments, mollusks and sponge spicules; interbedded with about 20 to 30 percent siltstone as above to 10 percent toward base.	10	210 - 220
Sand, light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, moderately (fine) to poorly sorted, angular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (coarse), subangular to well rounded; about 10 percent shell fragments, Pecten sp.; interbedded with about 20 to 30 percent siltstone, sandy; quartzose, coarse grained to very fine grained, moderately sorted (very fine), angular to rounded; about 20 percent micritic matrix.	5	220 - 225
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, very coarse to fine grained, poorly sorted, subrounded to rounded; about 5 to 10 percent shell fragments, large <u>Pecten</u> sp.; bone chips.	5	225 - 230
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, well sorted (fine), angular to subrounded; about 15 percent heavy minerals, coarse to very fine grained, well sorted (fine), angular to subrounded; about 5 percent mica; about 1 to 5 percent shell fragments; about 3 to 5 percent micrite, not cemented.	10	230 - 240

Lithologic Log of Well G-3312

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); fossiliferous oomicrite to fossiliferous poorly washed oosparite, mollusks; coated with ferrous-bearing micrite, not cemented; about 5 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; well cemented; porous, vugs.	2	4 - 6
Limestone, grayish-orange (10 YR 7/4) to dark-yellowish-orange (10 YR 6/6); sandy, oolite-bearing poorly washed sparite; about 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, very fine grained, angular to rounded; well cemented; very porous, vugs.	2	6 - 8
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), moderate-yellowish-brown (10 YR 5/4), and dusky-yellow (5 Y 6/4); sandy sparite to sandy, fossiliferous poorly washed sparite toward base; about 40 to 45 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, very fine grained, subrounded to well rounded; well cemented; very porous, vugs and cavernous at 10 to 12 feet.	4	8 - 12
Limestone as above; is a sandstone in places; mollusks and burrows; cavernous at 12 to 14 and 15 to 16 feet; solution holes are filled with cavity-filling detritus.	4	12 - 16
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse to sandy, packed oosparite, mollusks and Archais sp.; about 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, very fine grained, angular to rounded; is a sandy sparite in places; well cemented; moderately porous to very porous, vugs; some cavity-filling detritus.	4	16 - 20
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite, mollusks; about 25 percent quartz, fine grained, angular; about 3 to 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to subrounded; well cemented; porous, vugs; about 10 percent detritus as above.	2	20 - 22

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sandy, intraclastic sparse poorly washed biosparite, mollusks; about 35 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; clasts consist of sparse biosparite and siliceous sparite, Archais sp.; very well cemented; very slightly porous.	4	22 - 26
Limestone as above; ferrous stains; about 30 to 40 percent quartz at 26.5 to 28 feet; well to very well cemented at 27.5 to 28 feet; slightly to virtually nonporous at 26.5 to 28 feet.	2	26 - 28
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); about 45 percent quartz; about 5 percent heavy minerals and ferrous minerals, very fine grained, angular to well rounded; is a sandstone in places; moderately to well cemented at 29 to 30 feet; moderately porous, small vugs.	2	28 - 30
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); sandy, sparse to sandy, packed biosparite, mollusks including Chione sp.; about 35 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, subangular to subrounded; moderately to well cemented; moderately porous to porous, moldic and small vugs.	2	30 - 32
Limestone, very pale orange (10 YR 8/2) and dark-yellowish-orange (10 YR 6/6); sandy, packed poorly washed intrasparite, Chione sp., gastropods, and other mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; about 3 to 5 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to subrounded; well cemented; moderately porous to porous, moldic, interparticle, and small vugs.	2	32 - 34
Limestone as above; about 35 to 40 percent quartz; porous, interparticle and vugs.	2	34 - 36
Limestone as above; about 25 percent quartz, medium to fine grained, moderately sorted (fine), angular to subrounded; moderately porous to porous, moldic and small vugs.	2	36 - 38

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite to sandy, sparse poorly washed biosparite, mollusks; about 40 to 45 percent quartz, coarse to very fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals, phosphorite, and ferrous minerals, very fine grained, subrounded to well rounded; moderately to well cemented at 39.5 to 40 feet; slightly to moderately porous, moldic and small vugs.	2	38 - 40
Limestone, very pale orange (10 YR 8/2); sandy, intraclast-bearing sparse biosparite, marine and some freshwater mollusks; about 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded; well cemented; moderately porous, vugs, moldic, and framework.	2	40 - 42
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite to sandy, sparse biomicrite, marine mollusks and Helisoma sp.; about 35 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, coarse and fine grained, well sorted (fine), subangular to well rounded; moderately to well cemented; moderately porous, moldic and small vugs.	4	42 - 46
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite to sandy, packed and sandy, sparse poorly washed biosparite, Chione sp. and other mollusks; about 35 to 45 percent quartz, medium to very fine grained, well sorted (very fine), angular to subangular; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), subangular to subrounded; interfingering with freshwater limestone at 46 to 48 feet; sandy, packed biosparite, Helisoma sp.; about 25 to 30 percent quartz, medium to fine grained, moderately sorted (fine), angular to subangular; very well cemented; moderately to slightly porous toward base, moldic and small vugs; interbedded with about 10 percent sand at 46.5 to 50 feet, quartzose, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 3 percent heavy minerals and ferrous minerals, fine to very fine grained, angular to subrounded.		46 - 50
Limestone, very pale orange (10 YR 8/2) and light-olive-gray (5 Y 6/1); sandy, sparse poorly washed biosparite, Helisoma sp.; about 10 to 25 percent quartz, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 5 percent ferrous minerals, very fine grained, angular to subangular; well cemented; slightly to moderately porous, moldic.	2	50 - 52

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, packed to sandy, sparse poorly washed biosparite, Archais sp., corals, and mollusks; about 30 to 45 percent quartz, coarse to very fine grained, well sorted (fine), angular to rounded; about 3 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; is a sandstone in places; well cemented; porous to moderately porous toward base, moldic, interparticle, and vugs.	6	52 - 58
Sandstone, very pale orange (10 YR 8/2); quartzose, medium to very fine grained, well sorted (very fine), subrounded to rounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; about 30 to 35 percent shell fragments and casts and molds, mollusks; moderately to well cemented; porous, moldic and vugs; interbedded with about 20 percent sand, same properties as the sandstone.	2	58 - 60
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, mollusks; about 40 to 45 percent quartz, medium to very fine grained, well sorted (very fine), subangular to subrounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; is a sandstone in places; interfingering with a freshwater limestone; sandy, sparse biomicrite, Helisoma sp.; about 40 percent quartz, medium to very fine grained, well sorted (very fine), subangular to subrounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; well cemented; moderately porous, moldic; interbedded with about 10 percent sand as above.	2	60 - 62
Sandstone as in 58 to 60 feet; about 20 percent sparite; is a lime- stone in places; well cemented; very porous, moldic.	2	62 - 64
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks; about 35 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, very fine grained, subrounded to rounded; moderately to well cemented at 65 to 66 feet; slightly to moderately porous, moldic; interbedded with about 30 percent sand as in 58 to 60 feet.	2	64 - 66

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite to sandy, sparse poorly washed biosparite, <u>Chione</u> sp. and other mollusks; about 20 to 50 percent quartz, medium to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular; is a sandstone in places; well cemented; porous, moldic.	4	66 - 70
Limestone as above; white (N 9) to very pale orange (10 YR 8/2); about 25 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 5 percent heavy minerals and ferrous minerals; very well cemented; slightly porous, moldic.	4	70 - 74
Limestone as above; slightly to moderately porous toward base, moldic and vugs.	3	74 - 77
Limestone as above; about 25 to 30 percent quartz; about 10 percent heavy minerals and ferrous minerals; porous, moldic and vugs.	3	77 - 80
Limestone, white (N 9) to very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks; about 30 percent quartz, coarse to very fine grained, moderately to well sorted (very fine), angular to rounded; about 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; moderately porous, moldic.	4	80 - 84
Limestone, yellowish-gray (5 Y 7/2); sandy, packed poorly washed biosparite, Pecten sp., Ostrea sp., and Balanus sp.; bone chips; about 20 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, subangular to subrounded; well cemented; interparticle, moldic and vugs.	3	84 - 87
Sandstone, very pale orange (10 YR 8/2); quartzose, coarse to fine grained, well sorted (fine), subangular to rounded; about 10 to 15 percent heavy minerals and phosphorite, fine grained, subangular to well rounded; about 30 percent shell fragments and casts and molds; about 15 to 20 percent sparite matrix; is a limestone in places; moderately to well cemented; very porous, moldic and vugs.	3	87 - 90

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 7/2) and pale-yellowish-orange (10 YR 8/2); quartzose, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; about 25 percent shell fragments, mollusks and sponge spicules; about 5 to 10 percent sparite matrix; well cemented; porous, vugs; interbedded with about 30 percent sand, same properties as in sandstone; about 20 to 25 percent shell fragments.	10	90 - 100
Sandstone, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately to well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subrounded to well rounded; about 30 to 35 percent shell fragments; about 10 to 20 percent sparite; is a limestone in places; well cemented; porous, vugs and interparticle; interbedded with about 30 to 40 percent sand, same properties as in sandstone; about 30 percent shell fragments.	4	100 - 104
Limestone, grayish-orange (10 YR 7/4) to dark-yellowish-orange (10 YR 6/6) and yellowish-gray (5 Y 7/2); sandy, packed biosparite, mollusks; bone chips; about 30 to 35 percent quartz, very coarse to very fine grained, poorly sorted, subangular to well rounded; about 15 to 20 percent heavy minerals, phosphorite, and limonite, medium to very fine grained, well sorted (very fine), angular to well rounded; moderately to well cemented; porous, vugs and interparticle.	3	104 - 107
Sand, yellowish-gray (5 Y 8/1) to very light gray (N 8); quartzose, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to well rounded; about 30 to 35 percent shell fragments, mollusks and scaphopods; cemented in places into a sandstone; about 20 percent poorly washed sparite matrix; well cemented; root casts.	3	107 - 110
Sand as above; quartzose, coarse to fine grained, well sorted (fine), angular to rounded; loosely cemented in places into a sandstone; about 20 percent micritic matrix.	7	110 - 117
Shells and shell fragments, mollusks; about 40 percent quartz, fine grained, angular; about 10 percent heavy minerals, very fine grained, subangular to subrounded; loosely cemented in places to a very sandy, packed biosparite.	3	117 - 120

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 110 to 117 feet; loosely to moderately cemented in places into a sandstone.	4	120 - 124
Sand as above; light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, moderately sorted (fine), angular to rounded; interbedded with shelly, sandy, calcareous siltstone.	10	124 - 134
Sand as above; about 25 percent shells and shell fragments.	6	134 - 140
Sand as above; interbedded with about 40 to 50 percent siltstone as above.	5	140 - 145
Siltstone as above; loosely to moderately cemented; virtually nonporous.	3	145 - 148
Sand as in 124 to 134 feet; light-olive-gray (5 Y 5/2); about 20 percent shell fragments, mollusks; wood chips; about 3 to 10 percent micrite, not cemented; loosely cemented in places into a silty, shelly sandstone.	2	148 - 150
Siltstone as in 145 to 148 feet; about 10 to 15 percent shell frag- ments.	4	150 - 154
Sandstone, light-olive-gray (5 Y 5/2); medium grained to silt, well sorted (very fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, very fine grained, subrounded to well rounded; about 10 percent shell fragments; about 10 percent micrite, not cemented; moderately to well cemented; slightly to moderately porous, moldic.	6	154 - 160
Sandstone as above; quartzose, medium grained to silt, well to moderately sorted at 164 to 174 feet; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 10 percent poorly washed sparite; loosely to moderately cemented; interbedded with about 20 percent sand to 5 to 10 percent toward base, quartzose, medium to fine grained, well sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to well rounded; about 5 percent shell fragments.	10	160 - 170

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above, light-olive-gray (5 Y 5/2) and moderate-olive-brown (5 Y 4/4); about 15 percent heavy minerals; about 5 percent shell fragments; interbedded with about 10 percent sandstone, yellowish-gray (5 Y 8/1); quartzose, fine to very fine grained; about 10 percent heavy minerals, very fine grained, angular to subangular; about 40 percent sparite matrix; well cemented.	4	170 - 174
Silt, light-olive-gray (5 Y 6/1); very sandy; quartz, fine to very fine grained, well sorted (very fine), angular; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, angular; about 1 to 3 percent shell fragments; about 3 to 5 percent micrite, not cemented to cemented in places; interbedded with about 20 percent calcareous sandstone as above; grades to a limestone in places.	3	174 - 177
Silt as above; interbedded with about 40 to 50 percent sandstone as above.	3	177 - 180
Silt as above; about 3 to 5 percent muscovite; decrease in sand; interbedded with about 30 to 40 percent sandstone as above.	5	180 - 185
Silt as in 174 to 177 feet.	5	185 - 190
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt (very silty), moderately sorted (very fine); about 10 percent heavy minerals, very fine grained, subangular to subrounded; about 3 to 5 percent muscovite; about 3 to 5 percent micrite, not cemented.	10	190 - 200

Lithologic Log of Well G-3313

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), pale-yellowish-orange (10 YR 8/6), and dark-yellowish-orange (10 YR 6/6); fossiliferous oosparite; well cemented; porous, vugs.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); fossiliferous poorly washed sparite; well cemented; moderately porous, vugs.	2	4 - 6
Limestone, very pale orange (10 YR 8/2); sandy, fossiliferous oomicrite; about 5 to 10 percent quartz, coarse to fine grained, well sorted (fine), subangular to subrounded; well cemented; very porous, vugs and channels; cavity over 1.5 feet at 10 to 12 feet.	6	6 - 12
Limestone as above; grades to a fossiliferous poorly washed oosparite in places; about 10 percent ferrous specks at 12 to 16 feet.	6	12 - 18
Limestone, very pale orange (10 YR 8/2); sparse onlite-bearing poorly washed biosparite, mollusks and bryozoans; about 5 percent quartz, coarse to fine grained, well sorted (fine), subangular to subrounded; about 3 percent heavy minerals and ferrous mineral specks, fine grained, subrounded; well cemented; very porous, vugs and channels.	2	18 - 20
Limestone, very pale orange (10 YR 8/2) and grayish-orange (10 YR 7/4); sandy, onlite-bearing sparse intrasparite, mollusks and burrows; about 5 to 10 percent quartz, coarse to fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals and ferrous minerals, fine grained, subrounded; well cemented; very porous, vugs.	4	20 - 24
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) to dark-yellowish-orange (10 YR 6/6); sandy, oolite-bearing sparite biosparite, mollusks; ferrous stained; about 25 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to rounded; about 5 percent heavy minerals, fine grained, rounded; well cemented; porous, vugs and moldic.	2	24 - 26
Limestone as above; grayish-orange (10 YR 7/4) to moderate-yellowish-brown (10 YR 5/4); about 40 to 45 percent quartz; well to very well cemented; porous, vugs.	4	26 - 30
Sandstone, yellowish-gray (5 Y 7/2) and grayish-orange (10 YR 7/4); quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to well rounded; well cemented; porous, vugs and interparticle.	2	30 - 32

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4) and grayish-orange (10 YR 7/4); sandy, sparse poorly washed biosparite, mollusks; about 40 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals, coarse to fine grained, moderately sorted (fine), subrounded to well rounded; well cemented; porous, vugs.	4	32 - 36
Sandstone, yellowish-gray (5 Y 7/2), light-brown (5 YR 6/4), and moderate-orange-pink (5 YR 8/4); quartzose, coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to well rounded; well cemented; moderately porous to porous, moldic and vugs.	2	36 - 38
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and light-brown (5 YR 5/6); sandy, sparse biosparite, mollusks; about 25 to 30 percent quartz, very coarse to fine grained, poorly sorted, subangular to rounded; well cemented; moderately porous to porous, moldic and vugs.	2	38 - 40
Limestone as above; in contact with a sandy, packed biosparite at 41.5 to 42 feet, mollusks and abundant bryozoans; about 25 percent quartz, coarse to fine grained, well sorted (medium), subrounded to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), subangular to well rounded; well cemented; porous, vugs and moldic; in contact with, at 42 feet, a sandy, sparse poorly washed biosparite, mollusks and Archais sp.; about 25 to 30 percent quartz, coarse to fine grained, subangular to rounded; about 5 percent heavy minerals, fine grained, subrounded to well rounded; well cemented; moderately porous, moldic and vugs.	4	40 - 44
Limestone as above; very pale orange (10 YR 8/2) to pale-yellowish- orange (10 YR 8/6); corals, echinoid spines, and mollusks; about 10 percent quartz; about 5 to 10 percent heavy minerals and phos- phorite; well cemented; porous, moldic, framework, and vugs.	3.5	44 - 47.5
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6); sandy, packed to sandy, sparse poorly washed biosparite, corals, mollusks, and bryozoans; about 45 percent quartz, coarse to fine grained, moderately to well sorted (fine), subangular to subrounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, moderately to well sorted (fine), angular to subrounded; grades to a sandstone in places; moderately to well cemented.	2.5	47.5 - 50

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1 and 5 Y 7/2) to grayish-yellow (5 Y 8/4); quartzose, coarse to fine grained, well sorted (fine), subangular to rounded; about 15 to 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 to 20 percent shells and shell fragments, mollusks and Archais sp.; about 10 to 30 percent sparite matrix; very loosely to well cemented; moderately porous to porous, moldic and vugs.	10	50 - 60
Sandstone as above; yellowish-gray (5 Y 8/1) to very light gray (N 8); about 20 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to well rounded; about 10 to 15 percent shell fragments, Balanus sp. and mollusks; moderately to well cemented; very porous, vugs; about 30 percent detritus sand as cavity-filling detritus; grades to a sandy, sparse poorly washed biosparite at 61 to 61.5 feet; about 20 percent quartz; about 15 to 20 percent heavy minerals, phosphorite, and ferrous minerals; well cemented; moderately porous, vugs.		60 - 64
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1) and pinkish-gray (5 YR 8/1); sandy, sparse poorly washed biosparite, mollusks and corals; about 30 to 35 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 15 to 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), subangular to well rounded; moderately to well cemented; porous, vugs.	6	64 - 70
Limestone as above; about 20 to 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded.	10	70 - 80
Limestone as above; about 10 percent heavy minerals, phosphorite, and ferrous minerals; porous at 84 to 87 feet, vugs and moldic.	7	80 - 87
Limestone as above; about 35 percent quartz at 87.5 to 90 feet; about 5 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to rounded; well cemented; moderately porous to porous, moldic and vugs.	3	87 - 90
Limestone as above; about 20 to 25 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to subrounded.	4	90 - 94

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; sandy, sparse to sandy, packed poorly washed biosparite; about 20 to 25 percent quartz, coarse to fine grained, poorly sorted, subangular to subrounded; about 5 to 15 percent heavy minerals and ferrous minerals at 97 to 100 feet, medium to very fine grained, well sorted (very fine), subrounded to well rounded.	6	94 - 100
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse poorly washed biosparite, mollusks; about 35 percent quartz, coarse to fine grained, moderately sorted (very fine), subangular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), subangular to rounded; loosely to well cemented; moderately porous to porous, vugs and moldic.	4	100 - 104
Limestone as above; about 15 percent heavy minerals and phosphorite; well cemented; porous, vugs.	3	104 - 107
Limestone as above; yellowish-gray (5 Y 8/1) to grayish-yellow (5 Y 8/4); quartz, very coarse to very fine grained, well sorted (fine), subangular to subrounded; about 15 to 20 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; is a sandstone in places.	3	107 - 110
Sandstone, yellowish-gray (5 Y 7/2), grayish-orange (10 YR 7/4), and grayish-yellow (5 Y 8/4); quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; about 10 percent sparite matrix; about 30 percent shell fragments; loosely to well cemented; moderately porous to porous, vugs.	4	110 - 114
Limestone, yellowish-gray (5 Y 7/2), grayish-yellow (5 Y 8/4), and dusky-yellow (5 Y 6/4); sandy, sparse to sandy, packed biomicrite, serpulids, echinoids, and mollusks; about 30 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; loosely to moderately cemented, friable.	3	114 - 117
Limestone as above; light-olive-gray (5 Y 6/1); color is result of mineralization replacement in the shells and shell fragments; about 10 to 15 percent heavy minerals and phosphorite.	3	117 - 120

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; grades to a sandstone toward base; about 15 to 20 percent shell fragments, mollusks; about 10 to 30 percent micritic matrix; very loosely to moderately cemented; slightly to moderately porous, interparticle and vugs.	4	120 - 124
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to rounded; loosely cemented in places.	3	124 - 127
Sand as above; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subangular to subrounded.	7	127 - 134
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, moderately (medium) to poorly sorted, angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; loosely cemented.	6	134 - 140
Sandstone, yellowish-gray (5 Y 5/2); quartzose, medium grained to silt, moderately sorted (fine), angular to subrounded; about 15 percent heavy minerals, medium to very fine grained, moderately sorted (very fine), subangular to subrounded; about 25 percent shell fragments; about 3 percent micritic matrix; very loosely to loosely cemented to not cemented in places.	4	140 - 144
Sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, poorly sorted, angular to subrounded; about 25 percent shell fragments; about 5 to 10 percent micritic matrix; silty and calcareous; very loosely to loosely cemented to not cemented.	6	144 - 150
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, well sorted (very fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to rounded; about 25 percent shell fragments, mollusks; siltier at 154.2 to 155 feet.	5	150 - 155
Silt, light-olive-gray (5 Y 5/2); about 20 to 30 percent quartz, very fine grained, angular; about 10 percent heavy minerals, very fine grained, subangular to subrounded; about 5 percent muscovite; about 15 to 20 percent shell fragments, mollusks, abundant foraminifers at 160 to 165 feet, and sponge spicules; about 5 to 15 percent micrite, not cemented.	10	155 - 165

Lat 25°38'31", long 80°18'02" Sec. 24, T. 55 S., R. 40 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Silt as above; about 20 percent heavy minerals and phosphorite; cemented into a siltstone in places at 166 to 170 feet.	10	165 - 175
Silt as above; about 10 percent muscovite; about 3 to 5 percent shell fragments.	5 .	175 - 180
Silt as above; about 20 percent quartz; about 5 to 10 percent shell fragments.	5	180 - 185
Silt as in 175 to 180 feet.	10	185 - 195
Silt as above; about 20 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded.	10	195 - 205
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, moderately sorted (medium), angular to subangular; about 10 to 15 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to subrounded; about 1 to 3 percent micrite, not cemented.	. 5	205 - 210
Sand, yellowish-gray (5 Y 8/1); quartzose, medium grained, subangular to rounded; about 10 percent heavy minerals, medium to fine grained, angular to rounded; interbedded with about 20 percent sandstone, light-olive-gray (5 Y 6/1); quartzose, medium to fine grained, well sorted, subangular to subrounded; about 10 to 15 percent heavy minerals, medium to fine grained, angular to rounded; about 1 percent shell fragments; about 30 percent silty matrix; moderately to well cemented.	5	210 - 215
Siltstone, light-olive-gray (5 Y 6/1); about 30 percent sand; clayey; is a silty clay in places; well cemented; interbedded with sand as above at 215 to 216 feet and at 219.5 to 220 feet.	5	215 - 220
Siltstone as above; light-olive-gray (5 Y 6/1); loosely to moderately cemented; interbedded with about 20 to 30 percent sand as above.	5	220 - 225
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, moderately sorted (medium), angular to subrounded; about 20 percent heavy minerals and phosphorite, medium to fine grained, well sorted (medium), subangular to rounded; about 5 percent muscovite.	5	225 - 230

