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GSC Open File 3458 (sheet 3 of 9)

EAST COAST BASIN ATLAS SERIES
GRAND BANKS OF NEWFOUNDLAND
BIOSTRATIGRAPHY AND MATURATION DATA 3

FURTHER PALYNOLOGICAL DATA

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Figure 14 shows the tops of geochronologic units in cases where the assemblages were not sufficiently definitive to allow for application of the appropriate zonation scheme.

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Period	Subdivision	AGE \ WELLS	ADOLPHUS D-50	ARCHER K-19	BACCALIEU I-78	BEN NEVIS I-45	BITTERN M-62
Q		Pleistocene					
TERTIARY	NEOGENE	Pliocene-Pleistocene					
		Pliocene					
		Miocene or younger					
		Late Miocene	348				
		Middle-Late Miocene					
		Middle Miocene	402				
		Miocene					
		Early Miocene	485				
	PALEOGENE	Middle-Late Oligocene	796				265
		Early Oligocene	878	900		550	293
		Late Eocene-Early Oligocene	1143				
		Late Eocene	1326	1150		880	512
		Middle-Late Eocene					
		Eocene			1600		
		Middle Eocene	1993	1510		1390	649
		Early-Middle Eocene					
		Early Eocene	2408	1810		1570	671
		Late Paleocene	2621				
		Paleocene					
		Early Paleocene		1990		1720	677
CRETACEOUS	LATE	Late Cretaceous			1660		
		Late Maastrichtian-Early Paleocene					
		Maastrichtian	2682			1780	732
		Campanian-Maastrichtian					
		Campanian	2804				759
		Early Campanian	2838				817
		Santonian-Maastrichtian					
		Santonian-Campanian					
		Santonian	2896				899
		Coniacian-Campanian					
		Coniacian-Santonian					
		Coniacian	3048				1146
		Turonian-Coniacian				1840	
		Turonian	3079				
		Late Cenomanian					
		Cenomanian	3112			1930	
		Early Cenomanian					
	EARLY	Early Cretaceous					
		Albian-Cenomanian					
		Late Albian-Cenomanian					
		Late Albian					
		Middle-Late Albian					
		Middle Albian					
		Albian	3298			2380	
		Early Albian		2110			
		Aptian-Albian					
		Late Aptian		2170			
		Aptian				2710	
		Early Aptian				2860	
		Barremian-Aptian					
		Late Barremian					
		Barremian			1775	2890	
		Early Barremian					
		Late Hauterivian-Early Barremian					
		Neocomian-Barremian					
		Neocomian					
		Hauterivian-Barremian					
		Late Hauterivian					
		Hauterivian				3010	
		Late Valanginian-Early Hauterivian					
		Valanginian-Hauterivian					
		Late Valanginian					
		Middle-Late Valanginian					
		Middle Valanginian					
		Valanginian				3640	
		Early-Middle Valanginian					
		Early Valanginian		2230			
		Late Berriasian-Early Valanginian		2260	1845		
		Berriasian-Valanginian					
		Late Berriasian					
		Berriasian				4000	
		Early Berriasian			2171		
JURASSIC	LATE	Jurassic					
		Late Jurassic					
		Portlandian-Valanginian					
		Portlandian-Early Berriasian		2350			
		Portlandian				4445	
		Late Kimmeridgian-Portlandian		2440			
		Late Kimmeridgian-Early Portlandian					
		Kimmeridgian-Portlandian					
		Late Kimmeridgian		2470	2825		
		Middle-Late Kimmeridgian		2691			
		Middle Kimmeridgian		2890	2975		
		Kimmeridgian				4595	1174
		Early-Middle Kimmeridgian		2980	3410		
		Early Kimmeridgian		3250	3795		
		Oxfordian-Kimmeridgian					
		Oxfordian-Early Kimmeridgian					1433
		Late Oxfordian					
		Oxfordian		3668			
		Early Oxfordian					1512
	MIDDLE	Callovian-Oxfordian					
		Late Callovian					1604
		Callovian					
		Early Callovian					1890
		Late Bathonian-Early Callovian					
		Late Bathonian					
		Bathonian		4120			2012
		Bajocian-Bathonian					
		Aalenian-Bajocian					2529
	EARLY	Liassic-Bajocian					
		Early Jurassic					
		Late Pliensbachian-Toarcian/Aalenian					2759
		Pliensbachian-Toarcian					
		Pliensbachian					3018
		Late Sinemurian-Early Pliensbachian					
		Late Hettangian-Early Pliensbachian					
		Late Hettangian-Early Sinemurian					
		Hettangian-Sinemurian					3959
		Hettangian					
		Undifferentiated Jurassic			4365		
TRIASSIC	LATE	Triassic					4724
		Rhaetian-Sinemurian					
		Rhaetian-Hettangian					
		Rhaetian					
		Norian					
		Carnian-Norian					
PERMIAN	L	Tatarian					
		Kazanian					
	E	Kungurian					
		Artinskian					
		Sakmarian					
PALEOZOIC: CARBONIFEROUS	LATE	Westphalian					
		Late Westphalian B-Early Westphalian C					
		Mississippian					
		Late Visean-Namurian					
		Visean-Namurian					
		Middle-Late Visean					
		Visean					
		Late Tournaisian-Visean					
		Late Tournaisian					
PALEOZOIC: DEVONIAN		Frasnian					
		Early-Middle Frasnian					
		Late Givetian-Early Frasnian					
		Givetian-Frasnian					
		Givetian					
		Eifelian					
PALEOZOIC: EARLY		Early Paleozoic					
		Ordovician-Silurian					
		Cambrian-Ordovician					
		Indeterminate		4290		4885	4745
		Total Depth	3686	4299	5135	4932	4780