Lithologic Log of Well G-3314

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to moderate-reddish-brown (10 R 4/6); poorly washed cosparite; about 3 to 5 percent quartz, medium grained, angular to subangular; ferrous stained; well cemented; moderately porous to porous, vugs; in contact with a subaerial crust.	2	0 - 2
Limestone, very pale orange (10 YR 8/2); sandy, fossiliferous poorly washed oosparite, bryozoans and mollusks; about 3 to 5 percent quartz, medium grained, angular to subangular; about 3 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), rounded; well cemented; porous to very porous, vugs and channels at 7 to 8 feet.	10	2 - 12
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and moderate-reddish-brown (10 R 4/6); onlite-bearing sparse biosparite, mollusks and benthic foraminifers, Archais sp. and Nonion sp.; about 10 percent ferrous mineral specks, weathered; well cemented; porous, vugs.	1	12 - 13
Limestone, very pale orange (10 YR 8/2); oolite-bearing sparse poorly washed intrasparite, Archais sp.; well cemented; porous, intraparticle, vugs, and interparticle.	1	13 - 14
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and dark-yellowish-orange (10 YR 6/6); sandy, sparse poorly washed intrasparite, mollusks and bryozoans; about 10 percent quartz, medium to very fine grained, moderately sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, fine grained, angular to subrounded; well cemented; porous, vugs.	3	14 - 17
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and light-olive-gray (5 Y 5/2); sandy, sparse poorly washed intrasparite, bryozoans, gastropods and other mollusks; about 20 to 25 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine grained, subangular; well cemented; porous, vugs.	1	17 - 18
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, poorly washed sparse biosparite, mollusks; about 25 percent quartz, coarse to very fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, fine grained, subrounded to rounded; grades to a fossiliferous sparite in places; well cemented; moderately porous to porous, vugs.	1	18 - 19

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); packed to sandy, packed poorly washed biosparite, benthic foraminifers, Archais sp.; about 5 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well cemented; porous, moldic and vugs.	3	19 - 22
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 5/2); sandy, sparse biomicrite, mollusks including Chione sp. and Archais sp.; neomorphic and cavity-filling calcite; about 15 to 25 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well cemented; moderately porous to porous, moldic and vugs.	3	22 - 25
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, packed poorly washed biosparite, mollusks and Archais sp.; neomorphic and cavity-filling calcite; about 10 percent quartz, medium to very fine grained, well sorted (fine), angular to subangular; well cemented; porous, moldic and vuss.	1	25 - 26
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sparse biomicrite to sparse poorly washed biosparite, Chione sp. and other mollusks; about 5 percent quartz, fine grained, angular to subangular; about 3 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; well cemented; porous, moldic and vugs.	1	26 - 27
Limestone as above; serpulids, <u>Chione</u> sp., and gastropods; about 10 to 20 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 3 to 5 percent heavy minerals, very fine grained, angular to subangular.	3	27 - 30
Limestone, light-olive-gray (5 Y 5/2); sparse poorly washed bio- sparite, <u>Helisoma</u> sp.; about 5 to 10 percent heavy minerals, very fine grained, angular to subrounded; well cemented; slightly to moderately porous, moldic and vugs.	2	30 - 32
Limestone as above; about 15 percent quartz, fine to very fine grained, angular to subangular.	0.5	32 - 32.5
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 5/2); sandy, sparse intramicrite; brecciated texture; neomorphic calcite in matrix; well cemented; very slightly to slightly porous, moldic and intraparticle.	0.5	32.5 - 33

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1); sandy, intraclastic sparse biomicrite, Archais sp. and mollusks; neomorphic calcite in tests; about 25 percent quartz, coarse to fine grained, well sorted (fine), angular to subangular; about 1 to 3 percent heavy minerals, fine grained, subrounded; well cemented; very slightly to slightly porous, very small vugs.	1	33 - 34
Limestone, white (N 9); sandy, sparse biomicrite to sandy, sparse poorly washed biosparite, mollusks and corals; about 25 to 35 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 1 to 3 percent heavy minerals, fine grained, subrounded; well cemented; slightly to moderately porous, moldic and vugs.	2	34 - 36
Limestone as above; porous, moldic and vugs.	1	36 - 37
Limestone white (N 9); sandy, oolite-bearing sparse biomicrite, corals, Archais sp., mollusks, and bryozoans; ferrous stained; about 20 to 25 percent quartz, medium to fine grained, well sorted (fine); well cemented; moderately porous to porous, moldic and vugs; grades to a limestone, light-olive gray (5 Y 5/2); sandy, sparse poorly washed biosparite, mollusks; about 30 to 35 percent quartz; well cemented; moderately porous to porous, moldic and vugs.	1	37 - 38
Limestone, light-olive-gray (5 Y 5/2) to yellowish-gray (5 Y 8/1); sandy, sparse intramicrite, <u>Helisoma</u> sp.; neomorphic and cavity-filling calcite; about 15 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic and vugs.	1	38 - 39
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, Helisoma sp.; neomorphic calcite cement in matrix; about 10 to 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; well cemented; moderately porous, moldic.	1	39 - 40
Limestone, very pale orange (10 YR 8/2); intraclast-bearing sparse poorly washed biosparite, <u>Helisoma</u> sp. and other freshwater gastropods; well cemented; slightly to moderately porous in places, moldic.	1	40 - 41
Cavity.	0.8	41 - 41.8

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, mollusks; about 30 to 55 percent quartz in places, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; is a sandstone in places; well cemented; porous, moldic and vugs.	0.2	41.8 - 42
Cavity.	1	42 - 43
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, mollusks; about 20 to 25 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 1 to 3 percent heavy minerals, very fine grained, rounded; well cemented; porous to very porous, vugs; in contact with limestone, light-olive-gray (5 Y 6/1) to yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, Helisoma sp. and other freshwater gastropods; about 20 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; well cemented; slightly to moderately porous, moldic and vugs.	2	43 - 45
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite; about 25 percent quartz, coarse to fine grained, moderately sorted (medium), angular to subrounded; well cemented; slightly porous, small vugs.	0.5	45 - 45.5
Cavity; about 5 to 10 percent limestone; sandy, sparse biomicrite; about 30 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), angular to subrounded; well cemented; porous, vugs and moldic.	1	45.5 - 46.5
Limestone, yellowish-gray (5 Y 8/1); sandy, fossiliferous dismicrite; about 10 to 20 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; well cemented; very slightly to slightly porous.	0.5	46.5 - 47
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite to sandy, sparse biosparite, mollusks; about 20 to 45 percent quartz, coarse to fine grained, moderately to well sorted (fine), angular to rounded; well cemented; slightly and moderately porous to porous in places, moldic and vugs; interbedded with about 30 percent quartz sand as in limestone.	1	47 - 48
Limestone as above; about 3 to 5 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to well rounded; slightly porous, moldic and vugs.	1	48 - 49

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; moderately porous to porous, moldic and vugs.	1	49 - 50
Limestone as above; slightly porous.	1	50 - 51
Limestone as above; about 45 to 50 percent quartz; well cemented; slightly to moderately porous; grades to a sandstone in places; abundant cavity-filling calcite; well cemented; porous, moldic and vugs; contains sand as cavity-filling detritus at 52 to 53 feet.	2	51 - 53
Sand, very light gray (N 8); quartzose, coarse to fine grained, moderately sorted (fine), angular to rounded; about 3 to 5 percent heavy minerals, fine grained, subrounded to rounded; is interbedded with limestone as above at 53.5 to 54 feet; grades to a sandstone in places; about 5 percent heavy minerals; well cemented; porous, vugs.	1	53 - 54
Sand as above; very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); about 15 percent organic coating on quartz grains; interbedded with about 10 percent limestone at 56 to 58 feet.	4	54 - 58
Sand as above; pale-yellowish-brown (10 YR 6/2) to dark-yellowish-brown (10 YR 4/2); about 5 to 10 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 30 percent organic material; interbedded with about 5 percent limestone as above.	2	58 - 60
Sand as above; dark-yellowish-brown (10 YR 4/2); about 35 to 40 percent organic compounds.	4	60 - 64
Sand as above; quartz is moderately sorted (fine).	2	64 - 66
Sand as above; pale-yellowish-brown (10 YR 6/2); about 20 percent organic compounds.	2	66 - 68
Sand, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine grained, rounded to well rounded.	2	68 - 70
Sand as above; pinkish-gray (5 YR 8/1) at 74 to 77 feet; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subangular to well rounded.	8	70 - 78

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1) to medium-gray (N 6); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; about 10 to 15 percent detrital carbonate and shell fragments, Balanus sp. and mollusks; about 20 percent sparite matrix; well cemented.	2	78 - 80
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately (medium) to poorly sorted, angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to medium grained, well sorted (coarse), subrounded to rounded; about 35 percent shells and shell fragments; cemented in places; interbedded with about 5 to 10 percent sandstone as above.	4	80 - 84
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to fine grained, poorly sorted, angular to well rounded; about 20 to 25 percent heavy minerals and phosphorite, pebbles to fine grained, moderately sorted (fine), subangular to well rounded; about 25 to 30 percent shell fragments; interbedded with about 10 percent shelly sandstone.	3	84 - 87
Sand, light-olive-gray (5 Y 6/1); quartzose, pebbles to silt, moderately sorted (fine), angular to well rounded; about 25 percent heavy minerals and phosphorite, granules to silt, moderately to well sorted (fine), subangular to well rounded; about 15 to 20 percent shell fragments.	7	87 – 94
Sand, light-olive-gray (5 Y 5/2); quartzose, medium grained to silt, well sorted (fine), angular to subangular; about 25 to 30 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to well rounded; about 3 to 5 percent muscovite; about 1 percent shell fragments.	6	94 - 100
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular; about 25 to 30 percent heavy minerals and phosphorite, fine grained to silt, well sorted (fine), subangular to rounded.	4	100 - 104
Sand as above; quartz is moderately sorted (very fine); about 20 to 25 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine), angular to subrounded; about 5 percent micrite, not cemented; about 1 percent shell fragments.	3	104 - 107
Sand as above; quartz is well sorted (very fine); about 3 to 5 percent muscovite; about 25 to 30 percent heavy minerals and phosphorite.	3	107 - 110

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 100 to 104 feet; about 20 percent phosphorite and heavy minerals, moderately sorted (very fine); about 3 percent muscovite.	5	110 - 115
Sand as in 104 to 107 feet.	5	115 - 120
Sand as above; about 10 percent heavy minerals and phosphorite; about 20 to 25 percent shells and shell fragments, mollusks; about 10 percent micrite, not cemented.	5	120 - 125
Sand, light-olive-gray (5 Y 6/1); quartzose, fine to very fine grained, well sorted (very fine), angular to subangular; about 10 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine), angular to subrounded; about 30 percent shell fragments, <u>Turritella</u> sp., <u>Chione</u> sp. and other mollusks; about 25 to 30 percent micrite, not cemented.	5	125 - 130
Sand, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular; about 10 percent heavy minerals and phosphorite, very fine grained, angular to subrounded; about 10 to 15 percent shell fragments; about 30 to 35 percent micrite, not cemented.	9	130 - 139
Sand as above; about 35 percent shell fragments, mollusks; about 20 to 25 percent micrite, not cemented.	1.	139 - 140
Sand, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 40 percent shell fragments, mollusks; about 5 percent micrite, not cemented.	4	140 - 144
Sand as in 139 to 140 feet; about 25 to 35 percent shell fragments, mollusks; about 20 to 30 percent micrite, not cemented.	6	144 - 150
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 40 to 45 percent shell fragments; about 5 to 10 percent micrite, not cemented.	4	150 - 154
Sand, yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, moderately sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine grained, subangular to rounded; about 30 to 35 percent shells and shell fragments, Olivella sp. and other mollusks; about 10 to 15 percent micrite, not cemented.	3	154 - 157

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 15 percent heavy minerals and phosphorite, fine grained, subangular to rounded; about 30 to 35 percent shells and shell fragments, mollusks including Olivella sp.	13	157 - 170
Sand as above; <u>Turritella</u> sp., <u>Pecten</u> sp. and other mollusks; about 15 to 20 percent micrite, not cemented.	13	170 - 183
Limestone, yellowish-gray (5 Y 8/1) to light-gray (N 7); sandy, packed biomicrite, <u>Turritella sp., Ostrea sp.</u> , and encrusting bryozoans; about 30 to 35 percent quartz, medium to very fine grained, moderately to well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, fine to very fine grained, subangular to well rounded; moderately to well cemented; porous, interparticle, moldic, and vugs; interbedded with about 30 percent sand as above.	2	183 - 185
Limestone as above; about 20 to 30 percent quartz, medium to very fine grained, moderately sorted (fine), angular to rounded; about 15 to 20 percent phosphorite and heavy minerals, medium to very fine grained, well sorted (fine), subangular to rounded; Balanus sp., Pecten sp. and serpulids.	. 5	185 - 190
Limestone as above; about 30 percent quartz, coarse to very fine grained, poorly to moderately sorted (very fine), angular to rounded; about 20 percent heavy minerals, phosphorite, and ferrous minerals, moderately sorted (very fine), subangular to rounded; porous to very porous.	2	190 - 192
Limestone as above; yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); about 30 to 35 percent quartz, coarse to very fine grained, moderately sorted (medium), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite; grades to a shelly sandstone toward base, light-gray (N 7) to medium-gray (N 6); about 25 percent heavy minerals and phosphorite; about 30 percent sparite matrix; contains molds and casts of small gastropods and other mollusks.	2	192 - 194

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, very light gray (N 8); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 25 to 30 percent heavy minerals and phosphorite, very fine grained, subangular to rounded; about 30 to 35 percent detrital carbonate and shell fragments, echnicid spines and mollusks; cemented into about 10 to 20 percent sandstone in places; about 30 percent casts and molds and shell fragments, small gastropods and Pecten sp.; about 15 percent sparite matrix.	2	194 - 196
Limestone, yellowish-gray (5 Y 8/1) to light-gray (N 7); sandy, packed biomicrite, Pecten sp. and Encope sp.; about 30 to 35 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; grades to a sandstone as above in places; moderately to well cemented; porous, moldic and interparticle; interbedded with about 40 percent sand as above.	2	196 - 198
Sandstone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 30 percent shell fragments and casts and molds; about 10 percent sparite matrix; grades to a sandy, sparse biomicrite in places, Pecten sp.; moderately to well cemented; porous, moldic.	2	198 - 200
Sandstone as above; yellowish-gray (5 Y 8/1) to medium-gray (N 5); about 15 to 20 percent sparite matrix; about 40 to 50 percent casts and molds and shell fragments; grades to a sandy, sparse biomicrite and a sandy, packed biomicrite in places; loosely to well cemented; porous to very porous, moldic and interparticle.	7	200 - 207
Sandstone, ligh-olive-gray (5 Y 6/1) to medium-gray (N 5); quartzose, fine to very fine grained, well sorted (fine); about 25 to 35 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine); about 30 to 35 percent shell fragments and casts and molds, Pecten sp. and other mollusks; about 5 to 10 percent sparite matrix; moderately to well cemented; moderately porous, moldic.	7	207 - 214
Sand, medium-gray (N 5); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 30 to 35 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 10 percent shell fragments; cemented to a sandstone as above in places.	3	214 - 217

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; quartzose, very coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 25 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subrounded to well rounded; cemented in places.	3	217 - 220
Sand as above; about 20 percent phosphorite, granules to very fine grained, moderately sorted (fine); about 25 percent shell fragments, echinoid spines and Peccent spines ; cemented in places.	4	220 - 224
Sand as above; quartzose, granules to very fine grained, poorly sorted, angular to rounded; about 40 percent shells and shell fragments, Pecten sp.; cemented in places.	3	224 - 227
Sandstone, light-olive-gray (5 Y 5/2); quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 25 percent heavy minerals and phosphorite, granules to very fine grained, moderately sorted (fine), subrounded to well rounded; about 30 percent shell fragments, Pecten sp. and Balanus sp.; moderately to well cemented; slightly to moderately porous, moldic; interbedded with about 20 to 30 percent sand as above.	3	227 - 230
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to very fine grained, moderately (fine) to poorly sorted, angular to rounded; about 20 to 25 percent heavy minerals and phosphorite, pebbles to very fine grained, moderately (fine) to poorly sorted, subangular to well rounded; about 10 to 15 percent shell fragments, Pecten sp. and other mollusks.	7	230 - 237
Sand as above; about 20 to 30 percent heavy minerals and phosphorite; about 30 to 35 percent shell fragments, echinoid spines and mollusks including Pecten sp.; about 5 percent muscovite; cemented in places.	8	237 - 245
Sand, light-olive-gray (5 Y 6/1); quartzose, granules to silt, moderately sorted (very fine), angular to rounded; about 25 percent heavy minerals and phosphorite, granules to fine grained, well sorted (fine), subangular to rounded; about 5 percent muscovite; about 10 percent shell fragments, Pecten sp. and Balanus sp.; about 5 to 10 percent micrite, not cemented.	5	245 - 250
Sand as above; quartzose, granules to very fine grained, moderately (fine) to poorly sorted, angular to well rounded; about 20 to 25 percent heavy minerals and phosphorite, granules to very fine grained, moderately (fine) to poorly sorted, subangular to well rounded; about 5 to 10 percent shells and shell fragments.	5	250 - 255
Sand as above; quartzose, coarse grained to silt, well sorted (fine), angular to rounded; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 5 percent muscovite; about 5 to 10 percent micrite, not cemented.	5	255 - 260

Lithologic Log of Well G-3315

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); fossiliferous oosparite; well cemented; very porous, vugs.	8	0 - 8
Limestone as above; about 5 to 10 percent ferrous minerals and organics.	2	8 - 10
Limestone, very pale orange (10 YR 8/2); fossiliferous poorly washed oosparite; about 1 to 3 percent quartz, coarse grained, subrounded; about 5 percent ferrous minerals; well cemented; very porous, vugs.	4	10 - 14
Limestone as in 8 to 10 feet.	12	14 - 26
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse oosparite, mollusks; about 5 to 10 percent quartz, fine grained, angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), angular; well cemented; very porous, moldic and vugs.		26 - 28
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, oolite-bearing sparse biosparite, mollusks; about 25 to 30 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals, medium to very fine grained, well sorted (fine), angular; well cemented; very porous, moldic, vugs, and interparticle.	2	28 - 30
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and light-brown (5 YR 6/4); sandy, sparse biosparite, Archais sp.; about 30 to 35 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, vugs; in contact with subaerial crust toward base; about 5 percent ferrous minerals; very well cemented; slightly porous.	2	30 - 32
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sandy, intraclastic sparse poorly washed biosparite, marine mollusks and freshwater gastropods; about 10 to 20 percent quartz, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 percent ferrous minerals; well cemented; moderately porous to porous, moldic and vugs.	2	32 - 34
Missing.	2	34 - 36

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sparse biosparite, mollusks and Archais sp.; about 3 to 5 percent quartz, coarse to fine grained, well sorted (fine), angular to rounded; well to very well cemented; porous, vugs and moldic.	4	36 - 40
Limestone as above; interfingering with brackish to freshwater limestone at 41.5 to 42 feet, pale-yellowish brown (10 YR 6/2); packed biosparite, mollusks including freshwater gastropods; well cemented; moderately porous to porous, moldic and vugs.	4	40 - 44
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); packed biosparite, mollusks; well cemented; porous, moldic and vugs.	2	44 - 46
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); intraclastic packed biosparite, mollusks; clasts contain freshwater gastropods; well cemented; moderately porous to porous, moldic and vugs.	2	46 - 48
Limestone as above; interbedded with a sandy, sparse biosparite at 48.5 to 49 feet, mollusks; about 30 to 35 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; very well cemented; slightly to moderately porous, moldic and vugs.	2	48 - 50
Limestone as above; very pale orange (10 YR 8/2) to grayish-orange-pink (5 YR 7/2); about 20 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to rounded; well to very well cemented; moderately porous to porous, moldic and vugs.	4	50 - 54
Limestone as above; very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks; neomorphic and cavity-filling calcite are present; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, angular to subrounded; well to very well cemented; moderately porous to porous.	3	54 - 57

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, intraclast-bearing sparse biosparite, mollusks including Turritella sp.; neomorphic and cavity-filling calcite; about 30 to 40 percent quartz, coarse to fine grained, well sorted (fine), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, vugs and moldic.	5	57 - 62
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, packed biosparite, Chione sp. and other mollusks; about 30 percent quartz, fine to very fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous to very porous, interparticle, vugs and moldic.	2	62 - 64
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2) and dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite, mollusks; about 35 percent quartz, coarse to fine grained, moderately sorted (fine), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; very well cemented; moderately porous, moldic.	2	64 - 66
Limestone as above; very pale orange and grayish-orange-pink (5 YR 7/2) to moderate-brown (5 YR 4/4); about 35 percent quartz, coarse to fine grained, poorly sorted, angular to well rounded; about 5 to 10 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, moldic and vugs.	4	66 - 70
Limestone as above; very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); about 35 percent quartz, coarse to fine grained, poorly to moderately sorted (fine), angular to well rounded; very well cemented; moderately porous to porous, moldic; interbedded with sand at 71.5 to 72 feet, quartzose, coarse to medium grained, well sorted (medium), subrounded to well rounded; about 3 percent heavy minerals, coarse to fine grained, moderately sorted (fine), subrounded to rounded.	2	70 - 72

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, very pale orange (10 YR 8/2); quartzose, very coarse to fine grained, well sorted (medium), subrounded to well rounded; about 3 to 5 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; about 20 percent shells and shell fragments, Balanus sp. and mollusks; about 10 to 20 percent sparite matrix; well cemented; porous, vugs; interbedded with about 40 percent sand, quartzose, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; about 3 percent heavy minerals, coarse to fine grained, well sorted (fine), angular to subrounded; about 5 percent shell fragments.	2	72 - 74
Sand as above; loosely to moderately cemented in places.	2	74 - 76
Sandstone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, coarse to fine grained, well sorted (medium), subrounded to well rounded; about 3 to 5 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine), subangular to well rounded; about 30 to 35 percent shell fragments; about 5 to 30 percent sparite matrix; is a limestone in places; well cemented; porous, moldic and vugs; interbedded with sand at 76 to 76.5 feet, quartzose, very coarse to fine grained, well sorted (medium), subangular to well rounded; about 3 to 5 percent heavy minerals and phosphorite, very coarse to very fine grained, poorly sorted, subangular to well rounded; about 10 percent shell fragments.	2	76 - 78
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks; about 20 to 40 percent quartz, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to subrounded; is a sandstone in places; well cemented; porous, vugs; interbedded with about 20 to 30 percent sand as above.	2	78 - 80
Sandstone, yellowish-gray (5 Y 8/1) to dusky-yellow (5 Y 6/4); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to well rounded; about 20 to 30 percent shell fragments, Balanus sp., Pecten sp., and other mollusks; about 10 to 30 percent sparite matrix; is a limestone in places; well cemented; porous to very porous, vugs, interparticle, and moldic.	7	