AGE \ WELLS	BLUE H-28	BONANZA M-71	BONAVISTA C-99	BONNITION H-32	CARY J-34
Pleistocene			457		
Pliocene-Pleistocene				302	
Pliocene			750		
Middle Miocene			887		
Miocene				329	
Early Miocene			1216		
Middle-Late Oligocene			1527	448	
Early Oligocene		1210	2112	479	
Late Eocene		1250	2600	750	317
Middle Eocene		1760	3353	1061	344
Early Eocene		3045	3600	1289	427
Late Paleocene			3630		
Early Paleocene			3661		482
Maastrichtian					537
Campanian					591
Santonian					793
Coniacian					930
Turonian					1103
Cenomanian					1131
Albian-Cenomanian		3415			
Barremian				1308	
Hauterivian				1936	
Late Valanginian-Early Hauterivian		3445			
Valanginian		3485			
Early Valanginian		3640			
Berriasian-Valanginian				2240	
Late Berriasian		3720			
Berriasian		3880			
Portlandian				2393	
Late Kimmeridgian		4025			
Middle-Late Kimmeridgian		4080			
Middle Kimmeridgian		4240			
Kimmeridgian				2545	
Oxfordian-Kimmeridgian		4440			
Oxfordian-Early Kimmeridgian					1295
Late Callovian					1451
Early Callovian					2121
Bajocian-Bathonian					2286
Visean-Namurian	5550				
Indeterminate	5680		3670	3042	
Total Depth	6103	5295	3779	3048	3689

AGE \ WELLS	COOT K-56	CORMORANT N-83	CUMBERLAND B-55	DOMINION O-23	EGRET K-36
Pliocene-Pleistocene			421	366	
Late Miocene			585	530	
Middle Miocene			777	558	
Early Miocene			994	814	
Middle-Late Oligocene			1271	1006	
Early Oligocene		265	1436	1115	378
Late Eocene		378	2012	1253	
Eocene					710
Middle Eocene			3182	1939	
Early Eocene		384	3575	2551	
Late Paleocene			3606	3069	
Early Paleocene		402	3636		
Late Cretaceous			3697		
Campanian		476			793
Early Campanian	305				
Santonian	332	494			820
Coniacian	497	658			1142
Turonian	625	771			1204
Cenomanian		793			
Early Cretaceous	762				
Albian					1349
Aptian					1448
Barremian-Aptian			3706		
Barremian					1494
Hauterivian					1707
Late Valanginian				3194	
Middle-Late Valanginian				3225	
Early-Middle Valanginian				3286	
Early Valanginian				3411	
Berriasian-Valanginian					1981
Late Berriasian				3533	
Berriasian				3563	
Early Berriasian				3688	
Jurassic	817				
Portlandian		832		3898	2225
Kimmeridgian		933			2511
Oxfordian-Kimmeridgian					2575
Oxfordian-Early Kimmeridgian		953			
Oxfordian					3339
Callovian		960			
Bathonian		1152			
Bajocian-Bathonian	927				
Aalenian-Bajocian		1344			
Late Pliensbachian-Toarcian/Aalenian	1646	1555			
Pliensbachian		1992			
Late Sinemurian-Early Pliensbachian	1768				
Late Hettangian-Early Sinemurian	2225				
Hettangian-Sinemurian		2369			
Rhaetian-Hettangian	3316				
Rhaetian		2993			
Early Paleozoic			3728		
Indeterminate		3143	4133		
Total Depth	3536	3161	4136	3698	3353

AGE \ WELLS	EGRET N-46	EIDER M-75	EMERILLION C-56	FLYING FOAM I-13	GABRIEL C-60
Pliocene-Pleistocene					1610
Late Miocene				302	
Middle-Late Miocene					1800
Middle Miocene				329	
Early Miocene				466	1910
Middle-Late Oligocene					2000
Early Oligocene				631	2030
Late Eocene				960	2060
Middle Eocene				1125	
Early-Middle Eocene					2480
Early Eocene				1783	
Late Paleocene				2057	
Paleocene				2176	
Campanian-Maastrichtian					2510
Campanian		274			
Santonian		439			
Coniacian		634	1585		
Turonian	1108	658			
Cenomanian		768	1716		
Early Cenomanian	1222				
Late Albian	1283				
Middle Albian	1310				
Albian			1762	2176	
Aptian-Albian					2540
Aptian			1805		2600
Early Aptian	1314				2690
Barremian-Aptian			1936		
Late Barremian				2268	
Barremian	1357		1948		3320
Early Barremian	1375				
Hauterivian	1405		2132		3590
Valanginian-Hauterivian	1466				
Valanginian	1497			2298	4280
Berriasian-Valanginian			2196		
Berriasian				2512	4730
Early Berriasian				2603	
Portlandian	1527		2365	2775	
Late Kimmeridgian	1588			2972	
Middle Kimmeridgian	1990			3155	
Kimmeridgian		823			
Early-Middle Kimmeridgian				3185	
Early Kimmeridgian	2472			3338	
Oxfordian-Early Kimmeridgian	2594	933		3459	
Callovian		1254			
Bathonian		1929			
Aalenian-Bajocian		2605			
Late Pliensbachian-Toarcian/Aalenian		3146			
Undifferentiated Jurassic			2855		
Indeterminate	2729		3039		
Total Depth	2743	3530	3277	3683	5171

AGE \ WELLS	GANNET O-54	GOLCONDA C-64	GRAND FALLS H-09	HEBRON I-13	HERMINE E-94
Late Miocene					335
Middle Miocene	293				454
Early Miocene	320				509
Middle-Late Oligocene	402				536
Early Oligocene	430	995			564
Late Eocene	503	1115			646
Middle-Late Eocene			220		
Middle Eocene		1355			783
Early-Middle Eocene					811
Early Eocene	805		274		866
Late Paleocene			302		
Early Paleocene			357		
Maastrichtian	914		412		921
Campanian	969		494		1003
Santonian	1161				
Coniacian-Santonian			594		
Coniacian	1326				1198
Turonian	1561		759	1680	1253
Cenomanian	1667				1283
Early Cenomanian		1775		1770	
Middle-Late Albian			786		
Albian	1744			1800	1314
Aptian	1893		978		1585
Early Aptian					1597
Barremian			1006		
Hauterivian				1945	
Late Valanginian				1995	
Early-Middle Valanginian		1805			
Early Valanginian				2310	
Late Berriasian				2580	
Early Berriasian				3020	
Portlandian-Early Berriasian			1079		
Portlandian				3110	
Late Kimmeridgian				3290	
Middle Kimmeridgian				3320	
Early Kimmeridgian		1835		3620	
Oxfordian-Early Kimmeridgian				3910	
Late Oxfordian		1865			
Oxfordian			1253		
Early Oxfordian		2045			
Late Bathonian-Early Callovian		2675			
Liassic-Bajocian			1573		
Undifferentiated Jurassic		3305			
Westphalian					1646
Late Westphalian B-Early Westphalian C					1768
Late Visean-Namurian					1777
Visean	1993				
Late Tournaisian-Visean	2225				
Frasnian	2394				
Givetian-Frasnian	2408				
Indeterminate	2954				2326
Total Depth	3048	4451	1600	4723	3268