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 5); quartzose, fine to very fine grained, well sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 30 percent shell fragments, Pecten sp. and other mollusks and Balanus sp.; about 10 percent sparite matrix to 40 percent in places; is a limestone in places; well cemented; moderately porous to porous, interparticle.	7	87 - 94
Sandstone as above; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to well rounded; bone chips.	3	94 - 97
Limestone, light-olive-gray (5 Y 6/1) to medium-gray (N 5) and yellowish-gray (5 Y 8/1); sandy, packed to sandy, sparse biosparite, Balanus sp., Pecten sp., and Ostrea sp.; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; well cemented; moderately porous, interparticle and moldic.	10	97 - 107
Limestone, light-olive-gray (5 Y 6/1); sandy, sparse biomicrite, Balanus sp. and mollusks including Pecten sp. and Ostrea sp.; about 30 percent quartz, coarse to very fine grained, well sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; moderately to well cemented.	3	107 - 110
Limestone as above; about 30 percent quartz, coarse grained to silt, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded.	14	110 - 124
Sandstone, moderate-olive-brown (5 Y 4/4) to grayish-olive-green (5 GY 3/2), coarse grained to silt, moderately (very fine) to poorly sorted, angular to rounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to rounded; about 10 percent micritic matrix; loosely to moderately cemented.	6	124 - 130

	Thick-	Depth, feet
Description	ness	below land
	(feet)	surface
Silt, light-olive-gray (5 Y 5/2); sandy; about 30 to 35 percent quartz, coarse to very fine grained, well sorted (very fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent shell fragments; about 5 percent micrite, not cemented.	10	130 - 140
Silt as above; about 35 to 40 percent quartz; about 5 percent shell fragments; about 3 percent micrite, not cemented.	4	140 - 144
Silt as above; moderate-olive-brown (5 Y 4/4); about 40 percent quartz; about 5 to 10 percent heavy minerals; about 10 to 20 percent micrite, not cemented; about 3 to 5 percent shell fragments.	3	144 - 147
Silt as in 130 to 140 feet; about 3 percent mica.	3	147 - 150
Silt as in 144 to 147 feet; about 5 to 10 percent shell fragments; about 5 to 10 percent micrite, not cemented.	4	150 - 154
Silt as above; light-olive-gray (5 Y 5/2) to moderate-olive-brown (5 Y 4/4); about 3 to 5 percent mica.	3	154 - 157
Silt as above; light-olive-gray (5 Y 5/2) to moderate-olive-brown (5 Y 4/4); about 20 percent quartz, very fine grained, angular; contains foraminifers.	8	157 - 165
Silt as above; about 20 percent quartz, coarse to very fine grained, well sorted (fine), angular to subrounded; about 20 percent micrite, not cemented.	9	165 - 174
Limestone, light-gray (N 7); sandy, packed biosparite, <u>Balanus</u> sp. and mollusks including <u>Turritella</u> sp.; about 25 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent heavy minerals, medium to very fine grained, well sorted (very fine), subangular to rounded; well cemented; porous, moldic.	6	174 - 180
Sandstone, medium-dark-gray (N 4); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (very fine), angular to subrounded; about 25 percent shell fragments, mollusks; loosely to moderately cemented.	4	180 - 184

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, medium-light-gray (N 6) to light-gray (N 7); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, medium to very fine grained, angular to subrounded; about 5 to 10 percent shell fragments.	11	184 - 19 5
Sand as above; interbedded with claystone as below at 199 to 200 feet.	5	195 - 200
Claystone, grayish-olive-green (5 GY 3/2); silty; about 5 to 10 percent micrite; contains planktonic and benthic foraminifers; loosely to moderately cemented.	5	200 - 205
Clay, grayish-olive-green (5 GY 3/2); sandy and silty; abundant foraminifers.	5	205 - 210
Silt, light-olive-gray (5 Y 5/2); sandy and clayey; contains foramin- ifers; about 3 to 5 percent micrite, not cemented; about 5 percent mica.	10	210 - 220

Lithologic Log of Well G-3316

Description	Thick- ness (feet)	Depth, feet below land surface
Fill and soil.	8	0 - 8
Limestone, very pale orange (10 YR 8/2); sparse oosparite, mollusks; well cemented; porous to very porous, vugs; interbedded with about 10 to 20 percent silty, sandy, shelly micrite, not cemented.	2	8 - 10
Missing.	4	10 - 14
Limestone, very pale orange (10 YR 8/2); sparse comicrite; about 5 percent heavy minerals at 14 to 16 feet, medium to fine grained, well sorted (fine), angular to subrounded.	4	14 - 18
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, oolite-bearing poorly washed biosparite, mollusks; well cemented; very porous, moldic and vugs.	· 2	18 - 20
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and dark-yellowish-orange (10 YR 6/6) to light-brown (5 YR 5/6); sandy, sparse oosparite, mollusks and benthic foraminifers, Archais sp.; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 3 to 5 percent heavy minerals, fine to very fine grained, angular to subrounded; well cemented; porous, moldic and vugs.		20 - 22
Limestone as above.	6	22 - 28
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite, Archais sp. and mollusks; ferrous stained; about 20 to 25 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded to well rounded; well cemented; porous to very porous, vugs.	6	28 - 34
Limestone as above; about 30 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; is a sandstone in places; quartzose, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine grained, subrounded to well rounded; about 5 to 10 percent sparite matrix; well cemented; very porous, vugs.	1.5	34 - 35.5
Sand, very pale orange (10 YR 8/2); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 3 to 5 percent heavy minerals, fine grained, subrounded.	0.5	35.5 - 36
Missing.	4	36 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks; about 15 percent quartz, medium to fine grained, well sorted (medium), subangular to rounded; about 3 percent heavy minerals, fine grained, subrounded; well to very well cemented; moderately porous to porous, moldic and vugs.	2	40 - 42
Limestone as above; corals and mollusks; about 30 to 35 percent quartz in places, fine to very fine grained, well sorted (very fine), angular to subangular; about 3 to 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to rounded; porous, vugs, moldic, and framework; interfingering with freshwater limestone at 42.5 to 43.5 feet; sparse biosparite, Helisoma sp.; about 5 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; well to very well cemented; moderately porous, moldic.	2	42 - 44
Limestone as above; corals and bryozoans; not interfingering with freshwater limestone.	2	44 - 46
Limestone as above; about 40 to 55 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, moderately sorted (fine), angular to well rounded; is a sandstone in places; well cemented; porous, vugs and moldic; interbedded with about 20 to 30 percent sand, quartzose, medium to fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals, phosphorite, and ferrous minerals, medium to fine grained, moderately sorted (fine), angular to well rounded.	2	46 - 48
Missing.	2	48 - 50
Sandstone, yellowish-gray (5 Y 8/1) to grayish-orange (10 YR 7/4); quartzose, coarse to fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), subangular to subrounded; about 15 to 20 percent shells, mollusks; about 10 to 15 percent sparite matrix; moderately to well cemented; porous to very porous, moldic, vugs, and interparticle; interbedded with about 20 percent sand as in sandstone; about 5 percent heavy minerals.	4	50 - 54
Sandstone as above; about 15 to 20 percent sparite matrix; interbed- ded with about 10 to 20 percent sand as above.	2	54 - 56
Sandstone as above; about 20 to 25 percent sparite matrix; is a limestone in places; very well cemented; porous, moldic and vugs.	2	56 - 58

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (medium), angular to rounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, subrounded to well rounded; about 5 percent heavy minerals and phosphorite, fine to very fine grained, subrounded to well rounded; about 15 percent shell fragments and detrital carbonate; very cemented in places to about 20 percent sandstone; about 25 to 30 percent shell fragments toward base; about 15 to 20 percent sparite matrix; slightly to moderately porous, vugs.	4	58 - 62
Sand as above; interbedded with about 40 percent limestone, very pale orange (10 YR 6/2); sandy, packed biosparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals, fine grained, subrounded to rounded; well cemented; porous, moldic.	2	62 - 64
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), subangular to rounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to rounded; very well cemented; moderately porous to porous, moldic and vugs; interbedded with about 20 percent sand, quartzose, medium to fine grained, well sorted (fine); about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to rounded; about 10 percent shell fragments.	2	64 - 66
Limestone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4); biolithite, Montastrea sp.; neomorphic calcite in framework; well cemented; porous, framework.	2	66 - 68
Limestone, very pale orange (10 YR 8/2) and moderate-yellowish-brown (10 YR 5/4) to dark-yellowish-brown (10 YR 4/2); sandy, packed biosparite, corals and mollusks; about 20 to 25 percent quartz, medium to fine grained, moderately sorted (medium), subrounded to rounded; about 3 to 5 percent heavy minerals, medium to fine grained, subrounded; well to very well cemented; porous.	6	68 - 74
Limestone as above; sparse biosparite in places, corals.	3	74 - 77
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, <u>Chione</u> sp.; about 25 to 30 percent quartz, medium to very fine grained, moderately sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals, fine grained, subangular to sub- rounded; well cemented; porous to very porous, vugs, interparticle, and moldic.	3	77 - 80

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2); sandy, packed biosparite, mollusks; about 35 percent quartz, medium to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (very fine), subangular to well rounded; well cemented; porous to very porous, vugs and interparticle.	4	80 - 84
Limestone, yellowish-gray (5 Y 8/1), dusky-yellow (5 Y 6/4) to light-olive-brown (5 Y 5/6), and moderate-yellow (5 Y 7/6); sandy, sparse biosparite, Balanus sp., Turritella sp., and other mollusks; about 35 to 40 percent quartz, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 5 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (very fine), angular to rounded; very well cemented; porous, moldic and vugs.	3	84 - 87
Sandstone, yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4) and dark-yellowish-orange (10 YR 6/6); quartzose, medium to fine grained; about 5 to 10 percent heavy minerals, very fine grained, subrounded to well rounded; about 10 percent shell fragments, Ostrea sp. and other mollusks and echinoid spines; about 10 percent sparite matrix; well cemented; porous, vugs.	3	87 - 90
Sandstone as above; about 15 to 20 percent shell fragments, Pecten sp. and other mollusks; about 10 to 20 percent sparite matrix; concretionary in places; interbedded with about 30 percent sand, quartzose, coarse to very fine grained, well sorted (medium), subangular to rounded; about 5 percent heavy minerals, phosphorite, and ferrous minerals, coarse to very fine grained, moderately sorted (very fine), subangular to well rounded; about 10 to 15 percent shell fragments, mollusks.	4	90 - 94
Siltstone, light-olive-gray (5 Y 5/2) to olive-gray (5 Y 3/2); calcareous, clayey, sandy siltstone; about 30 to 40 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to well rounded; about 10 percent shell fragments; about 10 percent clayey sparite marix; well cemented; slightly porous.	3	94 - 97
Siltstone as above; about 15 percent shell fragments; loosely to moderately cemented.	10	97 - 107

Description	Thick- ness (feet)	Depth, feet below land surface
Siltstone, light-olive-gray (5 Y 6/1); calcareous, sandy siltstone; about 30 percent quartz, medium to very fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded; about 10 percent shell fragments, Balanus sp., echinoid spines, and foraminifers; about 30 percent sparite matrix; loosely to well cemented.	3	107 - 110
Siltstone as above; light-olive-gray (5 Y 5/2); clayey; about 30 percent micrite, not cemented; foraminifers; loosely to well cemented; interbedded with about 30 percent sand, quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 percent heavy minerals and ferrous minerals, very fine grained, moderately sorted (very fine), angular to rounded; about 25 to 30 percent shell fragments.	4	110 - 114
Silt, light-olive-gray (5 Y 5/2); calcareous, clayey, sandy silt; about 30 percent quartz, medium to very fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine grained, subrounded; about 10 to 25 percent shell fragments, mollusks; about 10 to 20 percent clayey micrite, not cemented.	6	114 - 120
Missing.	5	120 - 125
Silt, light-olive-gray (5 Y 5/2); calcareous, clayey, sandy silt; sand, very fine grained, angular; about 5 to 10 percent small shell fragments; about 15 percent micrite, not cemented.	5	125 - 130
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (fine), subrounded to well rounded; loosely cemented in places.	5	130 - 135
Shells and shell fragments, mollusks; interbedded with about 30 percent sand, quartzose, very fine grained to silt, well sorted (very fine), angular; about 5 to 10 percent heavy minerals, very fine grained, subrounded; about 15 percent micrite, not cemented; loosely to moderately cemented in places into a coquina.	5	135 - 140
Sand as in 130 to 135 feet; about 20 to 25 percent shells and shell fragments, mollusks.	5	140 - 145

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Description	Thick- ness	Depth, feet below land
	(feet)	surface
Siltstone, light-olive-gray (5 Y 5/2); shelly, calcareous, sandy siltstone; about 30 percent sand, very fine grained, angular; about 15 to 20 percent micrite, not cemented; about 20 percent shell fragments; loosely cemented.	5	145 - 150
Sandstone, light-olive-gray (5 Y 6/1), medium-light-gray, to dark-gray (N 3); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, subrounded to well rounded; about 30 percent shells and shell fragments, mollusks and echinoids; about 15 percent poorly washed sparite matrix; moderately cemented; moderately porous, interparticle.	5	150 - 155
Siltstone, grayish-olive (10 Y 4/2); calcareous, sandy siltstone; about 30 to 40 percent sand, very fine grained, angular; about 10 percent sparite matrix; well cemented; slightly to moderately porous, vugs; interbedded with sand at 155 to 156 feet, quartzose, medium to fine grained, well sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, angular to subrounded; about 5 percent shell fragments.	5	155 - 160
Sand as above; interbedded with about 30 percent sandstone; quartz-ose, fine grained to silt, well sorted (very fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; moderately to well cemented.	5	160 - 165
Missing.	5	165 - 170
Siltstone, olive-gray (5 Y 3/2); sandy siltstone; about 20 percent heavy minerals and phosphorite, fine to very fine grained, angular to rounded; about 5 to 10 percent shell fragments; loosely cemented	5	170 - 175
Missing.	5	175 - 180
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to medium grained, well sorted (medium), subrounded to well rounded; about 10 percent heavy minerals and phosphorite, coarse to medium grained, well sorted (medium), angular to well rounded; about 5 percent shell fragments, phosphatized; interbedded with about 5 to 10 percent sandy, clayey siltstone to about 1 to 3 percent toward base.	30	180 - 210

Lithologic Log of Well G-3317

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and moderate-reddish-brown (10 R 4/6); sparse poorly washed oosparite, mollusks; ferrous stained; highly weathered at 6 to 8.5 feet; well cemented; porous to very porous, vugs.	6	4 - 10
Limestone as above; very pale orange (10 YR 8/2) to moderate-orange-pink (10 R 7/4) in places; Archais sp., mollusks; rhodochrosite specks; well cemented.	2	10 - 12
Limestone, very pale orange (10 YR 8/2) to moderate-orange-pink (10 R 7/4); packed poorly washed oosparite, mollusks and Archais sp.; ferrous stained, rhodochrosite specks; well cemented.	1	12 - 13
Limestone, very pale orange (10 YR 8/2), moderate-orange-pink (10 R 7/4), and moderate-yellowish-brown (10 YR 5/4) to dark-yellowish-brown (10 YR 4/2), mottled; fossiliferous sparite with intraclastic sparse biosparite as cavity-filling detritus; very well cemented; slightly porous.	1	13 - 14
Limestone as above; poorly washed comparite as solution-filling material, pale-yellowish-brown (10 YR 6/2); very well cemented; virtually nonporous to slightly porous.	4.5	14 - 18.5
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse biosparite; neomorphic and cavity-filling cement present; about 5 to 10 percent quartz, medium grained, subrounded to rounded; well cemented; moderately porous to porous, vugs.	3	18.5 - 21.5
Limestone, very light gray (N 8); sandy, sparse biomicrite, gastro- pods and other mollusks; neomorphic calcite in tests; about 35 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; well cemented; very slightly to slightly porous.	0.5	21.5 - 22
Limestone, very pale orange (10 YR 8/2); sandy, fossiliferous to sandy, sparse poorly washed biosparite, mollusks; neomorphic calcite in tests; about 25 to 40 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; well to very well cemented; very slightly to slightly porous and moderately porous at 26 to 28 feet, vugs and moldic.	6	22 - 28

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; grades to a sandstone toward base; quartzose, coarse to fine grained, medium to well sorted (medium), subangular to rounded; about 10 to 15 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 to 30 percent poorly washed sparite matrix; well cemented; very porous, vugs.	1	28 - 29
Sand, white (N 9) to pale-yellowish-brown (10 YR 6/2); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded.	1	29 - 30
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, well sorted (medium), subangular to rounded; about 1 percent heavy minerals, fine grained, subangular; interbedded with about 10 to 20 percent sandstone as in 28 to 29 feet; about 15 percent sparite matrix.	4	30 - 34
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 1 to 3 percent heavy minerals, coarse to very fine grained, angular to subrounded.	3	34 - 37
Sand, dark-yellowish-brown (10 YR 4/2); quartzose, pebbles to fine grained, moderately sorted (medium) to poorly sorted at 42 to 46 feet, subangular to well rounded; about 5 percent heavy minerals, medium to very fine grained, well sorted (fine), subrounded.	9	37 - 46
Sand, dark-yellowish-brown (10 YR 4/2); quartzose, pebbles to fine grained, moderately sorted (fine), angular to well rounded; about 3 to 5 percent heavy minerals, fine grained, subangular to subrounded.	4	46 - 50
Sand as in 42 to 46 feet; quartz is poorly sorted; about 5 to 10 percent heavy minerals, fine to very fine grained, subangular to subrounded; about 3 percent muscovite.	4	50 - 54
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, well sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine grained, subangular to subrounded; about 5 percent muscovite.	3	54 - 57
Sand, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); quartzose, pebbles to fine grained, moderately (fine) to poorly sorted, angular to well rounded; about 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subangular to rounded.	7	57 - 64

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals, very fine grained, subrounded to rounded; about 5 percent muscovite; about 3 percent shell fragments.	6	64 - 70
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartz-ose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 to 20 percent heavy minerals, very fine grained, subangular to subrounded; about 3 to 5 percent muscovite; about 1 to 3 percent shell fragments, mollusks.	4	70 - 74
Sand as above; quartzose, coarse and fine grained to silt; about 10 to 20 percent heavy minerals, fine to very fine grained, well sorted (very fine); about 3 percent muscovite.	6	74 - 80
Sand, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, well sorted (very fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to rounded; about 5 percent muscovite; about 1 to 3 percent shell fragments, mollusks.	5	80 - 85
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartz-ose, coarse grained to silt, moderately sorted (fine), angular to rounded; about 20 to 25 percent shell fragments, mollusks; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subangular to rounded.	2	85 - 87
Limestone, yellowish-gray (5 Y 8/1), very light gray, and medium- light-gray (N 6); sandy, packed biomicrite, benthic foraminifers, Encope sp. and mollusks; about 20 to 25 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; loosely to moderately cemented.	3	87 - 90
Limestone, yellowish-gray (5 Y 7/2); sandy, packed poorly washed biosparite, Encope sp., serpulids, benthic foraminifers, Ostrea sp., Turritella sp., and Balanus sp., coquinoid texture; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subrounded to rounded; loosely to moderately cemented; slightly to moderately porous, moldic and small vugs.	20	90 - 110

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, pinkish-gray (5 YR 8/1) and medium-gray (N 5); sandy, packed poorly washed biosparite, Encope sp. and other mollusks; about 35 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded.	4	110 - 114
Limestone as above; abundant <u>Turritella</u> sp. toward base; about 35 to 40 percent quartz, medium to fine grained, well sorted (fine); grades to a sandstone in places; moderately to well cemented; porous, moldic and interparticle.	6	114 - 120
Sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse and fine grained to very fine grained, well sorted (very fine), subrounded to well rounded; about 30 to 35 percent shells and shell fragments, mollusks including gastropods; about 5 to 10 percent sparite matrix; loosely to moderately cemented.	4	120 - 124
Sand, very light gray (N 8); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 20 percent heavy minerals and phosphorite, fine grained, subrounded; about 25 to 35 percent shells and shell fragments, benthic foraminifers, Turritella sp., Pecten sp., Olivella sp., and other mollusks; majority of shells are phosphatized.	6	124 - 130
Shells and shell fragments, mollusks including <u>Pecten</u> sp., <u>Ostrea</u> sp., and serpulids; some shells are etched and pitted; about 40 percent sand as above.	4	130 - 134
Shells and shell fragments, mollusks; some shells are phosphatized; about 30 percent quartz, coarse to fine grained, angular to rounded; about 1 to 3 percent heavy minerals, fine grained, subrounded to rounded; about 20 to 25 percent micrite, not cemented; about 1 to 3 percent detrital carbonate.	6	134 - 140
Shells and shell fragments, mollusks, claws, and echinoids; about 40 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 percent heavy minerals and phosphorite, fine grained, rounded.	4	140 - 144
Sand as above; about 40 percent shell fragments as above.	3	144 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, abundant serpulids, mollusks including Turritella sp. and Olivella sp., and shark teeth; about 45 percent quartz, coarse to fine grained, poorly sorted, subangular to well rounded; about 5 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded.	3	147 - 150
Shells and shell fragments as above; about 30 to 40 percent quartz, very coarse to fine grained, poorly sorted, subangular to well rounded; about 10 percent phosphorite, granules to medium grained, well sorted (coarse), subrounded to well rounded.	4	150 - 154
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, moderately (fine) to poorly sorted, angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subrounded to well rounded; about 10 percent muscovite; about 35 percent shell fragments, mollusks.	3	154 - 157
Sand, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartz-ose, granules to fine grained, moderately sorted (fine), angular to well rounded; about 25 percent mica; about 15 percent heavy minerals and phosphorite, very coarse to fine grained, poorly sorted, subangular to well rounded; about 20 to 25 percent shell fragments, mollusks including Olivella sp., and serpulids.	3	157 - 160
Sand, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartz-ose, medium to fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, very coarse to fine grained, well sorted (fine), angular to subrounded; about 25 percent mica; about 5 percent shell fragments; interbedded with about 10 to 20 percent silty, calcareous sandstone; quartzose, medium grained to silt, well sorted (very fine); about 5 percent heavy minerals and phosphorite, very coarse to fine grained, well sorted (fine), angular to subrounded.	7	160 - 167
Sand as above; about 15 percent heavy minerals and phosphorite, coarse and fine grained to very fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent micrite, not cemented; interbedded with sandstone as above; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded.	3	167 - 170
Siltstone, light-olive-gray (5 Y 6/1); about 20 to 30 percent sand, fine to very fine grained, well sorted (very fine), angular to subangular; about 10 percent mica; about 20 percent micritic matrix; moderately to well cemented.	2.5	170 - 172.5

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; about 20 to 25 percent mica; about 5 percent shell fragments; interbedded with about 3 to 5 percent siltstone as above toward base.	4.5	172.5 - 177
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse to fine grained, moderately sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, pebbles to very fine grained, poorly sorted, angular to well rounded; about 20 percent mica; about 5 to 10 percent shell fragments, sponge spicules and mollusks.	3	177 - 180
Sand, yellowish-gray (5 Y 7/2); quartzose, medium to fine grained, well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to rounded; about 10 to 15 percent muscovite; about 3 to 5 percent shell fragments; interbedded with siltstone at 181 and 182.5 to 183 feet, light-olive-gray (5 Y 5/2); clayey and very calcareous; highly weathered; well cemented.	4	180 - 184
Sand as above; quartzose, coarse to fine grained, well sorted (medium), angular to rounded; about 10 percent mica; about 15 to 20 percent heavy minerals and phosphorite, granules to fine grained, poorly sorted, subrounded to well rounded; about 5 to 10 percent serpulids, gastropods, and other mollusks; interbedded with sandy siltstone as above at 184.5 and 187 feet.	3	184 - 187
Sand as in 180 to 184 feet; interbedded with about 10 percent sandy, clayey, calcareous siltstone; about 3 to 5 percent shell fragments.	7	187 - 194
Sand as above; quartzose, medium to fine grained, well sorted (fine), angular to rounded; about 10 percent heavy minerals, granules to very fine grained, poorly sorted, subrounded to well rounded; interbedded with about 10 percent siltstone as above.	3	194 - 197
Sand as in 184 to 187 feet; about 15 to 20 percent shell fragments; interbedded with about 20 percent siltstone as above.	3	197 - 200
Sand as above; about 15 to 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), subrounded to well rounded; interbedded with about 5 to 10 percent siltstone as above.	4	200 - 204
Sand as above.	2	204 - 206
Claystone, light-olive-gray (5 Y 5/2), silty, sandy, and calcareous; interbedded with about 40 to 50 percent sand as above.	4	206 - 210

Lithologic Log of Well G-3318

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); oolite-bearing sparse biomicrite, mollusks; neomorphic calcite present in matrix; well cemented; porous, vugs.	2	0 - 2
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); oolite-bearing sparse biomicrite to oolite-bearing sparse poorly washed biosparite, mollusks; ferrous stained; well cemented; porous to very porous toward base, vugs.	6	2 - 8
Limestone as above; very pale orange (10 YR 8/2) and moderate- yellowish-brown (10 YR 5/4), mottled; ferrous-bearing calcrete crust; highly weathered with ferrous stains toward base.	4	8 - 12
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sparse oosparite, Archais sp.; cavity-filling detritus is ferrous stained; very well cemented; porous, vugs.	2	12 - 14
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); oolite-bearing sparse poorly washed intrasparite, Archais sp. and mollusks; ferrous stained; well cemented; porous, vugs.	2	14 - 16
Limestone as above; very pale orange (10 YR 8/2), pale-yellowish-brown (10 YR 6/2), and dark-yellowish-orange (10 YR 6/6), mottled; erosional surface at 16 feet; in contact with an intrasparite grading to a fossiliferous sparite; virtually nonporous.	1	16 - 17
Limestone, very pale orange (10 YR 8/2), grayish-orange-pink (5 YR 7/2), pale-yellowish-orange (10 YR 8/6), and pale-yellowish-brown (10 YR 6/2); sparse intraclastic poorly washed biosparite, corals, <u>Archais</u> sp., and mollusks; ferrous calcrete crust toward base; well cemented; slightly to moderately porous, vugs and burrows.	3	17 - 20
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6); sparse to packed poorly washed biosparite, Archais sp. and mollusks; ferrous stained; neomorphic calcite present; well cemented; moderately porous to porous, vugs and moldic.	2	20 - 22
Limestone, very pale orange (10 YR 8/2); sparse poorly washed bio- sparite, mollusks; about 5 percent heavy minerals, fine to very fine grained, angular to subrounded; well cemented; porous, moldic and vugs.	2	22 - 24
Limestone, very pale orange (10 YR 8/2); intraclastic sparse poorly washed biosparite, benthic foraminifers and mollusks; well cemented; porous, vugs.	2	24 - 26

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); intraclastic sparse biomicrite, mollusks; neomorphic calcite in tests and matrix; well cemented; porous, vugs; in contact with limestone as below at 28 feet.	2	26 - 28
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sandy, sparse biosparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), subangular to rounded; well cemented; slightly to moderately porous, small vugs.	2	28 - 30
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1) and medium-light-gray (N 6), mottled; sandy, intraclastic sparse biosparite, mollusks; about 10 percent quartz, fine grained, angular to subrounded; interfingering with a sparse biosparite, abundant Helisoma sp.; well cemented; moderately porous.	2	30 - 32
Limestone, yellowish-gray (5 Y 8/1) to medium-light-gray (N 6); sandy, sparse biosparite, mollusks; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; interfingering with a freshwater, sandy limestone occurring as cavity-filling detritus; well cemented; slightly to moderately porous, vugs.	2	32 - 34
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1) and grayish-orange (10 YR 7/4); sandy, sparse biosparite, Chione sp. and other mollusks, and corals; about 10 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; interfingering with freshwater limestone, medium-light-gray (N 6); sandy, poorly washed sparite; about 10 to 15 percent quartz, fine grained, angular to subangular; well cemented; porous to very porous, framework, moldic, and vugs.	· 2	34 - 36
Limestone, very pale orange (10 YR 8/2), pale-yellowish-green (10 GY 7/2), and pale-yellowish-brown (10 YR 6/2); sandy, sparse poorly washed biosparite, mollusks; about 20 to 25 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic and small vugs.	2	36 - 38

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-brown (10 YR 4/2); sandy, intraclast-bearing sparse poorly washed biosparite, mollusks; about 25 to 35 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to subrounded; about 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subangular; well cemented; porous, moldic and interparticle; solution holes are filled with sandstone.	2	38 - 40
Sandstone, white (N 9) to dusky-yellow (5 Y 6/4); quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 15 percent heavy minerals, fine grained, subangular to rounded; about 20 to 25 percent shell fragments, mollusks; about 10 to 20 percent sparite matrix; loosely to moderately cemented; interbedded with about 30 percent sand, quartzose, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 to 10 percent heavy minerals, fine grained, subangular to rounded.	4	40 - 44
Sand as above; about 30 percent shell fragments; interbedded with about 20 to 30 percent sandstone as above.	3	44 - 47
Sand, pinkish-gray (5 YR 8/1); quartzose, very coarse to very fine grained, poorly to moderately sorted (fine), angular to well rounded; about 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to subrounded; about 3 to 5 percent shell fragments toward base.	7	47 - 54
Sand as above, very pale orange (10 YR 8/2); quartz is moderately sorted.	3	54 - 57
Sand as in 47 to 54 feet; very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); about 15 to 20 percent heavy minerals.	3	57 - 60
Sand as in 54 to 57 feet.	4	60 - 64
Sand as in 47 to 54 feet; moderate-yellowish-brown (10 YR 5/4).	6	64 - 70
Sand, moderate-yellowish-brown (10 YR 5/4); quartzose, granules to very fine grained, poorly sorted, angular to well rounded; about 20 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (very fine), subangular to rounded; about 20 percent shell fragments, pelecypods, gastropods, and other mollusks.	4	70 - 74

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; quartzose, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subangular to well rounded; about 10 percent shell fragments, Pecten sp. and other mollusks.	3	74 - 77
Sand as above; about 20 to 25 percent heavy minerals and phosphorite; about 15 percent shell fragments.	3	77 - 80
Sand, moderate-yellowish-brown (10 YR 5/4) to dark-yellowish-brown (10 YR 4/2); quartzose, medium grained to silt, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to rounded; about 5 to 10 percent shell fragments, mollusks.	4	80 - 84
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, fine grained, subangular to rounded; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 5 to 10 percent shell fragments.	6	84 - 90
Sand as above; about 25 to 30 percent heavy minerals and phosphorite; about 20 to 25 percent shell fragments.	4	90 - 94
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, fine grained to silt, well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 30 percent shell fragments.	6	94 - 100
Shells and shell fragments, <u>Turritella</u> sp. and other mollusks; about 40 percent sand as above.	4	100 - 104
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular; about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to rounded; about 5 percent muscovite; about 15 percent shell fragments, mollusks; about 10 percent micrite, not cemented.	3	104 - 107
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 15 percent heavy minerals, very fine grained, subangular to subrounded; about 20 percent shell fragments; about 10 percent micrite, not cemented.	3	107 - 110
Sand as above; about 35 to 40 percent shell fragments.	4	110 - 114
Sand as above; about 10 percent shell fragments.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 20 percent heavy minerals; about 25 to 30 percent shell fragments, <u>Turritella</u> sp., <u>Ostrea</u> sp., and other mollusks.	7	117 - 124
Sand as above; about 10 percent shell fragments; about 5 percent micrite, not cemented at 127 to 130 feet.	6.5	124 - 130.5
Sandstone, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular to subangular; about 20 percent heavy minerals, very fine grained, subrounded to rounded; about 30 percent, shell fragments, Pecten sp. and other mollusks, and Balanus sp.; about 10 percent sparite matrix; moderately to well cemented.	3.5	130.5 - 134
Limestone, yellowish-gray (5 Y 8/1) to light-gray (N 7); sandy, packed poorly washed biosparite, Pecten sp., Ostrea sp., and other mollusks, and Balanus sp.; about 30 percent quartz, medium to very fine grained, moderately sorted (very fine), angular to subrounded; about 10 percent heavy minerals, very fine grained, subangular to subrounded; loosely to moderately cemented.	2	134 - 136
Limestone as above; coquinoid texture; about 10 to 15 percent quartz; about 5 to 10 percent heavy minerals and ferrous minerals; moderately to well cemented; porous, moldic and interparticle.	4	136 - 140
Limestone, very pale orange (10 YR 8/2) and light-gray (N 7) to medium-gray (N 5); sandy, sparse to sandy, packed biosparite, Balanus sp., Pecten sp. and others mollusks, and benthic foraminifers; about 30 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subangular; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to well rounded; moderately to well cemented; porous, moldic and interparticle.	4	140 - 144
Limestone, yellowish-gray (5 Y 8/1) to pinkish-gray (5 YR 8/1) and light-gray (N 7); sandy, packed poorly washed biosparite; about 35 percent quartz, fine grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals, very fine grained, angular to rounded; loosely to well cemented; moderately porous to porous, moldic and interparticle.	3	144 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; light-olive-gray (5 Y 5/2); about 40 percent quartz, coarse grained to silt, moderately sorted (fine), angular to well rounded; about 10 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subangular to rounded; loosely to well cemented; moderately porous to porous, moldic and interparticle; interbedded with about 30 percent sand, quartzose, coarse grained to silt, moderately sorted (fine), angular to well rounded; about 10 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subangular to rounded.	3	147 - 150
Sandstone, pinkish-gray (5 YR 8/1) and medium-light-gray (N 6); quartzose, medium to very fine grained, well sorted (very fine), angular to rounded; about 15 to 20 percent heavy minerals, very fine grained, subangular to rounded; about 45 to 50 percent shell fragments and casts and molds; very loosely to well cemented.	4	150 - 154
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 25 percent heavy minerals, very fine grained, subangular to subrounded; about 20 percent shells and shell fragments; cemented in places into a sandstone; about 45 to 50 percent shell fragments and casts and molds, abundant Turritella sp.; loosely to well cemented.	3	154 - 157
Limestone, light-olive-gray (5 Y 5/2); sandy, packed poorly washed biosparite; about 40 percent quartz, coarse grained to silt, moderately sorted (fine), angular to well rounded; about 10 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subangular to rounded; moderately to well cemented toward base; moderately porous to porous, moldic and interparticle.	3	157 - 160
Limestone, yellowish-gray (5 Y 8/1) to light-gray (N 7); sandy, packed biosparite, mollusks; about 35 percent quartz, coarse to fine grained, moderately sorted (medium), angular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), angular to well rounded; moderately to well cemented; porous, moldic.	4	160 - 164
Sandstone, yellowish-gray (5 Y 7/2) to light-gray (N 7); quartzose, very coarse to fine grained, poorly sorted, subangular to well rounded; about 15 percent heavy minerals and phosphorite, very coarse to very fine grained, poorly sorted, subangular to well rounded; about 20 to 30 percent sparite matrix; grades to a limestone in places; about 50 to 55 percent casts and molds; moderately to well cemented; porous, moldic.	3	164 - 167

Lat 25°22'56", long 80°36'35" T. 58 S., R. 37 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (very fine), subrounded to well rounded; about 3 percent biotite; about 20 percent shell fragments, Pecten sp. and other mollusks, some are phosphatized.	7	167 - 174
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to rounded; about 3 percent muscovite; about 15 percent shell fragments, benthic foraminifers, sponge spicules, and mollusks; about 5 percent limestone, sandy micrite.	3	174 - 177
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 percent muscovite; about 15 percent shell fragments; cemented in places; about 30 percent micritic matrix.	3	177 - 180
Sand as above; about 5 to 10 percent muscovite; interbedded with about 10 to 20 percent sandy siltstone.	4	180 - 184
Sand, yellowish-gray (5 Y 8/1); quartzose, fine grained to silt, angular to subrounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (fine), subangular to subrounded.	3	184 - 187
Sand as above; about 5 percent shell fragments; about 5 percent micrite, not cemented.	3	187 - 190
Sand as above; yellowish-gray (5 Y 7/2); increase in silt; interbedded with about 5 to 10 percent sandy siltstone, abundant foraminifers.	4	190 - 194
Sand, yellowish-gray (5 Y 7/2); quartzose, medium grained to silt, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to well rounded; about 15 percent muscovite; about 3 percent shell fragments, mollusks.		194 - 197
Sand as above; decrease in silt; about 20 percent heavy minerals and phosphorite, granules to fine grained, well sorted (fine), subrounded to well rounded; about 5 percent shell fragments; about 3 to 5 percent micrite, not cemented.	3	197 - 200

Lat 25°22'56", long 80°36'35" T. 58 S., R. 37 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; increase in silt; about 3 to 5 percent shell fragments; cemented in places into a sandstone, about 15 percent micritic matrix.	4	200 - 204
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, poorly sorted, angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (medium), subrounded to well rounded; about 30 to 35 percent shell fragments, mollusks; cemented in places into about 5 percent sandstone.	3	204 - 207
Sand as above; yellowish-gray (5 Y 8/1) to light-gray (N 7); shark teeth; interbedded with about 10 percent sandstone as above; quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent sparite matrix; well cemented.	3	207 - 210
Sandstone as above; light-gray (N 7); about 20 percent heavy minerals, phosphorite, and ferrous minerals; about 25 percent shell fragments, mollusks; loosely to well cemented at 210.5 to 212 feet.	4	210 - 214
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 15 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to rounded; about 10 percent muscovite; interbedded with about 20 percent claystone, light-olive-gray (5 Y 5/2); sandy, silty, and calcareous; contains foraminifers and foraminiferal ooze; moderately cemented; virtually nonporous.	3	214 - 217
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent muscovite; about 3 to 5 percent shell fragments.	1	217 - 218
Missing.	2	218 - 220
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 to 15 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; about 5 percent muscovite; about 3 to 5 percent shell fragments; about 3 to 5 percent micrite, not cemented.	4	220 - 224

Lat 25°22'56", long 80°36'35" T. 58 S., R. 37 E.

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 1 percent shell fragments; about 3 to 5 percent micrite, not cemented.	3	224 - 227
Sand as above; about 10 percent muscovite.	3	227 - 230
Sand as above; about 10 percent heavy minerals and ferrous minerals, coarse to very fine grained, well sorted (very fine), subangular to rounded; about 1 to 3 percent shell fragments.	10	230 - 240
Sand as in 220 to 224 feet; light-olive-gray (5 Y 5/2); about 10 to 15 percent heavy minerals and ferrous minerals, coarse to very fine grained, moderately sorted (fine), angular to well rounded; about 5 percent shell fragments.	4	240 - 244
Sand as above; quartzose, very coarse grained and fine grained to silt, well sorted (very fine), angular to well rounded; about 10 to 15 percent heavy minerals and phosphorite, very coarse grained and fine to very fine grained, moderately (fine) to poorly sorted, angular to well rounded.	3	244 - 247
Sand as above.	3	247 - 250

Lithologic Log of Well G-3319

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	9.5	0 - 9.5
Lime mud, light-olive-gray (5 Y 6/1); silty.	0.5	9.5 - 10
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), moderate-yellowish-brown (10 YR 5/4), and dark-yellowish-orange (10 YR 6/6); sparse oosparite; well cemented; porous to very porous, vugs.	4	10 - 14
Limestone, moderate-yellowish-brown (10 YR 5/4) to dark-yellowish-orange (10 YR 6/6); sparse poorly washed cosparite, mollusks; well cemented; porous to very porous, vugs.	2	14 - 16
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and light-gray (N 7); sandy, intraclastic sparse poorly washed biosparite; intraclasts are composed of the Fort Thompson Limestone; about 15 percent quartz, medium grained, angular to subrounded; about 3 to 5 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), subangular to subrounded; grades to a sparse poorly washed biosparite, abundant benthic foraminifers, Archais sp.; well cemented; moderately porous to porous, vugs and moldic.	2	16 - 18
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse intramicrite, Chione sp., Ostrea sp., and other mollusks; about 20 percent quartz, medium to fine grained, well sorted (medium), angular to subangular; about 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subangular to well rounded; well cemented; moderately porous to porous, interparticle and moldic.	2	18 - 20
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and light-gray (N 7); sparse biosparite, mollusks including gastropods; very well cemented; moderately porous, vugs.	4	20 - 24
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sparse intraclastic poorly washed biosparite, mollusks and Archais sp.; about 10 percent quartz, medium to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals, very fine grained, subangular; well cemented; porous, moldic and vugs.	4	24 - 28
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, packed poorly washed biosparite, mollusks; about 5 percent heavy minerals, medium to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous.	2	28 - 30

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, light-olive-gray (5 Y 6/1) to medium-light-gray (N 6); sparse biosparite, Helisoma sp.; very well cemented; slightly to moderately porous, vugs and moldic.	2	30 - 32
Limestone as above; in contact with a sandy, sparse biomicrite, Helisoma sp.; about 25 to 30 percent quartz, very coarse to fine grained, moderately sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous, moldic.	2	32 - 34
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse, poorly washed biosparite, mollusks and corals; about 15 to 35 percent quartz, very coarse to fine grained, angular to rounded; about 3 to 5 percent heavy minerals and phosphorite, coarse to fine grained, angular to rounded; well cemented; moderately porous to porous, moldic and vugs.	6	34 - 40
Limestone as above; very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); is a sandstone in places; moderately to well cemented.	2	40 - 42
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 percent heavy minerals and phosphorite, angular to rounded; interbedded with about 20 percent limestone, yellowish-gray (5 Y 8/1); sandy, poorly washed biosparite, grades to a sandstone in places; well cemented; porous, vugs.	4	42 - 46
Sand as above; interbedded with about 20 percent sandstone as above; about 20 percent sparite; about 20 percent shell fragments and casts and molds; well cemented; porous, vugs and moldic.	2	46 - 48
Sand, yellowish-gray (5 Y 8/1); quartzose, fine grained, subangular to rounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to subrounded.	2	48 - 50
Sand as above; interbedded with about 30 to 40 percent limestone; sandy, sparse poorly washed biosparite, Chione sp. and other mollusks; about 35 percent quartz, fine grained, subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to subrounded; is a sandstone in places; well cemented; moderately porous to porous, moldic and vugs.	4	50 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, fine grained, angular to well rounded; about 5 percent shell fragments, mollusks.	2.5	54 - 56.5
Sand, olive-gray (5 Y 4/1); quartzose, very fine grained to silt, well sorted (fine), angular; about 10 percent heavy minerals, fine grained, subangular to subrounded; about 40 percent clayey micrite, not cemented; about 20 percent shell fragments.	0.5	56.5 - 57
Sand, olive-gray (5 Y 4/1); quartzose, medium grained to silt, poorly sorted, angular to subrounded; about 15 percent heavy minerals, fine grained, subangular to subrounded; about 30 percent clayey micrite, not cemented; about 10 to 15 percent shell fragments, mollusks.	3	57 - 60
Sand, pale-yellowish-brown (10 YR 6/2) to yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, angular to subrounded.	10	60 - 70
Sandstone, light-olive-gray (5 Y 6/1) to light-gray (N 7); quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to rounded; about 20 to 25 percent shells and shell fragments, mollusks including Turritella sp.; about 10 percent sparite matrix; moderately to well cemented; interbedded with about 40 percent sand, quartzose, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subangular to rounded.	4	70 - 74
Sand as above; interbedded with about 40 to 50 percent sandstone; about 10 percent shell fragments.	3	74 - 77
Sand as above; interbedded with about 30 percent sandstone as above; about 5 percent shell fragments.	3	77 - 80
Sandstone as above; about 20 percent heavy minerals and phosphorite, fine grained, angular to rounded; about 5 percent pyrite and ferrous minerals; concretionary; well cemented.	4	80 - 84

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, fine grained, angular to well rounded; about 10 to 15 percent shell fragments, mollusks including Pecten sp.; about 10 percent sparite; concretionary; loosely to well cemented; interbedded with about 40 percent sand as in 70 to 74 feet.	3	84 - 87
Sandstone as above; about 20 percent shell fragments, mollusks; loosely to moderately cemented.	3	87 - 90
Sand as in 70 to 74 feet; about 20 to 25 percent heavy minerals and phosphorite; about 10 percent shell fragments, mollusks; about 3 to 5 percent mica.	10	90 - 100
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to well rounded; about 10 to 20 percent shell fragments, mollusks and large Balanus sp.	14	100 - 114
Shells and shell fragments, mollusks including Olivella sp.; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 15 percent micrite, not cemented.	3	114 - 117
Sand as above; about 30 percent shell fragments; about 10 percent micrite, not cemented.	3	117 - 120
Sand, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to rounded; about 5 to 15 percent shell fragments; large bone of a mammal's articulated rib was encountered; about 5 percent mica; about 30 percent micrite, not cemented.	10	120 - 130
Sand as above; about 1 to 3 percent shell fragments; about 40 percent micrite, not cemented.	4	130 - 134
Sand as above; about 10 to 15 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine), subangular to rounded; lacks shell fragments.	3	134 - 137
Sand as above; about 5 percent shell fragments; cemented in places into a silty, calcareous sandstone.	3	137 - 140