AGE \ WELLS	HERON H-73	HIBERNIA B-08	HIBERNIA G-55	HIBERNIA K-18	HIBERNIA O-35
Pliocene-Pleistocene	296				
Late Miocene	378				
Middle Miocene	460				
Early Miocene	1018				
Middle-Late Oligocene	1265				
Early Oligocene	1512	540			520
Late Eocene	1676	1105			910
Middle Eocene	1731				1235
Early Eocene	1763				
Early Paleocene		1595			
Late Cretaceous			1620		
Late Maastrichtian-Early Paleocene					1295
Campanian	1765				
Early Campanian		1775			1385
Santonian	1905				1475
Coniacian-Santonian		1835			
Coniacian	2195			1975	1690
Turonian	2283	2075		2000	1750
Cenomanian	2313		1680		1870
Early Cenomanian			1707	2100	1960
Late Albian-Cenomanian	2362				1970
Late Albian	2387				2002
Middle-Late Albian				2180	
Middle Albian			1825		2045
Early Albian			2000		2110
Early Aptian					2230
Late Barremian					2290
Barremian				2270	
Early Barremian					2428
Hauterivian-Barremian					2440
Hauterivian		2135		2330	
Late Valanginian				2380	2496
Valanginian		2165			
Early Valanginian				2550	2650
Late Berriasian-Early Valanginian			2010		
Late Berriasian		2405		2760	2870
Early Berriasian		3103	2235	3430	3550
Late Jurassic	2437				
Portlandian-Early Berriasian			3370		4158
Portlandian		3492		3640	4245
Late Kimmeridgian				3850	
Middle-Late Kimmeridgian		3750			
Middle Kimmeridgian				3960	
Kimmeridgian					4455
Early Kimmeridgian				4320	
Oxfordian-Early Kimmeridgian	2470			4910	4635
Callovian	2591				
Bathonian	2777				
Pliensbachian-Toarcian	3066				
Pliensbachian	3332				
Rhaetian	3484				
Indeterminate	3630				
Total Depth	3658	4436	3460	5039	4780

AGE \ WELLS	HIBERNIA P-15	JAEGER A-49	KITTIWAKE P-11	LINNET E-36	MALLARD M-45
Pleistocene			351		
Pliocene			378		
Late Miocene			460		
Middle Miocene			918		
Early Miocene		274	1055		
Middle-Late Oligocene	255	302	1174		
Early Oligocene	410	329	1201	980	
Late Eocene	975	460	1475	1130	
Middle Eocene	1375	570	1640	1670	
Early Eocene		625	1686	2130	
Late Paleocene		652		2490	
Early Paleocene	1400			2520	
Maastrichtian	1475	707	1722	2550	
Campanian		735	1798	2670	
Early Campanian	1555	762			
Santonian	1615	789	1963		
Coniacian-Santonian	1675			2730	
Coniacian		881	2085		
Turonian	1950		2163	2790	
Cenomanian	2070		2181	2820	
Early Cretaceous					2874
Late Albian	2130				
Middle Albian	2340				
Albian			2216	3150	
Early Albian	2370			3240	
Late Aptian	2400				
Aptian			2268	3780	
Early Aptian	2430				
Barremian			2367		
Hauterivian	2490		2445		
Middle-Late Valanginian	2550				
Early Valanginian	2790				
Berriasian-Valanginian			2677		
Berriasian	2910				
Late Jurassic					3085
Portlandian	4105				
Kimmeridgian	4225				
Mississippian			4140		
Ordovician-Silurian				4260	
Indeterminate		893	3033	4505	3185
Total Depth	4407	939	3550	4520	3520