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; light-olive-gray (5 Y 5/2); about 15 to 20 percent micrite, not cemented; moderately cemented; virtually nonporous.	4	140 - 144
Sand as above; about 20 to 25 percent shell fragments; about 25 to 30 percent micrite, not cemented.	6	144 - 150
Sand as above; cemented at 152 to 155.5 into a sandstone as above; about 20 to 25 percent shell fragments, scaphopods, <u>Turritella</u> sp., and other mollusks; about 20 to 25 percent micritic matrix; moderately cemented; virtually nonporous.	7	150 - 157
Sand as above; about 5 to 15 percent shell fragments.	10	157 - 167
Sand as above; about 5 to 10 percent shell fragments; about 10 to 15 percent micrite, not cemented.	9	167 - 176
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, Pecten sp., Turritella sp., and other mollusks; about 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, very fine grained, subrounded to well rounded; well cemented; porous, moldic and vugs; interbedded with about 30 percent sand as above.	4	176 - 180
Sandstone, light-olive-gray (5 Y 6/1 and 5 Y 5/2); quartzose, medium grained to silt, well sorted (very fine to fine at 184 to 187 feet); about 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), subrounded to well rounded; about 30 percent shells and shell fragments and casts and molds; about 15 percent sparite matrix; well cemented; porous, moldic and vugs.	7	180 - 187
Sandstone as above; about 20 percent heavy minerals and phosphorite, fine grained, subangular to well rounded; about 30 to 35 percent shell fragments; loosely to well cemented.	10	187 - 197
Sandstone as above; quartzose, medium to very fine grained, moder- ately sorted (very fine), angular to subrounded; about 25 percent shell fragments; about 10 percent sparite matrix; loosely to moderately cemented.	3	197 - 200

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1); quartzose, very coarse to very fine grained, moderately to well sorted (fine), angular to rounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, angular to rounded; about 15 percent shell fragments; about 20 percent sparite matrix; loosely to well cemented; moderately porous to porous, moldic and vugs.	4	200 - 204
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (medium), angular to well rounded; about 15 percent heavy minerals and phosphorite, very coarse to fine grained, moderately sorted (fine), angular to rounded; about 5 to 10 percent muscovite; about 5 to 10 percent shell fragments; phosphatized bone chips; well cemented in places to about 5 to 10 percent sandstone; about 15 to 20 percent sparite matrix; moderately porous, moldic.	6	204 - 210
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), angular to well rounded; about 10 percent muscovite; about 15 percent fragments; moderately cemented in places into about 10 to 15 percent sandstone; lacks shells; about 15 percent micritic matrix.	7	210 - 217
Sand as above; about 15 percent heavy minerals and phosphorite, granules to fine grained, poorly sorted to moderately sorted (fine), angular to rounded; about 15 to 20 percent shell fragments.	3	217 - 220
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, poorly sorted, angular to well rounded; about 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, subangular to well rounded; about 25 percent shell fragments; shark teeth; cemented in places into about 5 to 10 percent sandstone.	10	220 - 230
Sand as above; about 10 percent heavy minerals and phosphorite; about 10 percent shell fragments; chips of petrified wood; interbedded with about 20 percent silty sandstone.	4	230 - 234
Sand, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, very coarse to fine grained, angular to rounded; about 10 percent muscovite; about 10 percent shell fragments; interbedded with about 5 percent clayey silt.	3	234 - 237

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, granules to silt, poorly sorted, angular to rounded; about 15 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, angular to well rounded; about 10 percent shell fragments; mantaray teeth; about 3 to 5 percent micrite, not cemented.		237 - 243
Sandstone, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular to subangular; about 20 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine); about 10 percent mica including muscovite and biotite; about 20 percent micritic matrix; loosely to moderately cemented.	4	243 - 247
Sand, light-olive-gray (5 Y 5/2); quartzose, very fine grained to silt, well sorted (very fine), angular to subrounded; about 10 to 20 percent heavy minerals, very fine grained to silt, well sorted (very fine), subangular to well rounded; about 10 to 15 percent micrite, not cemented; about 5 percent shell fragments, foraminifers and sponge spicules.	13	247 - 260
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, well sorted (very fine), angular to well rounded; about 20 percent heavy minerals and phosphorite, very fine grained to silt, well sorted (very fine), subangular to well rounded; about 5 to 10 percent muscovite; contains foraminifers; about 1 percent micrite, not cemented; cemented at 267 to 267.5 feet.	20	260 - 280
Sand as above; quartzose, medium grained to silt, well sorted (very fine), angular to subrounded; about 3 to 5 percent muscovite.	10	280 - 290
Sand as above; quartzose, fine grained to silt, well sorted (very fine), angular to subangular; copper minerals.	10	29 0 - 3 00

Lithologic Log of Well G-3320

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	4	0 - 4
Limestone, very pale orange (10 YR 8/2); fossiliferous poorly washed oosparite, mollusks; well cemented; porous, vugs; interbedded with an admixture of soil and micrite, not cemented, dark-yellowish-brown (10 YR 4/2).	2	4 - 6
Limestone, very pale orange (10 YR 8/2); sparse poorly washed oospar- ite, mollusks; well cemented; porous to very porous, vugs; inter- bedded with micrite, not cemented, dark-yellowish-brown (10 YR 4/2) to pale-yellowish-brown (10 YR 6/2); occurs as cavity-filling detritus, decreases toward base.	4	6 - 10
Limestone, very pale orange (10 YR 8/2); sparse oosparite, mollusks; about 5 to 15 percent ferrous mineral specks; very porous, vugs.	6	10 - 16
Limestone, very pale orange (10 YR 8/2); intraclast-bearing sparse oosparite, mollusks; intraclasts are reworked Fort Thompson limestone, dark-yellowish-brown (10 YR 4/2); sparse biosparite, Archais sp.	6	16 - 22
Limestone, very pale orange (10 YR 8/2); packed oosparite, bryozoans and mollusks; about 5 percent ferrous mineral specks; well cemented; very porous, moldic and vugs.	2	22 - 24
Limestone, very pale orange (10 YR 8/2) and pale-yellowish-brown (10 YR 6/2); sparse oosparite, mollusks including Chione sp.; interfingers with intrasparite; well cemented; very porous, moldic and vugs.	2	24 - 26
Limestone, very pale orange (10 YR 8/2); sparse intraclastic oospar- ite, mollusks and abundant bryozoans; interfingering with intra- sparite as above, <u>Archais</u> sp.; well cemented; porous, vugs and moldic; in contact with subaerial crust at 28 to 30 feet.	4	26 - 30
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and pale-yellowish-brown (10 YR 6/2); sparse oosparite, mollusks; interfingering with sandy, sparse poorly washed biosparite; about 30 to 35 percent quartz, medium to fine grained, moderately sorted (fine), subrounded to rounded; well cemented; slightly to moderately porous and porous at 32 to 34 feet.	4	30 - 34

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and pale-yellowish-brown (10 YR 6/2); sparse biosparite, Archais sp. and mollusks; interfingering with sparse poorly washed biosparite as above; about 25 to 30 percent quartz; well cemented; porous, vugs.	4	34 - 38
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse biosparite, mollusks, Archais sp. and other benthic foraminifers; about 5 to 10 percent quartz, fine to very fine grained, well sorted (very fine), angular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), subrounded; interfingering with packed biosparite, Archais sp. and other benthic foraminifers; well to very well cemented; moderately porous to porous, vugs.	4	38 - 42
Limestone as above; about 1 to 3 percent heavy minerals; interfingering with freshwater limestone; silty, sandy micrite; about 5 percent of the sample is porous to very porous, moldic and vugs.	6	42 - 48
Limestone as above; interfingering only with silty, sandy micrite.	4	48 - 52
Limestone as above; grading to a sandy, packed biosparite in places, abundant Chione sp.; porous to very porous, moldic and interparticle.	2	52 - 54
Limestone as above; sandy, packed biosparite, <u>Chione</u> sp., <u>Turritella</u> sp., and other mollusks; about 3 to 5 percent heavy minerals and ferrous minerals; interbedded with minor amount of freshwater limestone as above.	2	54 - 56
Limestone, medium-light-gray (N 6); sparse to packed poorly washed biosparite, Helisoma sp. and other freshwater gastropods; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous to porous, moldic; interfingering with about 10 to 20 percent limestone as above; sandy, packed biosparite.	2	56 - 58
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, marine mollusks and freshwater gastropods; about 20 to 25 percent quartz, coarse to fine grained, well sorted (medium), angular to subrounded; well cemented; slightly to moderately porous; interfingering with about 30 percent freshwater limestone as above.	2	58 - 60

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, Archais sp. and other benthic foraminifers; about 25 to 30 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; well cemented; slightly to moderately porous in places, moldic; grades to a sandy, sparse to sandy, packed biosparite, mol- lusks, corals, and Archais sp.; well cemented; moderately porous, moldic.	2	60 - 62
Limestone, very pale orange (10 YR 8/2); packed biosparite, mollusks including both freshwater and marine water gastropods; well cemented; moderately porous to porous, moldic and interparticle.	2	62 - 64
Limestone, very pale orange (10 YR 8/2); sandy, packed biosparite, Chione sp. and other mollusks, and framework organism; about 10 to 15 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; well cemented; porous, moldic and framework.	2	64 - 66
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 20 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine grained, angular to subrounded; well cemented; moderately porous to porous, moldic.	2	66 - 68
Limestone as above (about 20 to 30 percent); marine water and freshwater mollusks; about 20 percent quartz; well cemented; moderately porous to porous, moldic and interparticle; interfingering with freshwater limestone, very pale orange (10 YR 8/2) to pale-yellow-ish-brown (10 YR 6/2); packed biosparite, Helisoma sp. and other freshwater gastropods; well cemented; moderately porous to porous, moldic.	2	68 - 70
Limestone, very pale orange (10 YR 8/2) to yellowish-gray (5 Y 8/1); sandy, sparse to sandy, packed poorly washed biosparite, mollusks including Chione sp. and freshwater gastropods; about 25 to 30 percent quartz, coarse to fine grained, well sorted (fine), subangular to subrounded; about 5 percent heavy minerals, collophane, and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; well cemented; moderately porous to porous, moldic and vugs.	2	70 - 72

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, packed poorly washed biosparite, Chione sp., barnacles, corals, and freshwater gastropods; about 30 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to rounded; grades to a sandstone in places; about 30 to 40 percent shell fragments, barnacles, Pecten sp. and Chione sp.; well cemented; porous to very porous, moldic, interparticle, and vugs.	2	72 - 74
Sandstone as above (about 30 to 40 percent); in contact with a sandy, fossiliferous poorly washed biosparite, mollusks and fish teeth; about 30 to 35 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to fine grained, moderately sorted (fine), subangular to rounded; interfingering with freshwater limestone; sandy, sparse poorly washed biosparite, Helisoma sp. and other freshwater gastropods; about 35 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, medium to fine grained, well sorted (fine), angular to subrounded; well cemented; moderately porous, moldic.		74 - 76
Limestone as above; sandy, sparse poorly washed biosparite; inter- fingering with a sandy, sparse biosparite, marine mollusks; about 35 percent quartz, coarse to fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; moderately porous to porous, moldic.	2	76 - 78
Limestone, very pale-orange (10 YR 8/2) to yellowish-gray (5 Y 7/2); sandy, sparse to sandy, packed biosparite, mollusks; about 30 to 50 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to subrounded; is a sandstone in places; well cemented; porous, moldic and vugs.	2	78 - 80

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, poorly sorted, angular to rounded; about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 20 to 25 percent shell fragments, Balanus sp. (pink) and mollusks; well cemented; porous, interparticle and vugs; interbedded with about 35 to 40 percent sand, quartzose, coarse to very fine grained, moderately to well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), angular to rounded.	2	80 - 82
Sand as above; interbedded with about 40 percent sandstone, very pale orange (10 YR 8/2) to dusky-yellow (5 Y 6/4); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subangular; very well cemented.	2	82 - 84
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sandy, fossiliferous micrite to sandy, fossiliferous poorly washed sparite in places, mollusks including gastropods; about 25 to 30 percent quartz, coarse to fine grained, well sorted (medium), angular to rounded; about 3 to 5 percent heavy minerals and ferrous minerals, fine to very fine grained; well cemented; moderately porous, moldic.	2	84 - 86
Sand, pale-yellowish-brown (10 YR 6/2); quartzose, coarse to medium grained, well sorted (medium), subangular to rounded; about 3 percent heavy minerals, medium grained, angular; about 25 percent shell fragments, marine water and freshwater mollusks.	8	86 - 94
Lime mud, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); sandy, shelly micrite; about 35 percent shell fragments, mollusks including Olivella sp.; about 30 percent quartz, medium to fine grained, well sorted (fine), angular to subangular; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded.	3	94 – 97
Lime mud as above; about 15 to 20 percent shell fragments; about 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite.	3	97 - 100
Lime mud as above; about 30 to 35 percent shell fragments.	3	100 - 103

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, mollusks; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite.	1	103 - 104
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 20 to 30 percent micrite, not cemented; about 10 to 15 percent shell fragments.	3	104 - 107
Silt, light-olive-gray (5 Y 6/1); sandy; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 20 to 30 percent micrite, not cemented; about 15 percent shell fragments.	3	107 - 110
Sandstone, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; about 25 percent shell fragments, mollusks and echnoid spines; about 10 to 20 percent micritic matrix; moderately cemented; very slightly to slightly porous.	4	110 - 114
Shells and shell fragments, Ostrea sp., Turritella sp., and other mollusks; about 20 percent quartz, very fine grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine); loosely cemented in places.	3	114 - 117
Sandstone as in 110 to 114 feet; about 35 percent shell fragments, mollusks; about 30 percent micritic matrix; moderately to well cemented; very slightly porous.	3	117 - 120
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine); about 5 percent micrite, not cemented; about 25 percent shell fragments, Pecten sp. and Turritella sp.	4	120 - 124
Sand as above; quartz, fine grained to silt, moderately sorted (very fine), angular to subangular; about 5 to 10 percent micrite, not cemented; interbedded with about 20 to 30 percent sandy, shelly siltstone; about 25 percent shell fragments; about 20 to 30 percent micritic matrix; well cemented.	3	124 - 127

Description	Thick- ness (feet)	Depth, feet below land surface
Siltstone, light-olive-gray (5 Y 6/1) to very light gray (N 7); about 30 percent quartz, coarse to fine grained, moderately sorted (fine), angular to subrounded; about 5 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to rounded; about 25 to 30 percent shell fragments, Turritella sp. and other mollusks; about 15 percent sparite matrix; moderately to well cemented.	3	127 - 130
Sand, light-olive-gray (5 Y 6/1); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), angular to subrounded; about 25 to 30 percent shell fragments, <u>Balanus</u> sp., <u>Pecten</u> sp., and other mollusks.		130 - 134
Siltstone, light-olive-gray (5 Y 6/1); very sandy; about 10 percent phosphorite and heavy minerals, coarse to very fine grained, well sorted (fine), angular to rounded; about 25 to 30 percent shell fragments; about 20 percent micritic matrix; loosely to well cemented.	3	134 - 137
Sandstone, pale-olive (10 YR 6/2) to grayish-olive-gray (10 YR 4/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 5 percent heavy minerals, very fine grained, angular to subrounded; about 20 percent shell fragments; about 10 percent micritic matrix; loosely cemented; virtually nonporous.	3	137 - 140
Silt, light-olive-gray (5 Y 5/2); very sandy; about 5 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent shell fragments; about 1 to 3 percent micrite, not cemented; interbedded with about 20 percent shelly sand at 140 to 142 feet and 142.5 to 143.5 feet, quartzose, coarse to fine grained, moderately sorted (medium), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), angular to subangular; about 25 to 30 percent shell fragments.	4	140 - 144
Siltstone, light-olive-gray (5 Y 5/2); about 20 percent quartz, fine to very fine grained, angular to subangular; about 5 percent heavy minerals, very fine grained; about 3 to 5 percent micritic matrix; loosely to moderately cemented.	3	144 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Silt, moderate-olive-brown (5 Y 4/4); about 20 percent quartz, fine to very fine grained, angular to subangular; about 5 percent heavy minerals, very fine grained, angular to subrounded; about 3 to 5 percent micrite, not cemented; about 3 to 5 percent shell fragments; loosely cemented in places.	3	147 - 150
Silt as above; about 10 percent foraminifers.	5	150 - 155
Silt as above; light-olive-gray (5 Y 5/2); about 10 percent quartz; about 5 to 10 percent heavy minerals; about 5 to 10 percent mica; about 25 percent foraminifers; cemented at 158 feet.	10	155 - 165
Silt as above; about 20 percent micrite, not cemented.	5	165 - 170
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 10 percent shell fragments, mollusks including Pecten sp.; about 10 percent micrite, not cemented.	5	170 - 175
Sand as above; quartzose, fine grained to silt, moderately sorted (very fine), subangular to rounded; increase in silt; about 10 to 15 percent shell fragments and foraminifers; about 5 percent micrite, not cemented.	5	175 - 180

Lithologic Log of Well G-3321

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	6	0 - 6
Peat and soil.	2.5	6 - 8.5
Limestone, very pale orange (10 YR 8/2); sparse oomicrite, mollusks; neomorphic calcite present in tests; well cemented; porous to very porous, vugs.	1.5	8.5 - 10
Limestone, very pale orange (10 YR 8/2); sparse poorly washed oospar- ite, mollusks; well cemented; porous, vugs; interbedded with peat in solution holes until 11.5 feet.	4	10 - 14
Limestone as above; sparse comicrite at 14 to 15 feet; about 3 percent quartz, medium grained, subangular to subrounded; porous, moldic and vugs.	2	14 - 16
Limestone, very pale orange (10 YR 8/2) and light-gray (N 7); pelletiferous sparse oosparite, abundant bryozoans toward base; well cemented; very porous, channels, vugs, and framework.	4	16 - 20
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); mottled texture resulting from localized neomorphic cement in matrix; sandy, sparse oosparite, Archais sp.; about 15 to 20 percent quartz, medium grained, angular to subrounded; about 5 to 10 percent heavy minerals, fine grained, subrounded to rounded; well cemented; porous, vugs.	2	20 - 22
Limestone, very pale orange (10 YR 8/2); birdeye texture; sparse oosparite, mollusks and Archais sp.; porous, vugs.	2	22 - 24
Limestone as above; very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); porous to very porous, moldic and vugs; in contact with sandy calcrete crust, ferrous stained.	2	24 - 26
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, mollusks; about 20 to 25 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals, very fine grained, angular; well cemented; porous to very porous, vugs.	2	26 - 28
Limestone, very pale orange (10 YR 8/2); sandy, sparse oolite-bearing micrite; about 25 percent quartz, medium to fine grained, well sorted (medium), angular to subrounded; about 3 percent heavy minerals, fine grained, angular to subangular; well cemented; moderately porous to porous, moldic and vugs.	2	28 - 30

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), dark-yellowish-orange (10 YR 6/6), and moderate-yellowish-brown (10 YR 5/4); sandy, sparse oolite-bearing intrasparite, Archais sp. and other benthic foraminifers; about 15 percent quartz, medium to fine grained, angular to subrounded; about 10 percent ferrous minerals, fine grained, angular to subangular; well cemented; porous, vugs.	1.5	30 - 31.5
Cavity.	0.5	31.5 - 32
Limestone, very pale orange (10 YR 8/2) to dark-grayish-orange (10 YR 6/6); birdeye texture; sandy, sparse poorly washed biosparite, Archais sp. and mollusks, ferrous stained; about 25 percent coarse to fine grained, moderately sorted (medium), subangular to rounded; about 3 to 5 percent ferrous minerals, very fine grained, subrounded.	2	32 - 34
Limestone, dark-yellowish-brown (10 YR 4/2) to moderate-yellowish-brown (10 YR 5/4) and dark-yellowish-orange (10 YR 6/6); sparse biosparite, Helisoma sp.; interfingers with a sandstone, very pale orange (10 YR 8/2); quartzose, very coarse to fine grained, poorly sorted, subangular to subrounded; about 5 percent ferrous minerals, very fine grained, subrounded; about 20 percent shell fragments; contains clast of freshwater limestone with pores having sand as cavity-filling detritus; well cemented; moderately porous to porous, vugs.	2	34 - 36
Limestone, very pale orange (10 YR 8/2) to dark-yellowish-orange (10 YR 6/6); sandy, sparse poorly washed sparite; subaerially exposed; about 20 to 25 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to subrounded; well cemented; moderately porous, vugs; interbedded with about 30 to 40 percent sand, quartzose, coarse to fine grained, moderately to well sorted (medium), angular to rounded.	2	36 - 38
Sand as above.	1	38 - 39
Limestone, very pale orange (10 YR 8/2), yellowish-gray (5 Y 7/2), and grayish-yellow (5 Y 7/6); sparse biosparite, mollusks including gastropods; rill marks in matrix; very well cemented; slightly to moderately porous, moldic and vugs.	1	39 - 40
Limestone as above; about 10 percent ferrous minerals, specks; moderately porous to porous; interbedded with about 20 percent sand, coarse to fine grained, moderately sorted (fine), angular to rounded.	2	40 - 42

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; about 20 to 25 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular.	2	42 - 44
Limestone as in 39 to 40 feet; porous, moldic and vugs.	2	44 - 46
Limestone, light-olive-gray (5 Y 6/1) to dusky-yellow (5 Y 6/4); sandy, sparse biosparite, mollusks including <u>Helisoma</u> sp.; about 5 to 10 percent quartz, medium grained, subrounded; about 5 percent heavy minerals, medium grained, rounded; well cemented; moderately porous to porous, moldic and vugs.	2	46 - 48
Limestone as above; sandier toward base; about 25 percent quartz, medium grained, subangular to subrounded; about 5 to 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (very fine), angular to rounded; well cemented; slightly porous.	2	48 - 50
Limestone as above; about 25 percent quartz, medium to fine grained, well sorted (medium), subangular to subrounded; about 10 percent heavy minerals, phosphorite, and collophane, medium to very fine grained, subrounded to well rounded; slightly to moderately porous, vugs.	. 2	50 - 52
Limestone as above; about 35 percent quartz; about 10 percent heavy minerals, ferrous minerals, and phosphorite; grades to a sandstone in places; well cemented; moderately porous to porous, vugs; interbedded with about 20 percent sand, quartzose, medium to fine grained, well sorted (fine), subangular to rounded; about 5 percent phosphorite and heavy minerals, medium to fine grained, well sorted (medium), subrounded to rounded.	1	52 - 53
Sand as above.	1	53 - 54
Sand as above; cemented in places into a (about 10 to 20 percent) sandstone; about 30 percent sparite matrix; well cemented; porous, vugs.	2	54 - 56
Sand as above.	1.5	56 - 57.5
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to well rounded; well cemented; porous, moldic and vugs.	0.5	57.5 - 58

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 50 to 52 feet.	1	58 - 59
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), subangular to subrounded; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 40 percent shell fragments and molds and casts; about 10 percent sparite matrix; well cemented; porous, moldic.	1	59 - 60
Sandstone as above; about 20 percent shells and casts and molds; grades into a sandy limestone in places; well cemented; slightly to moderately porous, moldic and vugs.	1	60 - 61
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 20 percent heavy minerals and phosphorite, fine grained, subangular to well rounded; loosely cemented in places.	3	61 - 64
Sandstone as in 60 to 61 feet; about 10 percent heavy minerals, phosphorite, and ferrous minerals; interbedded with about 20 percent sand as above.	3	64 - 67
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, mollusks; neomorphic calcite in tests; about 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to subrounded; about 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), subangular to well rounded; moderately to well cemented; moderately porous to porous, moldic and vugs.	3	67 - 70
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed intrasparite; about 25 percent quartz as above; about 20 to 25 percent heavy minerals, phosphorite, and ferrous minerals as above; moderately to well cemented; porous, moldic and vugs.	14	70 – 84
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biomicrite, mollusks; about 25 percent quartz, medium to very fine grained, subangular to subrounded; about 20 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), subangular to well rounded; moderately to well cemented; porous, moldic and vugs.	3	84 - 87
Limestone as above; grades to a sandy, packed biomicrite in places; about 15 to 20 percent quartz; about 5 percent heavy minerals; moderately to well cemented; porous to very porous, moldic and vugs.	3	87 - 90

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); sandy, sparse to sandy, packed poorly washed biosparite, Chione sp. and other mollusks; about 25 to 30 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, very fine grained, subangular to subrounded; moderately to well cemented; porous to very porous, moldic and vugs.	4	90 - 94
Limestone as above; about 35 percent quartz, medium to very fine grained, moderately sorted (very fine), angular to subrounded; porous to very porous, interparticle, moldic, and vugs.	3	94 - 97
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, <u>Turritella</u> sp., <u>Ostrea</u> sp. and other mollusks; about 25 to 30 percent quartz, medium to very fine grained, moderately sorted (very fine), angular to rounded; about 10 percent heavy minerals and phosphorite, very fine grained, subangular to well rounded; well to moderately cemented at 99 to 100 feet; moderately porous to porous toward base, vugs and interparticle.	7	97 - 104
Sandstone, light-olive-gray (5 Y 6/1); quartzose, coarse to very fine grained, moderately sorted (very fine), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, very fine grained, subrounded to well rounded; about 15 to 20 percent shell fragments; about 20 percent poorly washed sparite matrix; well cemented; moderately porous, moldic and vugs; sandstone is dark-yellowish-orange (10 YR 6/6) at 107 feet; quartzose, medium to very fine grained, well sorted (very fine), angular to rounded; about 10 to 15 percent heavy minerals and ferrous minerals, very fine grained, subrounded to rounded; about 30 percent sparite matrix; very well cemented; slightly to moderately porous.	3	104 - 107
Sandstone as above; yellowish-gray (5 Y 7/2) to grayish-orange (10 YR 7/4); about 10 to 20 percent sparite matrix; concretionary in places; is loosely to moderately cemented at 108 to 112 feet.	5	107 - 112
Sand, yellowish-gray (5 Y 7/2); quartzose, medium to fine grained, well sorted (medium), angular to rounded; about 10 percent heavy minerals, phosphorite, and ferrous minerals, fine grained, subangular to well rounded; about 10 percent shell fragments, mollusks; loosely cemented at 112 to 113 feet.	2	112 - 114
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to fine grained, well sorted (fine), angular to subrounded; loosely to well cemented in places (concretionary).	3.5	114 - 117.5

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 15 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subangular to well rounded; about 20 to 35 percent shell fragments, mollusks; about 5 to 10 percent sparite matrix; loosely to moderately cemented; moderately porous to porous, moldic at 117.5 to 120 feet (porosity was not determined below 120 feet).	17.5	117.5 - 135
Sand, very light gray (N 8); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 25 percent heavy minerals, very fine grained, subangular to well rounded; about 15 to 25 percent shell fragments, echinoid spines, mollusks and Balanus sp.; very loosely to loosely cemented in places.	20	135 - 155
Sandstone, light-olive-gray (5 Y 5/2), very pale orange (10 YR 8/2), and grayish-orange (10 YR 7/4); quartzose, medium to very fine grained, well to moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals, very fine grained, angular to rounded; about 20 to 25 percent shell fragments; about 15 percent micritic matrix; root casts or burrows; very loosely to moderately cemented.	5	155 - 160
Sandstone, light-olive-gray (5 Y 5/2); quartzose, medium to very fine grained, well sorted (very fine), angular to rounded; about 20 percent heavy minerals, very fine grained, angular to rounded; about 25 percent shell fragments, mollusks and foraminifers, Globigerina sp.; about 5 to 10 percent poorly washed sparite matrix; very loosely to moderately cemented; interbedded with sand at 165 to 168.5 feet, quartzose, medium to very fine grained, well sorted (very fine), angular to rounded; about 20 percent heavy minerals, very fine grained, angular to rounded; about 25 percent shell fragments.	10	160 - 170
Sand as above; interbedded with about 3 to 5 percent sandstone as above; about 20 percent shell fragments.	5	170 - 175
Sand, dusky-yellow (5 Y 6/4); quartzose, very fine grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals, very fine grained, subrounded; about 15 percent micrite, not cemented.	5	175 - 180
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subrounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded; about 10 percent clay-size particles; about 30 percent detrital carbonate and foraminiferal skeletals.		180 - 185
Silt, light-olive-gray (5 Y 5/2) to yellowish-gray (5 Y 7/2); about 30 to 35 percent sand as above; about 15 to 30 percent clayey micrite, not cemented; about 10 percent shell fragments.	15	185 - 200

Lithologic Log of Well G-3322

Description	Thick- ness (feet)	Depth, feet below land surface
Fill and soil.	10	0 - 10
Limestone, very pale orange (10 YR 8/2), light-olive-gray (5 Y 6/1), and moderate-yellowish-brown (10 YR 5/4); sparse oosparite, benthic foraminifers; neomorphic and cavity-filling calcite; well cemented; very porous, vugs and channels.	2	10 - 12
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and light-olive-gray (5 Y 4/1); sparse oosparite, bryozoans, mollusks and benthic foraminifers, Archais sp.; well cemented; porous to very porous, vugs.	2	12 - 14
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and moderate-yellowish-brown (10 YR 5/6); unsorted to sandy, unsorted biosparite at 15.5 to 16 feet, abundant benthic foraminifers, Archais sp. and Nonion sp., and mollusks; about 25 percent quartz, coarse to fine grained, well sorted (medium), subangular to rounded; about 10 to 15 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), subrounded to rounded; well cemented; moderately porous to porous, vugs.	2	14 - 16
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and grayish-orange-pink (10 R 8/2) to moderate-reddish-brown (10 R 4/6); sandy, sparse biomicrite, mollusks, Archais sp., and algae; about 35 to 40 percent quartz to 10 percent in places, very coarse to fine grained, moderately sorted (fine), subangular to rounded; well cemented; slightly to moderately porous, vugs.	2	16 - 18
Limestone as above; grades to a sandstone in places, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, very coarse to very fine grained, moderately (fine) to poorly sorted, angular to rounded; about 5 percent heavy minerals and phosphorite, very fine grained, subangular to rounded; about 15 to 20 percent sparite matrix; well cemented; porous, vugs; interbedded with sandy micrite, not cemented.	2	18 - 20
Sandstone as above; very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and dark-yellowish-brown (10 YR 4/2); poorly sorted; about 3 to 5 percent heavy minerals, ferrous minerals, and phosphorite; about 20 to 45 percent sparite matrix; about 30 percent casts and molds and shell fragments; well cemented; porous, vugs, moldic, and interparticle; interbedded with about 30 percent sand, very pale orange (10 YR 8/2).	2	20 - 22
Sand as above; interbedded with about 35 to 40 percent sandstone as above.	2	22 - 24

Description	Thick- ness (feet)	Depth, feed below land surface
Sand, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), yellowish-gray (5 Y 7/2), and grayish-orange (10 YR 7/4) at 26 to 28 feet; quartzose, coarse to fine grained, moderately to well sorted (fine), angular to subrounded; about 1 to 5 percent heavy minerals, ferrous minerals, and phosphorite, very fine grained, subangular to rounded.	13	24 - 37
Sand, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, very fine grained, subangular to rounded; about 1 percent muscovite; about 1 percent shell fragments.	3	37 - 40
Sand, white (N 9); quartzose, fine grained, angular to subangular; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), subangular to rounded; about 5 to 10 percent shell fragments.	4	40 - 44
Sand, very pale orange (10 YR 8/2); quartzose, coarse to fine grained, well sorted (fine), angular to subrounded; about 15 to 20 percent shell fragments; about 5 to 10 percent micrite, not cemented at 47 to 48.5 feet.	4.5	44 - 48.5
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, fine grained, angular to subangular; about 5 to 15 percent heavy minerals, ferrous minerals, and phosphorite, very fine grained, subangular to rounded; about 15 percent shell fragments; well cemented; concretionary; moderately porous to porous at 50 to 54 feet, vugs.	5.5	48.5 - 54
Sand, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, fine grained, angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; about 5 percent shell fragments; interbedded with about 30 percent sandstone as above; about 1 to 3 percent phosphorite pebbles that are embedded in the matrix.	3	54 - 57
Sand, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); quartzose, fine grained, angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; interbedded with sandstone as above at 60 to 64 feet; about 10 percent ferrous minerals.	7	57 - 64
Sand as above; quartzose, fine grained to silt; about 20 percent heavy minerals and phosphorite; interbedded with about 15 to 30 percent sandstone; concretionary at 72.5 to 73.5 feet.	10	64 - 74

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; about 3 percent shell fragments; interbedded with about 10 to 20 percent sandstone as above.	6	74 - 80
Sand as above; about 5 to 10 percent shell fragments, mollusks including Pecten sp.; about 20 to 25 percent heavy minerals and phosphorite; interbedded with about 10 to 30 percent sandstone as above.	10	80 - 90
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, poorly washed sparse biosparite, mollusks including Pecten sp. and Ostrea sp.; about 35 to 40 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to rounded; about 10 percent heavy minerals, ferrous minerals, and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to rounded; moderately to well cemented; porous to very porous, moldic, interparticle, and vugs.	7	90 - 97
Sandstone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4) and yellowish-gray (5 Y 8/1); quartzose, very coarse to fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent ferrous minerals, heavy minerals, and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; about 20 to 30 percent shell fragments, Pecten sp., Ostrea sp., and Balanus sp.; about 15 to 35 percent sparite matrix; is a limestone in places; sandy, sparse biosparite; loosely to well cemented; porous to very porous, moldic (large), interparticle, and vugs.	10	97 - 107
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to fine grained, moderately to well sorted (medium); angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (very fine), subrounded to rounded; about 15 percent shell fragments, mollusks and echinoid spines; loosely cemented in places.	3	107 - 110
Sandstone as in 97 to 107 feet; about 10 percent shell fragments; interbedded with about 40 percent sand as above.	4	110 - 114
Sand as above; interbedded with sandstone at 115.5 to 117 feet, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, moderately sorted (medium), angular to rounded; about 15 percent heavy minerals, ferrous minerals, and phosphorite, fine to very fine grained, subrounded to well rounded; about 10 percent shell fragments, mollusks and Balanus sp.; loosely to well cemented; porous, vugs.	3	114 - 117

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; quartz is moderately to well sorted (fine); about 10 percent heavy minerals, phosphorite, and ferrous minerals; about 15 to 20 percent shell fragments, Pecten sp. and Balanus sp.; loosely to well cemented; interbedded with about 30 percent sand as above.	3	117 - 120
Sand as above; quartz is moderately sorted (fine); about 10 percent heavy minerals and phosphorite; about 25 to 30 percent shell fragments, mollusks, <u>Balanus</u> sp., and echinoid spines; cemented in places.	7	120 - 127
Sand, very pale orange (10 YR 8/2); quartzose, coarse to fine grained, well sorted (medium), subangular to subrounded; about 5 to 10 percent heavy minerals, medium to very fine grained, well sorted (fine), angular to well rounded; about 25 percent shell fragments, mollusks, bryozoans, well preserved echinoid spines, and Balanus sp.; loosely cemented in places.	3	127 - 130
Sand as in 107 to 110 feet; about 10 percent pyrite, ferrous minerals, phosphorite, and heavy minerals; about 40 percent shell fragments, pelecypods, Peccent sp. , Balanus sp. , and echinoid spines; cemented in places.	4	130 - 134
Shells and shell fragments, mollusks including <u>Turritella</u> sp. and <u>Pecten</u> sp.; about 45 to 50 percent micritic sand as above.	3	134 - 137
Shells and shell fragments as above; about 25 to 35 percent quartz, coarse to fine grained, poorly sorted, angular to rounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subrounded to well rounded; about 5 percent RF at 140 to 144 feet.	7	137 - 144
Sandstone, yellowish-gray (5 Y 7/2); quartzose, very coarse grained to silt, poorly sorted, angular to well rounded; about 10 percent heavy minerals and phosphorite, very coarse to very fine grained, poorly sorted, subrounded to well rounded; about 25 to 30 percent shell fragments, mollusks; about 25 percent micritic matrix; is a limestone in places; loosely to well cemented.	3	144 - 147
Sandstone, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, moderately sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subrounded to well rounded; about 30 to 35 percent shell fragments, <u>Turritella</u> sp. and other mollusks; about 20 percent micritic matrix; is a limestone in places; loosely to well cemented; moderately porous.	3	147 - 150

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals, phosphorite, and ferrous minerals, medium to very fine grained, well sorted (fine), subrounded to well rounded; about 35 to 40 percent shell fragments; about 15 to 20 percent sparite matrix; loosely to well cemented; porous, interparticle and moldic; interbedded with cavity-filling detritus sand.	4	150 - 154
Limestone, yellowish-gray (5 Y 8/1); sandy, packed poorly washed biosparite, mollusks, coquinoid texture; about 30 to 35 percent quartz, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), subrounded to well rounded; loosely to well cemented; porous, moldic and interparticle.	6	154 - 160
Sand, yellowish-gray (5 Y 8/1); quartzose, pebbles to very fine grained, poorly sorted, subangular to well rounded; about 15 percent heavy minerals and phosphorite, pebbles to very fine grained, poorly sorted, subrounded to well rounded; about 35 percent shell fragments, mollusks; loosely cemented in places.	7	160 - 167
Sand, yellowish-gray (5 Y 8/1); quartzose, granules to fine grained, moderately sorted (fine), subangular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (fine), subrounded to well rounded; about 25 percent shell fragments, mollusks; about 15 percent RF, copper minerals.	3	167 - 170
Sand, yellowish-gray (5 Y 8/1) and light-olive-gray (5 Y 6/1); quartzose, granules to fine grained, poorly sorted, angular to rounded; about 20 percent heavy minerals and phosphorite, granules to very fine grained, moderately (fine) to poorly sorted, subrounded to well rounded; about 25 percent shell fragments; wood chips.	4	170 - 174
Sandstone, light-olive-gray (5 Y 5/2); quartzose, granules to fine grained, poorly to moderately sorted and well sorted (fine) toward base, angular to rounded; about 20 percent heavy minerals and phosphorite, granules to fine grained, poorly to moderately sorted, subangular to well rounded; concretionary; root casts or burrows; moderately to well cemented; interbedded with about 20 percent sand, quartzose, granules to fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; about 20 percent shell fragments to 40 percent at 177 to 180 feet, mollusks and shark teeth.	6	174 - 180

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as above; yellowish-gray (5 Y 8/1); about 10 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 5 to 10 percent muscovite; about 5 to 10 percent shell fragments.	4	180 - 184
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 5 to 10 percent muscovite; cemented in places at 190 to 194 feet.	10	184 - 194
Sand as above; interbedded with about 5 to 20 percent clayey silt- stone laminae, olive-gray (5 Y 4/1); abundant foraminifers.	6	194 - 200
Sand as in 184 to 194 feet; quartzose, fine grained to silt, well sorted (very fine), angular to subangular; interbedded with about 40 percent clayey siltstone as above.	2.5	200 - 202.5
Sandstone, olive-gray (5 Y 4/1); quartzose, fine grained to silt, well sorted (fine), angular; about 10 to 15 percent muscovite; about 20 percent sparite matrix; slightly to moderately porous, vugs.	1.5	202.5 - 204
Sand, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular; about 15 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 10 to 15 percent muscovite.	3	204 - 207
Sand, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (fine), angular; about 15 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; about 10 to 15 percent muscovite; abundant sponge spicules; interbedded with about 20 percent clayey siltstone as in 200 to 202.5 feet; grades to about 20 percent sandy, calcareous siltstone.	3	207 - 210
Siltstone, light-olive-gray (5 Y 5/2); about 35 percent quartz, pebbles to fine grained, well to moderately sorted (fine); about 20 percent sparite matrix; concretionary in places; moderately porous to porous, vugs; interbedded with about 20 to 30 percent sand as above.	4	210 - 214
Sand, yellowish-gray (5 Y 7/2); quartzose, coarse grained to silt, well sorted (fine), angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, fine grained, subrounded to well rounded; about 5 to 10 percent muscovite.	6	214 - 220

Lithologic Log of Well G-3323

Description	Thick- ness (feet)	Depth, feet below land surface
Fill.	8	0 - 8
Limestone, very pale orange (10 YR 8/2) to medium-dark-gray (N 4); oolitic poorly washed intrasparite; well cemented; very porous, vugs.	2	8 - 10
Limestone, very pale orange (10 YR 8/2) to medium-dark-gray (N 4); intraclastic sparse oosparite, mollusks, Archais sp. and burrows; well cemented; porous, vugs and moldic.	2	10 - 12
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sparse poorly washed oosparite; well cemented; porous to very porous, vugs.	4	12 - 16
Limestone, very pale orange (10 YR 8/2); intraclastic sparse poorly washed oosparite, mollusks and <u>Archais</u> sp.; well cemented; porous, vugs.	2	16 - 18
Limestone, very pale orange (10 YR 8/2); sparse poorly washed oospar- ite to sparse oosparite toward base, <u>Chione</u> sp. and other mollusks; well to very well cemented; moderately porous to porous, moldic, interparticle, and vugs.	4	18 - 22
Limestone, very pale orange (10 YR 8/2); sparse poorly washed bio- sparite, large mollusks; neomorphic calcite is present; well cemented; porous, moldic and vugs.	4	22 - 26
Limestone as above; grades to a packed poorly washed biosparite toward base.	2	26 - 28
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and pale-yellowish-brown (10 YR 6/2); freshwater and marine lime-stone; interfingering with a sandy, packed poorly washed biosparite, Chione sp. and Helisoma sp.; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), subangular to rounded; well cemented; porous, moldic and vugs.	2	28 - 30.
Limestone as above; abundant freshwater gastropods, Helisoma sp.	1	30 - 31

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, pale-yellowish-brown (10 YR 6/2); sandy, sparse biosparite, Helisoma sp. and Archais sp.; about 5 to 10 percent quartz, medium to fine grained, well sorted (fine), subangular to rounded; well cemented; moderately porous to porous, moldic; interfingering with a sandy, packed biosparite, Chione sp. and other mollusks, and abundant Archais sp.; about 25 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; very well cemented; slightly to moderately porous, moldic and vugs.	1	31 - 32
Limestone, very pale orange (10 YR 8/2); sandy, sparse biosparite, Chione sp. and other mollusks; about 20 percent quartz, fine to very fine grained, well sorted (fine), angular to subrounded; about 3 percent heavy minerals, very fine grained, angular; very well cemented; moderately porous, moldic; interfingering with a sandy, sparse poorly washed biosparite, Archais sp. and freshwater and marine water mollusks; very well cemented; virtually nonporous.	2	32 - 34
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, mollusks including Chione sp. and Archais sp.; about 20 to 30 percent quartz, coarse to fine grained, moderately sorted (medium), subangular to rounded; about 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to rounded; well to very well cemented; slightly to moderately porous at 34 to 36 feet and porous toward base, moldic and vugs.	6	34 - 40
Limestone, yellowish-gray (5 Y 8/1); sandy, packed poorly washed biosparite, mollusks; about 30 to 40 percent quartz, medium to very fine grained, well sorted (very fine), angular to rounded; about 10 to 15 percent heavy minerals, very fine grained, subangular to rounded; well cemented; moldic and vugs.	7	40 - 47
Sandstone, yellowish-gray (5 Y 7/2) to dusky-yellow (5 Y 6/4); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 20 to 30 percent shell fragments, mollusks and Balanus sp.; about 15 percent sparite matrix; concretionary in places; well cemented; porous, vugs and interparticle.	7	47 - 54

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, dusky-yellow (5 Y 6/4); sandy, packed biosparite, mollusks, almost a coquina; about 20 to 25 percent quartz, medium to very fine grained, well sorted (fine), angular to rounded; about 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 10 percent sparite matrix; well cemented; porous to very porous, vugs and interparticle.		54 - 57
Sandstone, dusky-yellow (5 Y 6/4) and light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (very fine); about 10 to 15 percent heavy minerals, ferrous minerals, and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 25 percent shells and shell fragments; about 20 percent sparite matrix; concretionary in places; well cemented; porous, vugs and moldic.	10	57 - 67
Sandstone as above; about 20 to 25 percent heavy minerals, ferrous minerals, and phosphorite; about 20 percent shells and shell fragments, mollusks and <u>Balanus</u> sp.; interbedded with about 20 percent sand, quartzose, coarse to very fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals, ferrous minerals, and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 25 percent shell fragments, mollusks.	4	67 - 71
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular about 20 to 25 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 15 to 30 percent (toward base) shells and shell fragments, mollusks including Turritella sp. and large pelecypods; about 3 to 5 percent micrite, not cemented.	9	71 - 80
Sand as above; about 40 to 45 percent shell fragments, serpulids, <u>Turritella</u> sp., <u>Ostrea</u> sp., <u>Pecten</u> sp., and other mollusks; about 10 to 15 percent micrite, not cemented.	4	80 - 84
Sand as above; quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 35 percent shell fragments toward base.	7.5	84 - 91.5

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, serpulids, <u>Turritella</u> sp., <u>Ostrea</u> sp., <u>Pecten</u> sp., and other mollusks; phosphatized bone fragments; about 20 percent sand as above, quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 to 15 percent heavy minerals and phosphorite; about 10 to 15 percent sandy micrite, not cemented toward base.	6.5	91.5 - 97
Limestone, light-olive-gray (5 Y 6/1); sandy, packed biomicrite, mollusks and echinoid spines; about 35 percent quartz, medium grained to silt, moderately sorted (fine), angular to rounded; about 15 percent heavy minerals, fine to very fine grained, subangular to rounded; loosely to moderately cemented; slightly porous, interparticle.	6.5	97 - 103.5
Sand, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular to subangular; about 15 percent heavy minerals, very fine grained, angular to rounded; about 15 percent very small shell fragments; about 20 to 30 percent micrite, not cemented.	4	103.5 - 107.5
Sand as above; about 40 to 45 percent shells and shell fragments.	2.5	107.5 - 110
Sand as above; about 30 percent shell fragments; about 15 to 20 percent micrite, not cemented.	4	110 - 114
Sand, light-olive-gray (5 Y 6/1); quartzose, very fine grained to silt, well sorted (very fine), angular to subangular; about 10 percent heavy minerals, very fine grained, angular to subrounded; about 10 to 15 percent small shell fragments at 117 to 120 feet; about 30 percent micrite, not cemented.	6	114 - 120
Silt, light-olive-gray (5 Y 6/1); about 20 to 30 percent quartz, very fine grained, angular to subangular; about 10 percent heavy minerals, very fine grained, angular to subrounded; about 5 percent shell fragments; about 30 percent micrite, not cemented.	4	120 - 124
Silt as above; about 20 percent heavy minerals and phosphorite, fine to very fine grained, angular to rounded; about 10 to 15 percent shell fragments; about 10 percent micrite, not cemented.	22. 5	124 - 146.5
Sandstone, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, moderately sorted (fine), angular to rounded; about 10 percent heavy minerals and phosphorite, very fine grained, angular to well rounded; about 25 percent shell fragments; about 20 percent sparite matrix; well cemented; porous, moldic and vugs.	0.5	146.5 - 147