AGE \ WELLS	MURRE G-67	NARWHAL F-99	NORTH BEN NEVIS P-93	NORTH DANA I-43	OSPREY H-84
Late Miocene		2320			253
Middle Miocene		2390			308
Early Miocene					335
Middle-Late Oligocene	274				363
Early Oligocene	329	2420	915	1000	445
Late Eocene	448	2860	1090	1120	
Middle Eocene	503		1415	2020	
Early-Middle Eocene		2890			
Early Eocene	558		1695	3005	801
Late Paleocene			1995	3395	
Early Paleocene			2055		
Late Cretaceous				3425	
Maastrichtian			2180		
Campanian	668	3280	2210		
Santonian-Campanian					829
Coniacian-Santonian	725				
Turonian-Coniacian					1027
Turonian	765	3305	2300		
Cenomanian	841	3310	2330	3485	1058
Middle-Late Albian		3315	2510		
Albian	898				
Early Albian		3370			
Late Aptian		3420	2660		
Early Aptian			3040		
Late Barremian			3345		
Barremian		3450			
Late Hauterivian-Early Barremian			3495		
Hauterivian			3585		
Late Valanginian			3675		
Middle Valanginian			3735		
Early-Middle Valanginian		3490			
Early Valanginian			3905		
Late Berriasian-Early Valanginian			4355		
Late Berriasian		3850			
Early Berriasian		4300	4475		
Late Jurassic		4475			
Portlandian-Early Berriasian			4745		
Portlandian			4925		
Late Kimmeridgian-Portlandian			5180		
Kimmeridgian-Portlandian	949				
Kimmeridgian	1113				
Early-Middle Kimmeridgian				3575	
Early Kimmeridgian				3696	
Oxfordian-Early Kimmeridgian	1241				
Late Oxfordian				3725	
Early Oxfordian				3845	
Early Callovian	1355				
Bajocian-Bathonian	1606				
Liassic-Bajocian	1826				
Pliensbachian-Toarcian	1966				
Late Sinemurian-Early Pliensbachian	2234				
Hettangian-Sinemurian	2676				
Hettangian					1103
Rhaetian					1371
Carnian-Norian					1917
Indeterminate	2908	4570	5215	4365	3472
Total Depth	3337	4585	5282	5304	3474

AGE \ WELLS	PANTHER P-52	PELICAN J-49	PETREL A-62	PHALAROPE P-62	PUFFIN B-90
Pleistocene					314
Pliocene					351
Late Miocene	395		284		570
Middle Miocene			338		1119
Early Miocene	555		393		1585
Middle-Late Oligocene	695				1695
Early Oligocene	725		448		1713
Late Eocene	1135		695		2026
Middle Eocene	1645		881		2197
Early-Middle Eocene		290			
Early Eocene	2255	317			2209
Early Paleocene	2645				2253
Maastrichtian					2292
Campanian		399	884		2292
Early Campanian		454	960		2368
Santonian		482	1015		2423
Coniacian		564	1137		2640
Turonian		729	1304		
Cenomanian		793	1326		
Late Albian		860			
Albian			1344		2728
Early Albian		921			
Aptian		945	1490		2883
Early Aptian			1555		
Barremian			1570		3002
Neocomian-Barremian		988			
Hauterivian			1615		3280
Berriasian-Valanginian					3706
Middle Kimmeridgian	2675				
Early-Middle Kimmeridgian	2825				
Early Kimmeridgian	2885				
Late Oxfordian	4110				
Late Pliensbachian-Toarcian/Aalenian		1129	1631		
Early-Middle Frasnian				2457	
Late Givetian-Early Frasnian				2487	
Givetian				2515	
Eifelian				2850	
Cambrian-Ordovician				2972	
Indeterminate		1289	1698	3133	
Total Depth	4302	1299	1946	3162	4702

AGE \ WELLS	RANKIN M-36	PAZORBILL F-54	SANDPIPER 2J-77	SKUA E-41	SOUTH MARA C-13
Miocene or younger				296	
Middle Miocene				351	
Early Miocene				424	
Middle-Late Oligocene		265		479	
Early Oligocene	710	293		588	
Late Eocene-Early Oligocene				689	
Late Eocene	910	375		825	800
Eocene			280		
Middle Eocene	950	503		908	980
Early Eocene	1025	521		991	1370
Late Paleocene		613			1910
Early Paleocene				1073	1970
Maastrichtian	1115	677			
Campanian	1395	732		1158	
Early Campanian		786	335	1265	
Santonian-Maastrichtian					2060
Santonian		860	363	1292	
Coniacian		997	555		2120
Turonian	1475	1161	582		2210
Late Cenomanian	1555				
Cenomanian		1244	774		
Early Cenomanian	1675				
Late Albian	1715				2360
Middle Albian	1840				2480
Early Albian	1960				
Late Aptian	2025				2685
Early Aptian					2865
Late Barremian					3015
Barremian			858		
Neocomian				1358	
Late Valanginian					3135
Middle Valanginian					3255
Early Valanginian					3285
Early Berriasian					4130
Portlandian-Early Berriasian					4370
Portlandian				1539	
Late Kimmeridgian-Early Portlandian					4400
Late Kimmeridgian					4520
Middle Kimmeridgian	2170				4670
Kimmeridgian				1585	
Early-Middle Kimmeridgian	2300				
Early Kimmeridgian	2385				4940
Oxfordian-Early Kimmeridgian				1890	
Late Oxfordian	2840				
Early Oxfordian	3055				
Late Callovian				2225	
Callovian	3205				
Late Bathonian-Early Callovian	3285				
Bathonian	3405				
Aalenian-Bajocian				2347	
Liassic-Bajocian		1381			
Pliensbachian-Toarcian		1479		2856	
Late Sinemurian-Early Pliensbachian			868		
Late Hettangian-Early Pliensbachian			954		
Late Hettangian-Early Sinemurian		1591			
Hettangian-Sinemurian			1238		
Undifferentiated Jurassic			2301		
Rhaetian-Hettangian		2185	2504		
Norian			2720		
Carnian-Norian		2550			
Middle-Late Visean			3030		
Late Tournaisian			3249		
Indeterminate		2619	3524	3229	
Total Depth	3967	3135	3525	3239	5034