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, light-gray (N 7) to light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (fine), angular to rounded; about 25 percent heavy minerals and phosphorite, very fine grained, angular to well rounded; about 30 percent shell fragments and casts and molds, <u>Turritella</u> sp. and <u>Pecten</u> sp.; about 20 percent poorly washed sparite matrix; well cemented; porous, moldic.	3	147 - 150
Sandstone as above; about 30 to 40 percent sparite matrix; well cemented.	4	150 - 154
Sandstone as in 147 to 150 feet.	3	154 - 157
Sandstone as above; quartzose, coarse to fine grained, angular to rounded; mantaray teeth; loosely to well cemented.	3	157 - 160
Sand, light-gray (N 7); quartzose, coarse to fine grained, moderately sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), angular to well rounded; about 25 percent shell fragments; loosely cemented in places.	4	160 - 164
Sandstone, light-gray (N 7) to light-olive-gray (5 Y 6/1); quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 25 to 30 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), angular to rounded; about 20 percent shell fragments; about 20 to 30 percent poorly washed sparite; loosely to well cemented; porous, moldic.	6	164 - 170
Sand, very light gray (N 8); quartzose, coarse to fine grained, moderately sorted (fine), angular to well rounded; about 20 to 25 percent heavy minerals and phosphorite, granules to very fine grained, poorly sorted, angular to well rounded; about 10 percent shell fragments; interbedded with about 20 percent sandy silt at 174 to 177 feet, light-olive-brown (5 Y 5/6).	10	170 - 180
Sand, light-olive-gray (5 Y 6/1); quartzose, very coarse to fine grained, well sorted (fine), angular to rounded; about 20 percent heavy minerals and phosphorite, granules to fine grained, moderately sorted (fine), subangular to subrounded; about 5 percent muscovite; interbedded with thin layers of siltstone, light-olive-gray (5 Y 5/2); clayey; shark teeth; moderately cemented; virtually nonporous.	4	180 - 184

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, very light gray (N 8); quartzose, coarse to fine grained, well sorted (fine), angular to well rounded; about 15 percent heavy minerals and phosphorite, pebbles to very fine grained, well sorted (fine), angular to well rounded; about 5 percent muscovite; interbedded with about 20 percent sandy silt; shark teeth; about 5 to 10 percent muscovite.	3	184 - 187
Sand, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (fine), angular to subrounded; about 15 percent heavy minerals and phosphorite, fine grained, angular to subrounded; about 15 percent muscovite; about 5 percent sandy silt; about 5 percent shell fragments.	3	187 - 190
Sand as above; heavy minerals and phosphorite, medium to very fine grained, poorly sorted, subangular to rounded; about 20 percent sandy silt.	4	190 - 194
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, poorly sorted, angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (medium), subrounded to rounded; about 5 percent muscovite.	6	194 - 200
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, moderately to well sorted (medium), angular to well rounded; about 20 percent heavy minerals, coarse to medium grained, well sorted (medium), rounded to well rounded; interbedded with about 20 percent silty, calcareous sandstone to 5 percent toward base; about 5 percent shell fragments.	7	200 - 207
Sand as above; quartzose, coarse grained to silt, poorly sorted, angular to well rounded; about 15 percent heavy minerals and phosphorite.	3	207 - 210
Sand as above; quartzose, very coarse to fine grained, moderately to well sorted (medium), angular to well rounded; interbedded with shelly sandstone at 210 to 210.5 feet and 213 to 214 feet; quartzose, very coarse to fine grained, moderately sorted (medium), angular to well rounded; about 15 percent heavy minerals and phosphorite, well sorted (medium), rounded to well rounded; about 20 percent sparite matrix; about 30 percent shell fragments; well cemented.	4.5	210 - 214.5

Lat 25°19'02", long 80°31'24" Sec. 3, T. 59 S., R. 38 E.

Description	Thick- ness (feet)	below land
Sand as above; about 20 to 25 percent heavy minerals and phosphorite, granules to medium grained, moderately sorted to well sorted (medium), subrounded to well rounded; about 10 percent shell fragments, mollusks and shark teeth.	1	214.5 - 215.5
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartz-ose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 percent heavy minerals and phosphorite, very fine grained, subrounded to rounded; about 10 percent muscovite; about 10 percent micrite, not cemented.	1.5	215.5 - 217
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, moderately sorted (silt), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium grained to very fine grained, well sorted (very fine), angular to rounded; about 5 percent micrite, not cemented.	3	217 - 220

Lithologic Log of Well G-3324

Description	Thick- ness (feet)	Depth, feet below land surface
Fill; interbedded with soil at 4 to 8 feet.	8	0 - 8
Limestone, very pale orange (10 YR 8/2), moderate-reddish-brown (10 R 4/6), and moderate-yellowish-brown (10 YR 5/4); intraclastic sparse poorly washed oosparite, mollusks; highly weathered and in contact with a calcrete crust; well to very well cemented; very porous, vugs, pores are outlined with cavity-filling calcite crystal; interbedded with soil.	4	8 - 12
Limestone, very pale orange (10 YR 8/2) and medium-light-gray (N 6); sandy, sparse oosparite, mollusks; about 10 percent heavy minerals, medium to very fine grained, moderately sorted (fine), subrounded to well rounded; well to very well cemented; porous, vugs.	2	12 - 14
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and moderate-brown (5 YR 4/4); sparse oosparite, mollusks and Archais sp.; ferrous stained; well cemented; very porous, vugs and moldic.	4	14 - 18
Limestone as above; very pale orange (10 YR 8/2) to pale-yellowish-orange (10 YR 8/6); grading to a sandy, sparse oosparite, very pale orange (10 YR 8/2) and grayish-black (N 2); about 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; the grayish-black color is due to replacement by a dark-colored mineral, possibly by a sulfide mineral; well cemented; slightly to moderately porous.	2	18 - 20
Limestone, very pale orange (10 YR 8/2); sparse oosparite, Archais sp. and mollusks; about 5 percent ferrous minerals, fine grained, subangular to subrounded; well cemented; very porous, moldic and vugs.	2	20 - 22
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and dark-yellowish-orange (10 YR 6/6); sandy, oolite-bearing sparse to packed intrasparite, corals, mollusks and bryozoans; ferrous stained; about 25 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent heavy minerals, very fine grained, angular to subrounded; well cemented; very porous, moldic, interparticle, framework, and vugs.	3	22 - 25
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse poorly washed biosparite, mollusks; about 25 to 30 percent quartz, medium to fine grained, well sorted (fine), subangular to rounded; very well cemented; slightly to moderately porous, vugs and moldic.	1	25 - 26

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone as above; light-brown (5 YR 6/4) and grayish-yellow (5 Y 8/4); sparse poorly washed biosparite, Chione sp., Turritella sp., and other mollusks and Archais sp.; about 5 percent heavy minerals and ferrous minerals, very fine grained, subangular to subrounded; very well cemented; slightly to moderately porous and moderately porous to porous at 30 to 32 feet, moldic and vugs.	6	26 - 32
Limestone, very pale orange (10 YR 8/2), yellowish-gray (5 Y 7/2), grayish-orange (10 YR 7/4), and light-olive-gray (5 Y 5/2); intraclastic sparse poorly washed biosparite, mollusks; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous, moldic and vugs.	2	32 - 34
Limestone, light-olive-gray (5 Y 5/2), light-gray (N 7), and grayish-orange (10 YR 7/4); intraclastic sparse biosparite, <u>Helisoma</u> sp.; ferrous stained; grades to a sandy, sparse biosparite, <u>Archais</u> sp.; about 10 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 3 to 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous, moldic and vugs.		34 - 36
Limestone, yellowish-gray (5 Y 7/2), light-olive-gray (5 Y 6/1), and very pale orange (10 YR 8/2); sandy, intraclastic sparse biosparite, bryozoans, Turritella sp., and Archais sp.; about 20 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; well cemented; porous, moldic and vugs.	2	36 - 38
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, mollusks including freshwater gastropods and Archais sp.; about 25 to 30 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 10 percent heavy minerals, collophane, and ferrous minerals, fine to very fine grained, well sorted (very fine), subrounded to well rounded; well cemented; slightly to moderately porous, moldic and small vugs.	2	38 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse poorly washed biosparite, Chione sp. and other mollusks; about 30 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 15 percent heavy minerals, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (very fine), subrounded to well rounded; moderately to well cemented; slightly to moderately porous and moderately porous to porous at 44 to 48 feet, moldic and vugs.	8	40 - 48
Limestone as above; grades to a sandstone in places; about 15 to 20 percent heavy minerals, collophane, and phosphorite.	2	48 - 50
Sandstone, yellowish-gray (5 Y 8/1); quartzose, fine to very fine grained, well sorted (very fine), subangular to rounded; about 10 to 15 percent heavy minerals, collophane, phosphorite, and ferrous minerals, fine to very fine grained, well sorted (fine), subrounded to well rounded; about 30 percent shells and shell fragments, Montastrea sp. and mollusks including Chione sp.; about 10 percent sparite matrix; grades to a sandy limestone as above in places; well cemented; porous, vugs and moldic.	2	50 - 52
Limestone, yellowish-gray (5 Y 8/1 and 5 Y 7/2); sandy, sparse biosparite, corals, Archais sp., and mollusks including Chione sp.; about 30 percent quartz, medium to very fine grained, well sorted (very fine), angular to rounded; about 10 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (very fine), subrounded to well rounded; is in contact with sandstone that occurs as cavity-filling material; quartzose as in limestone, angular to rounded; about 15 percent heavy minerals and ferrous minerals as in limestone; about 10 to 20 percent sparite matrix; well cemented; porous, moldic and vugs.	2	52 - 54
Limestone as above; about 30 to 35 percent quartz, coarse to very fine grained, moderately sorted (fine), subangular to rounded; moderately porous to porous, moldic, vugs, and framework.	2	54 - 56
Limestone as above; very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), and dark-yellowish-orange (10 YR 6/6); grades to a sandy, packed sorted biosparite, mollusks; moderately porous to porous, moldic and vugs.	2	56 - 58

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), light-olive-brown (5 Y 5/6), and light-olive-gray (5 Y 5/2); sandy, sparse to sandy, packed poorly washed biosparite, bryozoans and mollusks; about 25 to 30 percent quartz, coarse to fine grained, well sorted (fine), subrounded to rounded; about 10 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to well rounded; large calcite crystals in matrix; well cemented; moderately porous to porous, vugs and moldic.	2	58 - 60
Limestone as above; about 35 percent quartz; about 15 percent heavy minerals and ferrous minerals; porous, vugs; interbedded with about 20 percent sand, quartzose, coarse to very fine grained, well sorted (fine), subrounded to rounded; about 15 percent heavy minerals and ferrous minerals, medium to very fine grained, well sorted (fine), subangular to well rounded.	2	60 - 62
Limestone as above; yellowish-gray (5 Y 8/1), dusky-yellow (5 Y 6/4), and grayish-orange (10 YR 7/4); about 35 to 40 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent heavy minerals, collophane, and phosphorite, very fine grained, subangular to well rounded; porous, vugs and moldic; interbedded with about 30 percent sand, quartzose, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, very fine grained, subangular to well rounded.	2	62 - 64
Limestone, yellowish-gray (5 Y 8/1), grayish-yellow (5 Y 8/4), and dusky-yellow (5 Y 6/4); sandy, packed biosparite and sandy sparite in localized areas, Ostrea sp. and other mollusks; about 20 to 30 percent quartz, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, very fine grained, subangular to well rounded; well to very well cemented; porous, interparticle and vugs; interbedded with about 20 percent sand, quartzose, medium to very fine grained, well sorted (fine), subangular to rounded; about 5 to 10 percent heavy minerals and ferrous minerals, very fine grained, subangular to well rounded.	4	64 - 68

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1), grayish-orange (10 YR 7/4), dusky-yellow (5 Y 6/4), to yellowish-gray (5 Y 7/2); quartzose, medium to very fine grained, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals, collophane and ferrous minerals, very fine grained, subangular to well rounded; about 30 to 35 percent shell fragments, Ostrea sp. and other mollusks; about 25 to 30 percent sparite matrix; is a limestone in places; sandy, sparse biosparite; well cemented; porous, vugs and interparticle; interbedded with about 30 percent sand, quartzose, medium to very fine grained, well sorted (fine), subangular to subrounded; about 10 to 15 percent heavy minerals, collophane, and ferrous minerals, very fine grained, subangular to well rounded.	2	68 - 70
Sandstone as above; about 20 to 25 percent shell fragments; very well cemented; very porous, vugs and interparticle; interbedded with about 10 to 20 percent sand as above.	2	70 - 72
Sandstone, dusky-yellow (5 Y 6/4), grayish-orange (10 YR 7/4), and dark-yellowish-orange (10 YR 6/6); quartzose, medium to very fine grained, well sorted (very fine), angular to subrounded; about 15 to 20 percent heavy minerals and ferrous minerals, very fine grained, subangular to rounded; about 5 to 10 percent shell fragments to 25 percent in places; about 20 percent sparite matrix; interbedded with about 40 percent sand as above; about 10 percent shell fragments.		72 - 74
Sandstone as above, olive-gray (5 Y 4/1); about 15 to 20 percent heavy minerals, fine to very fine grained, well sorted (very fine), subrounded to well rounded; about 25 to 30 percent shell fragments, Turritella sp., Olivella sp., and Pecten sp.; about 20 percent poorly washed sparite matrix; moderately to well cemented; moderately porous to porous, moldic and vugs.	2	74 - 76
Limestone, light-olive-gray (5 Y 5/2); sandy, packed biomicrite, mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent heavy minerals, fine to very fine grained, subrounded to well rounded; loosely cemented; interbedded with about 40 percent limestone to 20 percent toward base, dark-gray (N 3); sandy, sparse biosparite, mollusks; about 25 to 30 percent quartz, medium to very fine grained, well sorted (very fine), angular to subrounded; moderately to well cemented.	4	76 - 80

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, well sorted (very fine), angular to rounded; about 25 to 30 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), angular to well rounded; about 30 percent shell fragments, scaphopods, <u>Turritella</u> sp., <u>Pecten</u> sp. and other mollusks; wood chips; cemented into a sandstone and concretionary sandstone in places.	4	80 - 84
Sand as in 80 to 82 feet; about 10 percent heavy minerals, very fine grained, subangular to well rounded; about 25 to 30 percent shell fragments and detrital carbonate; cemented into a sandstone at 85 to 85.5 feet.	2	84 - 86
Sandstone as above; about 20 to 25 percent shells and shell fragments; about 20 percent micritic matrix; moderately to well cemented; slightly porous, small vugs.	2	86 - 88
Sand as in 84 to 86 feet; interbedded with sandstone as above; well cemented.	4	88 - 92
Sand, light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, moderately sorted (very fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to subrounded; about 15 to 20 percent shell fragments; interbedded with about 10 to 20 percent sandstone at 93 to 94 feet, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 percent heavy minerals, fine grained, angular to rounded; about 5 to 10 percent shell fragments; about 20 percent sparite matrix; concretionary in places.	2	92 - 94
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to rounded; about 20 percent micrite, not cemented; about 10 percent shell fragments.	6	94 - 100
Sandstone, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to rounded; about 20 to 30 percent shell fragments, Balanus sp. (large) and small mollusks; about 15 to 20 percent micritic matrix; is a limestone in places; moderately to well cemented; virtually nonporous.	4	100 - 104
Sandstone as above; very loosely to loosely cemented.	6	104 - 110

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone as above; root casts or burrows; fauna includes Pecten sp.; ; about 15 percent poorly washed sparite; well cemented; virtually nonporous to very slightly porous.	2	110 - 112
Sandstone as above; loosely to well cemented.	2	112 - 114
Sandstone as above; moderately to well cemented; slightly porous, vugs.	6	114 - 120
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to rounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular to rounded; about 20 percent shell fragments; about 15 to 20 percent micrite, not cemented; loosely to moderately cemented into a sandstone at 122 to 124 feet and 126 to 127 feet.	7	120 - 127
Sand as above; quartzose, fine grained to silt, well sorted (fine), angular to rounded; decrease in silt; about 20 percent heavy minerals; about 30 percent micrite, not cemented; about 5 to 10 percent shell fragments.	3	127 - 130
Sand as above; siltier.	4	130 - 134
Silt, light-olive-gray (5 Y 6/1); about 30 percent sand as above; quartz is well sorted (very fine); about 20 to 30 percent micrite, not cemented.	6	134 - 140
Silt as above; light-olive-gray (5 Y 5/2); about 20 percent sand as above.	4	140 - 144
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, moderately sorted (very fine), angular to subrounded; about 25 to 30 percent heavy minerals, very fine grained, subrounded to rounded; about 20 percent shells and shell fragments; about 15 to 20 percent poorly washed sparite matrix; loosely to well cemented; slightly porous, moldic and small vugs.	3	144 - 147
Sandstone, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartzose, medium to very fine grained, moderately sorted (fine), angular to rounded; about 15 percent heavy minerals, fine to very fine grained, well sorted (very fine), subangular to rounded; about 30 percent casts and molds and shell fragments, Pecten sp., Turritella sp., and other mollusks; about 10 to 40 percent micritic matrix; grades to a sandy limestone in places; moderately to well cemented; moderately porous, moldic.	3	147 - 150

Description	Thick- ness (feet)	Depth, feet below land surface
Sandstone, yellowish-gray (5 Y 8/1), light-gray (N 7), and medium-light-gray (N 6); quartzose, coarse to very fine grained, moderately to well sorted (fine), subangular to rounded; about 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (very fine), subangular to rounded; about 5 to 10 percent micritic matrix; loosely to well cemented; slightly porous.	4	150 - 154
Sandstone as above; about 30 to 35 percent large shell fragments; about 20 to 30 percent micritic matrix; very loosely to moderately cemented.	6	. 154 - 160
Sand, medium-light-gray (N 6) to light-gray (N 7); quartzose, very coarse to very fine grained, moderately sorted (fine), angular to well rounded; about 25 percent heavy minerals, granules to very fine grained, poorly sorted, subangular to well rounded; about 30 to 35 percent shell fragments, mollusks; cemented into a sandstone at 163 to 164 feet.	4	160 - 164
Sandstone, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartzose, very fine grained to silt, well sorted (very fine), angular to subrounded; about 25 percent heavy minerals, very fine grained, subangular to well rounded; about 5 percent shell fragments; about 1 to 3 percent micritic matrix; loosely to moderately cemented; virtually nonporous to very slightly porous.	3	164 - 167
Siltstone, light-olive-gray (5 Y 5/2); about 40 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 10 percent heavy minerals, very fine grained, angular to subrounded; about 1 to 3 percent micritic matrix.	3	167 - 170
Sand, yellowish-gray (5 Y 7/2); quartzose, fine grained to silt, well sorted (very fine), angular to subrounded; about 10 percent heavy minerals, medium to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent shell fragments, echinoid spines, sponge spicules and mollusks; about 30 percent micrite, not cemented.	4	170 - 174
Sandstone, yellowish-gray (5 Y 7/2); quartzose, medium grained to silt, well sorted (very fine), angular to subrounded; about 15 percent heavy minerals, medium to very fine grained, well sorted (very fine), subangular to well rounded; about 10 percent poorly washed matrix; about 35 to 40 percent casts and molds; moderately to well cemented toward base; moderately porous, moldic.	3	174 - 177

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1) to light-olive-gray (5 Y 6/1); quartz-ose, granules to fine grained, poorly sorted, angular to rounded; about 10 percent phosphorite and heavy minerals, granules to very fine grained, poorly sorted, subangular to well rounded; about 10 percent shell fragments, mollusks; interbedded with about 30 percent limestone; sandy, sparse biomicrite, Turritella sp. and pelecypods; about 40 percent quartz, granules to fine grained, poorly sorted, subangular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately sorted (fine) to poorly sorted, subrounded to well rounded; grades to a sandstone in places; moderately to well cemented; moderately porous to porous, moldic.	3	177 - 180
Sand, very light gray (N 8); quartzose, very coarse to medium grained, moderately sorted (medium); subrounded to well rounded; about 15 percent phosphorite, coarse to fine grained, moderately sorted (medium), subangular to well rounded; about 5 percent shell fragments; about 5 percent RF, sandy limestone.	4	180 - 184
Sand as above; quartzose, very coarse to medium grained, well sorted (medium), subrounded to well rounded; about 1 percent muscovite; about 3 percent RF, sandstone.	3	184 - 187
Sand as above; yellowish-gray (5 Y 8/1) to very light gray (N 8); interbedded with about 3 to 5 percent sandstone toward base; grades into a limestone in places.	13	187 - 200
Sand as above; quartzose, coarse to fine grained, well sorted (medium), subrounded to well rounded; about 15 percent phosphorite and heavy minerals, medium to very fine grained, moderately sorted (medium), subangular to well rounded; about 5 percent muscovite.	20	200 - 220
Sand as above; quartzose, medium to fine grained, well sorted (fine), angular to rounded; about 15 percent phosphorite and heavy minerals, medium to fine grained, well sorted (fine), angular to subrounded; cemented in places into about 3 percent sandstone.	10	220 - 230
Sand as in 200 to 220 feet.	10	230 - 240
Sand as above; interbedded with thin layers of sandstone as above and with about 20 to 30 percent claystone, light-olive-gray (5 Y 5/2); sandy and silty; contains benthic foraminifers; well cemented; virtually nonporous.	10	240 - 250

Description	Thick- ness (feet)	Depth, feet below land surface
Sand as in 220 to 230 feet; interbedded with about 20 percent claystone as above.	10	250 - 260
Sand as above; phosphorite and heavy minerals are medium to very fine grained, well sorted (very fine), angular to subrounded; cemented into about 20 to 30 percent sandstone toward base.	20	260 - 280
Sand and sandstone as above; about 10 percent large shell fragments; interbedded with a sandy, calcareous, clayey siltstone at 280 to 283 feet; abundant foraminifers and sponge spicules.	10	280 - 290
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained, angular to subrounded; about 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to subrounded; about 10 percent muscovite; abundant benthic and planktonic foraminifers.	10	290 - 300
Sand, very light gray (N 8); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 15 to 20 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to subrounded.	10	300 - 310

Lithologic Log of Well G-3344

Lat 25°23'34", long 80°28'01"

	Thick-	Depth, feet
Description	ness	below land
	(feet)	surface

NO LITHOLOGIC LOG

The author obtained the data from field notes and observations that were made during the drilling of the well.