AGE \ WELLS	SOUTH TEMPEST G-88	SPOONBILL C-30	TERRA NOVA K-08	TORS COVE D-52	TRAVE E-87
Late Miocene				284	
Middle Miocene				448	
Early Miocene	710			665	
Middle-Late Oligocene	770			888	
Early Oligocene	800	287	695	902	740
Late Eocene	1185		755	946	1040
Middle Eocene	1425	433	965	1074	1220
Early Eocene	2205		1090	1134	1670
Late Paleocene					2150
Paleocene		460			
Early Paleocene			1120		
Maastrichtian			1270		
Campanian		817	1290		
Early Campanian		869			
Santonian			1320	1131	
Coniacian			1350		
Turonian			1380		
Cenomanian		896	1470		
Middle-Late Albian			1500		
Middle Albian			1560		
Late Aptian			1680		
Early Aptian			1710		
Early Barremian			1770		
Late Hauterivian			1830		
Late Valanginian			1890		
Middle Valanginian			1920		
Early Valanginian	2685		1990		
Berriasian-Valanginian	2835				
Late Berriasian			2280		2150
Early Berriasian			2310		
Portlandian-Early Berriasian	2865		2610		2360
Late Kimmeridgian-Portlandian			2670		2510
Late Kimmeridgian-Early Portlandian	2925				
Late Kimmeridgian	2985		2810		2540
Middle-Late Kimmeridgian			2840		2660
Middle Kimmeridgian	3165		2930		
Early-Middle Kimmeridgian			3080		2750
Early Kimmeridgian	3285		3455		2870
Late Oxfordian			3721		3410
Early Oxfordian			4370		3950
Pliensbachian				1170	
Late Hettangian-Early Pliensbachian		921			
Hettangian-Sinemurian		1033			
Rhaetian-Sinemurian				1306	
Rhaetian-Hettangian		1359			
Carnian-Norian		2429			
Indeterminate	4665	2682	4470	1467	
Total Depth	4675	2757	4500	1473	3986

AGE \ WELLS	TWILLICK G-49	VOYAGER J-18	WHITEROSE J-49	WHITEROSE L-61	WHITEROSE N-22
Middle Miocene	268				
Early Miocene	296				
Middle-Late Oligocene	415				
Early Oligocene	570	780		770	935
Late Eocene		960		1350	1175
Middle-Late Eocene	652				
Middle Eocene			2075	1780	1625
Early Eocene	853	1260	2225	2110	1835
Late Paleocene				2460	
Paleocene	881				
Early Paleocene		1350	2315	2490	
Maastrichtian	963			2580	
Campanian	1009				2345
Santonian	1091				
Coniacian-Campanian				2610	
Coniacian	1201				
Turonian			2345		
Middle Albian			2490		
Albian		1440			2405
Late Aptian				2670	
Aptian		1525			2435
Late Barremian			2580		
Hauterivian-Barremian					2465
Late Valanginian-Early Hauterivian					2735
Middle Valanginian				2765	2825
Early-Middle Valanginian				3035	
Early Valanginian		1665	2730		2915
Late Berriasian		1785	3340	3330	
Early Berriasian			3645		3155
Late Jurassic			4425		
Portlandian-Early Berriasian					3215
Late Kimmeridgian		1935			3245
Middle Kimmeridgian		2055			3905
Early-Middle Kimmeridgian		2265			3965
Early Kimmeridgian		2505			4115
Late Oxfordian		2745			4265
Early Oxfordian		3165			
Late Bathonian-Early Callovian		3435			
Bathonian		3570			
Indeterminate	1271		4550		
Total Depth	1302	3743	4561	3340	4628

FIGURE 14. Palynology tops

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