Lithologic Log of Well G-3394

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2), grayish-orange (10 YR 7/4), to dark-grayish-orange (10 YR 6/6); sparse to sandy, sparse poorly washed oosparite to a sparse biosparite in places, bryozoans and mollusks; about 10 to 20 percent quartz, fine grained, angular to rounded; well to very well cemented; slightly to moderately porous, vugs.	4	0 - 4
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse poorly washed oosparite, abundant bryozoans; about 5 to 10 percent ferrous minerals and heavy minerals, fine to very fine grained, well sorted (very fine), angular to subangular; well cemented; porous to very porous, moldic and vugs.	3	4 - 7
Limestone as above; sparse poorly washed oosparite, abundant bryozo- ans; about 3 to 5 percent heavy minerals toward base; very porous, moldic.	1 .	7 - 8
Limestone as in 4 to 7 feet; very pale orange (10 YR 8/2) to yellow-ish-gray (5 Y 7/2) and light-gray (N 7); abundant small pelecypods.	1.5	8 - 9.5
Limestone, very pale orange (10 YR 8/2), medium-light-gray (N 6) to medium-gray (N 5), and moderate-yellowish-brown (10 YR 5/4), mottled; sandy, oolite-bearing sparse poorly washed biosparite, Chione sp. and small pelecypods; about 5 percent quartz, medium to fine grained, well sorted (fine), angular to subrounded; very well cemented; moderately porous, vugs.	0.5	9.5 - 10
Limestone, very pale orange (10 YR 8/2) to grayish-orange (10 YR 7/4); sandy, sparse to sandy, packed poorly washed oosparite, mollusks and benthic foraminifers, Archais sp.; about 10 percent quartz, fine grained, subrounded; about 1 to 3 percent heavy minerals, very fine grained, angular; well cemented; porous to very porous, vugs.	2	10 - 12
Limestone as above; in contact with a sandy, fossiliferous poorly washed intrasparite, grayish-orange (10 YR 7/4), moderate-orange-pink (5 YR 8/4), and light-brown (5 YR 6/4); about 20 percent quartz, medium to fine grained, well sorted (fine), subangular to subrounded; very well cemented; slightly to moderately porous, vugs; grades to a sandy, fossiliferous sparite toward base; slightly porous, moldic.	2	12 - 14

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, yellowish-gray (5 Y 7/2); sparse to packed poorly washed biosparite, abundant benthic foraminifers, Nonion sp. and Archais sp., and small mollusks; well cemented; moderately porous, moldic.	3	14 - 17
Limestone, yellowish-gray (5 Y 7/2) to grayish-orange (10 YR 7/4); sandy, sparse to sandy, packed poorly washed intrasparite, Chione sp. and other mollusks, and benthic foraminifers; clasts are from a freshwater limestone; about 20 to 35 percent quartz, fine to very fine grained, well sorted (very fine), angular to subangular; about 1 to 3 percent heavy minerals, very fine grained, angular; well cemented; porous, vugs and moldic.	3	17 - 20
Limestone, olive-gray (5 Y 4/1); fossiliferous sparite to fossil- iferous poorly washed sparite; very well cemented; slightly to moderately porous, vugs.	1.5	20 - 21.5
Limestone as in 17 to 20 feet; abundant Archais sp. and mollusks; interfingering with an intraclastic sparse biosparite; clasts consist of marine limestone (as in 17 to 20 feet) and of freshwater limestone (as in 20 to 21.5 feet); very well cemented; very slightly porous, moldic and small vugs.	2	21.5 - 23.5
Limestone, yellowish-gray (5 Y 8/1); sandy, sparse biosparite, mollusks; about 10 to 15 percent quartz, fine to very fine grained, well sorted (fine), angular to subangular; very well cemented; slightly to moderately porous, vugs.	25	23.5 - 26
Limestone as above; sandy, packed biosparite in places, Chione sp. and Olivella sp.; about 15 to 20 percent quartz; well to very well cemented; moderately porous, vugs and moldic.	2	26 - 28
Limestone, yellowish-gray (5 Y 8/1); sandy, intraclastic sparse to packed (toward base) biosparite, mollusks; about 30 to 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; interfingers with freshwater limestone at 29.5 to 30 feet, olive-gray (5 Y 4/1); sparse biosparite; very well cemented; slightly to moderately porous, vugs.	2	28 - 30
Limestone, yellowish-gray (5 Y 7/2) to grayish-orange (10 YR 7/4); sandy, packed to sandy, sparse poorly washed biosparite, mollusks; about 30 to 40 percent quartz, very coarse to very fine grained, poorly sorted, angular to rounded; about 3 percent heavy minerals to 10 percent toward base, fine grained, angular; well cemented; moderately porous to porous and slightly to moderately porous toward base, moldic.	4	30 - 34

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, very pale orange (10 YR 8/2); sandy, sparse biomicrite, Chione sp.; about 35 percent quartz, coarse to very fine grained, poorly to moderately sorted (fine), subangular to rounded; about 5 percent heavy minerals, medium to very fine grained, moderately sorted (very fine), subangular to rounded; well cemented; moderately porous to porous, moldic; in contact with a sandstone toward base, light-olive-gray (5 Y 6/1); quartzose, very coarse to very fine grained, poorly sorted to moderately sorted (fine), angular to well rounded; about 5 to 10 percent heavy minerals, very fine grained, angular to subrounded; phosphatized bone fragments; about 5 to 10 percent sparite matrix; well cemented.	1	34 - 35
Sand, pinkish-gray (5 Y 8/1); quartzose, very coarse to fine grained, poorly sorted, angular to well rounded; about 5 percent phosphorite and heavy minerals, very coarse to very fine grained, moderately sorted (very fine), subangular to rounded.	1	35 - 36
Sand as above; cemented in places into about 5 percent sandstone; interbedded with about 30 to 40 percent limestone as in 34 to 35 feet; is a sandy, sparse poorly washed biosparite in places; about 35 percent quartz, pebbles to fine grained, poorly sorted, angular to well rounded; porous to very porous, vugs.	2	36 - 38
Sand as above; quartz is poorly to moderately sorted; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained and medium to very fine grained toward base, well sorted (fine), angular to subrounded; about 3 to 5 percent shell fragments; cemented in places into about 5 percent sandstone; interbedded with about 5 percent limestone at 40 to 45 feet.	. 7	38 - 45
Sand, pinkish-gray (5 YR 8/1); quartzose, coarse to fine grained, well sorted (medium), angular to subrounded; about 5 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), angular to subrounded.	8	45 - 53
Sand as above; about 40 to 45 percent shells and shell fragments, mollusks; cemented in places into about 40 percent shelly, calcareous sandstone.	2	53 - 55
Sand, pinkish-gray (5 Y 8/1); quartzose, pebbles to fine grained, well sorted (medium), angular to well rounded; about 5 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), angular to rounded; about 25 to 30 percent shells and shell fragments.	5	55 - 60

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, pinkish-gray (5 YR 8/1); quartzose, very coarse to fine grained, moderately sorted (medium), angular to rounded; about 5 percent phosphorite and heavy minerals, coarse to very fine grained, poorly sorted, angular to rounded; about 35 to 40 percent shells and shell fragments, large mollusks.	5	60 - 65
Shells and shell fragments, mollusks including Turritella sp. and Olivella sp.; about 30 to 35 percent sand, light-olive-gray (5 Y 6/1), quartzose, coarse to fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, fine grained, angular to well rounded.	5	65 - 70
Shells and shell fragments and sand as above; heavy minerals and phosphorite are very coarse to fine grained, moderately sorted (fine), angular to well rounded.	5	70 - 75
Shells and shell fragments and sand as above; about 35 to 40 percent sand at 80 to 85 feet, quartzose, coarse to very fine grained, well sorted (fine), angular to rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to rounded.	10	75 - 85
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 15 to 20 percent heavy minerals and phosphorite, fine grained to silt, well sorted (very fine), angular to subrounded; about 5 to 10 percent shells and shell fragments; about 1 percent micrite, not cemented.	5	85 - 90
Sand as above; very silty with some clay; about 45 to 50 percent shells and shell fragments; manatee bone fragment.	5	90 - 95
Sand as above; quartzose, medium grained to silt, well sorted (very fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite; about 10 percent shell fragments; about 10 percent micrite, not cemented.	5	95 - 100
Sand as above; about 40 to 45 percent shells and shell fragments, Olivella sp. and other mollusks.	5	100 - 105
Sand as above; siltier and clayey; about 35 to 40 percent shells and shell fragments as above.	5	105 - 110

Description	Thick- ness (feet)	Depth, feet below land surface
Shells and shell fragments, Olivella sp. and Turritella sp.; about 30 to 35 percent quartz to 25 to 30 percent at 114 to 117 feet, coarse to very fine grained, moderately to well sorted (medium), angular to subrounded; about 5 to 10 percent heavy minerals and phosphorite, medium to very fine grained, well sorted (fine), subangular to rounded; sand is loosely cemented in places at 114 to 117 feet to about 1 to 3 percent sandstone.	7	110 - 117
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt, well sorted (very fine), angular to subangular; about 5 to 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; about 20 to 25 percent shell fragments, mollusks and benthic foraminifers; about 20 to 30 percent micrite, not cemented.	3	117 - 120
Shells and shell fragments; about 15 to 20 percent quartz, medium grained to silt, moderately to well sorted (fine), angular; about 5 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to rounded; loosely cemented into a sandy, packed biomicrite to sandy, packed poorly washed biosparite at 125 to 127 feet and 129.5 to 130 feet.	10	120 - 130
Limestone, light-gray (N 7) to light-medium-gray (N 6); sandy, sparse to sandy, packed poorly washed biosparite, Balanus sp., Encope sp., and mollusks; about 15 to 20 percent quartz, fine to very fine grained, well sorted (fine), angular; about 5 percent heavy minerals and phosphorite, fine grained, subrounded to rounded; loosely cemented.	10	130 - 140
Limestone, white (N 9) to light-gray (N 7); sandy, sparse to sandy, packed biomicrite, mollusks including Pecten sp. and Turritella sp.; about 20 to 30 percent quartz; coarse to very fine grained, well sorted (very fine), angular to subrounded; about 5 to 15 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), subrounded to rounded; loosely to moderately cemented; porous, moldic.	10	140 - 150
Limestone as above; yellowish-gray (5 Y 8/1); sandy, sparse biomicrite; about 35 to 40 percent quartz, coarse grained to silt, poorly sorted, angular to well rounded; about 10 percent heavy minerals and phosphorite, coarse to very fine grained, moderately sorted (fine), angular to well rounded; moderately porous, moldic; interbedded with sand at 150 to 153 feet and at 154 feet, same properties as in the limestone.	5	150 - 155
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, moderately to well sorted (fine), angular to well rounded; about 15 to 20 percent heavy minerals and phosphorite, coarse to very fine grained, well sorted (fine), angular to well rounded; about 10 to 20 percent shell fragments; phosphatized mantaray teeth; loosely to moderately cemented in places at 160 to 165 feet.	10	155 - 165

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, well sorted (fine), angular to subrounded; about 20 to 25 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to well rounded; about 10 to 15 percent shell fragments and mantaray teeth.	10	165 - 175
Sand, light-olive-gray (5 Y 6/1); quartzose, coarse grained to silt, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals, granules to very fine grained, moderately sorted (very fine), angular to well rounded; about 3 to 5 percent muscovite; about 10 to 15 percent shell fragments; about 15 to 20 percent micrite, not cemented.	5	175 - 180
Sand as above; quartz is moderately sorted (medium); interbedded with a very calcareous sandstone at 184 to 185 feet, grayish-yellowish-green (5 GY 7/2); quartzose, medium to fine grained, well sorted (medium); about 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine); about 5 to 10 percent mica, muscovite and biotite; about 35 percent micritic matrix; moderately cemented.	5	180 - 185
Sand as above; interbedded with sandstone as above, moderate-olive-brown (5 Y 4/4); about 30 percent micritic matrix; silty; loosely to moderately cemented.	5	185 - 190
Sand, light-olive-gray (5 Y 6/1); quartzose, medium grained to silt, well sorted (fine), angular to subrounded; about 10 percent heavy minerals and phosphorite, medium to very fine grained, moderately sorted (fine), angular to rounded; about 5 percent muscovite; about 10 percent silty micrite increasing toward base.	5	190 - 195
Sand, yellowish-gray (5 Y 7/2) to light-olive-gray (5 Y 5/2); quartz-ose, fine grained to silt, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (very fine), angular to subrounded; abundant sponge spicules, mantaray teeth; a large sand dollar was penetrated; about 5 to 10 percent micrite, not cemented.	5	195 - 200
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular to subangular; about 10 percent heavy minerals and phosphorite, fine to very fine grained, well sorted (fine), angular to subrounded; about 15 percent muscovite; about 10 to 15 percent micrite, not cemented.	5	200 - 205
Sand as above; dusky-yellowish-green (5 GY 5/2); quartz is well sorted (very fine); about 20 to 25 percent micrite, not cemented.	5	205 - 210

Lithologic Log of Well G-3395

Description	Thick- ness (feet)	Depth, feet below land surface
Peat and muck.	4	0 - 4
Peat; interbedded with a thin layer of micrite, not cemented; contains organic material.	2.5	4 - 6.5
Limestone, white (N 9) to yellowish-gray (5 Y 8/1) and light-gray (N 7); sparse to packed biosparite, Montastrea sp. and mollusks; very well cemented; moderately porous to porous and porous to very porous at 10 to 14 feet, vugs; contains peat as cavity-filling detritus.	7.5	6.5 - 14
Limestone, white (N 9) to yellowish-gray (5 Y 8/1) and light-gray (N 7); sandy, packed biosparite, bryozoans and mollusks; about 20 to 25 percent quartz; very fine grained, very angular to angular; well cemented; very porous, framework and vugs.	3	14 - 17
Limestone as in 6.5 to 14 feet; interfingering with a sandy, sparse biosparite, gastropods; about 15 percent quartz, very fine grained, angular; well cemented; very porous, vugs.	3	17 - 20
Limestone as in 6.5 to 14 feet; interfingering with freshwater limestone, light-olive-gray (5 Y 6/1); sandy, sparse to sandy, packed biosparite, gastropods; about 30 percent quartz, very fine grained, angular; well cemented; porous, vugs.	4	20 - 24
Limestone, very light gray (N 8) to medium-light-gray (N 6); sandy, fossiliferous to sparse biosparite, Archais sp. and gastropods; about 25 percent quartz, very fine grained, angular; very well cemented; interfingering with sparse biomicrite, mollusks; slightly to moderately porous, moldic and vugs.	3	24 - 27
Limestone as above; interfingering with sparse poorly washed biospar- ite, Archais sp.; well cemented; porous, moldic, vugs, and borings.	3	27 - 30
Limestone, white (N 9); sandy, sparse biomicrite, corals and mollusks; about 20 to 25 percent quartz, fine grained, angular; interfingering with fossiliferous to sparse biosparite as above; well to very well cemented; moderately porous to porous, vugs.	8	30 - 38
Limestone, light-olive-gray (5 Y 6/1) to very pale orange (10 YR 8/2) and pale-yellowish-brown (10 YR 6/2); fossiliferous to sparse biosparite, Helisoma sp.; very well cemented; moderately porous, vugs.	2	38 - 40

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, white (N 9) to yellowish-gray (5 Y 8/1) and light-gray (N 7); fossiliferous to sparse intrasparite to sandy, sparse intrasparite in places; about 20 to 25 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; very well cemented; slightly to moderately porous, vugs and moldic.	4	40 - 44
Limestone, white (N 9) to yellowish-gray (5 Y 8/1); sandy, sparse poorly washed biosparite, Chione sp., Archais sp. and gastropods; about 25 to 30 percent quartz, very coarse to fine grained, moderately sorted (fine), subangular to rounded; about 10 percent heavy minerals and phosphorite, coarse to fine grained, moderately to well sorted (fine), subangular to well rounded; very well cemented; slightly porous to porous in places, vugs, interparticle, and moldic.	3	44 - 47
Limestone, white (N 9) to yellowish-gray (5 Y 8/1); sandy, sparse to sandy, packed biosparite, marine mollusks; about 30 to 35 percent quartz, coarse to fine grained, moderately to well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals and phosphorite, coarse to fine grained, well sorted (fine), angular to well rounded; very well cemented; moderately porous to porous, interparticle and moldic.	3	47 - 50
Limestone as above; grades to a sandy, poorly washed biosparite; about 30 percent quartz, coarse to fine grained, moderately to well sorted (medium), angular to rounded; about 5 to 10 percent heavy minerals and phosphorite, medium to fine grained, well sorted (fine), subangular to well rounded; well cemented; porous, vugs and moldic.	4	50 - 54
Limestone as above; bryozoans, corals, and mollusks; about 35 to 40 percent quartz, moderately sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals, phosphorite, and ferrous minerals, moderately sorted (fine), angular to rounded; is a sandstone in places.	3	54 - 57
Limestone as above; quartz is well sorted (fine); about 10 percent heavy minerals, fine grained, subangular to subrounded; well to very well cemented; moderately porous to porous, moldic and vugs.	7	57 - 64

Description	Thick- ness (feet)	Depth, feet below land surface
Limestone, white (N) to yellowish-gray (5 Y 8/1); sandy, sparse to sandy, packed poorly washed biosparite and sandy, sparse to sandy, packed biosparite in places, Chione sp. and other mollusks; about 35 to 40 percent quartz to 10 percent in places, fine to very fine grained, well sorted (fine); about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; is a sandstone in places; well to very well cemented; porous to very porous, moldic.	6	64 - 70
Limestone as above; about 25 to 30 percent quartz; about 10 percent heavy minerals and ferrous minerals.	4	70 - 74
Limestone, yellowish-gray (5 Y 8/1); sandy, packed biosparite, Chione sp., Balanus sp., echinoid stems, Pecten sp. and Turritella sp.; about 35 percent quartz, medium to very fine grained, well sorted (fine), angular to subrounded; about 10 to 15 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; well cemented; porous, vugs and moldic.	3	74 - 77
Limestone, very pale orange (10 YR 8/2) to pale-yellowish-brown (10 YR 6/2); sandy, sparse poorly washed biosparite, <u>Pecten</u> sp. and other mollusks; about 40 to 45 percent quartz, very coarse to fine grained, poorly sorted, angular to well rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (very fine), angular; is a sandstone in places; loosely cemented (at 77.5 to 78 feet) to well cemented; porous, vugs.	3	77 - 80
Limestone as in 74 to 77 feet; corals and mollusks; about 30 percent quartz, coarse to fine grained, moderately sorted (fine), angular to rounded; about 10 to 15 percent heavy minerals and ferrous minerals, fine grained, angular to rounded; well cemented; porous to very porous, moldic and framework.	5	80 - 85
Limestone as above; grades to a sandy, sparse poorly washed biospar- ite toward base; about 30 to 35 percent quartz; about 10 percent heavy minerals; well cemented; moderately porous, moldic.	5	85 - 90
Sandstone, yellowish-gray (5 Y 8/1); quartzose, medium to very fine grained, well sorted (fine), angular to subrounded; about 5 percent heavy minerals and ferrous minerals, fine to very fine grained, well sorted (fine), angular to subrounded; about 30 percent shell fragments, Pecten sp. and other mollusks; about 5 to 20 percent sparite matrix; concretionary in places; loosely to well cemented and not cemented in places toward base; porous, interparticle and vugs.	10	90 - 100

Description	Thick- ness (feet)	Depth, feet below land surface
Sand, yellowish-gray (5 Y 8/1); quartzose, coarse to very fine grained, well sorted (fine), angular to rounded; about 5 percent heavy minerals, fine to very fine grained, angular to subrounded; about 15 percent shell fragments, mollusks and echinoids; cemented in places into a shelly, calcareous sandstone; about 5 to 15 percent sparite matrix; concretionary in places; moderately porous to porous, vugs.	12	100 - 112
Sandstone as above.	3	112 - 115
Sandstone as above; moderate-yellowish-brown (10 YR 5/4); about 15 to 20 percent heavy minerals; about 25 to 30 percent shell fragments; well to loosely cemented at 117 to 120 feet and very loosely cemented to not cemented at 120 to 122 feet and 124 feet.	10	115 - 125
Sand, light-olive-gray (5 Y 6/1); quartzose, fine grained to silt, well sorted (fine), angular; about 20 to 25 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; about 30 to 35 percent shell fragments, mollusks and echinoids; cemented in places into a sandstone; about 15 to 20 percent sparite matrix.	8	125 - 133
Sand as above; siltier; about 35 to 40 percent shell fragments.	2	133 - 135
Sand as above; about 15 to 20 percent micrite, not cemented; loosely cemented in places into a sandstone; about 20 to 30 percent poorly washed matrix.	8	135 - 143
Sand, light-olive-gray (5 Y 5/2); quartzose, fine grained to silt (siltier than above), well sorted (very fine), angular; about 10 to 15 percent heavy minerals, very fine grained, angular to subrounded; about 3 to 5 percent mica; about 10 to 15 percent micrite, not cemented; about 5 percent very small shell fragments.	12	143 - 155
Silt, dusky-yellowish-green (10 GY 3/2); sandy; quartzose, very fine grained, angular; about 5 to 10 percent heavy minerals, very fine grained to silt; some clay.	5	155 - 160
Silt as above; clayey; decrease in sand; abundant mica; about 1 to 3 percent micrite, not cemented.	5	160 - 165

Description	Thick- ness (feet)	Depth, feet below land surface
Silt as above; grayish-olive (10 YR 4/2); decrease in sand; increase in clay.	5	165 - 170
Silt as in 155 to 160 feet; about 5 percent micrite, not cemented; benthic foraminifers.	10	170 - 180
Silt as above; light-olive-gray (5 Y 5/2); decrease in sand; clayey; about 5 to 10 percent micrite, not cemented.	8	180 - 188
Silt as above; increase in sand.	2	188 - 190
Silt, moderate-olive-brown (5 Y 4/4); clayey and sandy; about 10 percent micrite, not cemented.	5	190 - 195
Sand, moderate-olive-brown (5 Y 4/4); quartzose, very fine grained, angular; about 10 to 15 percent heavy minerals, very fine grained, angular to subrounded; silty and clayey; about 5 to 10 percent micrite, not cemented.	5	195 - 200
Sand, light-olive-gray (5 Y 5/2); quartzose, coarse grained to silt, moderately sorted (very fine), angular to rounded; about 5 to 10 percent heavy minerals, fine to very fine grained, well sorted (fine), angular to subrounded; about 10 percent micrite, not cemented; about 5 percent shell fragments.	5	200 - 205
Same as in 190 to 195 feet.	5	205 - 210
Silt as above; increase in sand.	10	210 - 220