

ID	A1 Geographic Area	A2 Site ID	B Core/Sample Count	C Physiographic Province	D Tectonic Setting	E Geographic Position	F Water Depth (m)	G Subbottom Depth (m)	H Temperature at Hydrate: Geothermal Gradient	I Estimated Depth to Phase Boundary	J Bottom Simulating Reflector Present?	K Observed Thickness of Hydrate Zone (m)	L Thickness/Size of Pure Hydrate Layer/Grains	M Habit or Mode of Occurrence	N Sediment Description	O Apparent Origin of Included Gas	P Observations and Comments	Q References	
1	Atlantic-Blake Ridge (S.E. USA)	DSDP leg 76, hole 533	1 sample	Ridge (on continental rise)	Passive	31° 15.6' N 74° 54.2' W	3191	238	14C at 256m: 36C/km	-570 (seawater)C&K	Yes (at ~600m)	A few centimeters-thick layer of "frothy sediment"	Dimensions < 1cm?	Matlike white crystals, dispersed?	Fine-grained hemipelagic sediment	Biogenic	Speculate hydrate is particulate and dispersed in gassy zones (152-250 m subbottom); faults	Kvenvolden and Barnard (1983), Shipboard Scientific Party (1983)	
2	Atlantic (Nigeria)	Site 1 Site 2 Site 3	2 cores 1 core 3 cores	Continental slope	Passive	3° 33.7' S 6° 31.8' W 3° 31.4' S 6° 20.9' W 3° 57.6' S 5° 16.6' W	676 770 561	3.2-3.5 (1 core) 4.4-4.6 ~At sea floor (2 cores)	Est. bottom water = 6°C Est. bottom water = 5C Est. bottom water = 6C		No	0.3 0.2 ?	< 1-1.5 cm (maximum dimension) Nodules Dispersed (assume fine particles) Dispersed (assume fine particles)	Nodules Clay-rich sediment	Biogenic, some thermogenic Biogenic Biogenic	Core sites over fault zones; 6 of 310 cores had gas hydrates	Brooks and others (1994), Rutledge, per comm (1992)		
3	Black Sea ("the Crimea," Ukraine)		> 2 samples	Lower slope	Passive	~45° N ~35° E	2050	At sea floor?	No temperature data: ~35° C/km (based on regional data)	-470 (seawater)C&K -510 (pure water)S	No	Not given	Not given	Inclusions; dispersed to massive in breccia, thin plates in deformed silt-clay sed	Clay breccia, silt-clay	Biogenic?	Mud volcanoes, diapirs in area	Soloviev and Ginsburg (1994)	
4	Caspian Sea (Azerbaijan)	Site 1 - Buzdag Site 2 - Elm	19 cores 5 cores	Ridge Uplift	Passive	39° 18.37' N 50° 24.20' E 38° 57.85' N 50° 23.95' E	475 600	0-1.2 0-1.2	-6° C: highly variable geothermal gradient -6° C: highly variable geothermal gradient			0-1.2 ~0.50	5 cm by 12 cm in planar dimensions; several mm thick 5 cm by 2 cm in planar dimensions; 2-3 mm thick	Segregated laminae, equant grains, needles Same as above: laminated, finely flakey, acicular	Mainly breccia of clayey silt; calcareous, sulfur concretions		Associated exclusively with mud volcanoes, diapirs	Soloviev and Ginsburg (1994) Ginsburg and others (1992)	
5	Gulf of Mexico (Louisiana)	Site 1 (Orca Basin) (DSDP leg 96, hole 618) Site 2 (Green Canyon, Block 184) Site 3 (Green Canyon, Block 204) Site 4 (Green Canyon, Block 234) Site 5 (Garden Banks, Block 388) Site 6 (Green Canyon, Block 257) Site 7 (Green Canyon, Block 320) Site 8 (Mississippi Canyon) Site 9 (Bush Hill)	2 samples 6 cores 3 cores 2 cores 1 core (2 zones) 2 cores 1 core 1 core 1 core	Intraslope basin Trough (on continental slope) Continental slope Continental slope Continental slope Continental slope Continental slope Canyon Continental slope	Passive	26° 56' N 91° 19' W 27° 47' N 91° 30' W 27° 45' N 90° 33' W 27° 44' N 91° 13' W 27° 36' N 92° 11' W 27° 43' N 90° 06' W 27° 39' N 91° 21' W 28° 03' N 88° 59' W 27° 47.5' N 91° 15' W	2400 530 850 590 850 880 800 1300 540	20 1.4 Core penetrations of 1.2, 2.8 2.8, 3.8 4.2, 4.8 3.2 -3.8 At sea floor	No temperature data: ~40° C/km (gradient extrapolated from proximal site) Est. 5° C: no gradient data Est. 5° C: no gradient data Est. 5° C: no gradient data Bottom water >= 4° C: ~37° C/km (gradient extrapolated from proximal site) 7-7.5° C: no gradient data	-440 (seawater)C&K -480 (pure water)S	No (seismic wipeout zone)	~20 (20-40) 2.8 2 mm, 10-20 mm thick, respectively 0.4 < 5 cm ? 0.5 m diameter mound	Typically, 1-4 mm beads, possibly some up to 10 mm in diameter Chunks 1-2 mm up to 50 mm in diameter Chunks 2-5 mm up to 30 mm in diameter Core plug > 150 mm in length 2 mm wide, 10 mm long 3 mm wide and 10 mm long 2 mm wide, 10 mm long Small pieces Large mounds	Dispersed white crystals throughout 20 m interval Chunks; larger ones bulbous, nodular, spherical Chunks, dispersed Massive Small white nodules; flat, sheet-like layers Small white nodules; flat, sheet-like layers Small white nodules; flat, sheet-like layers Small pieces	Gray mud, sand Coarse sediments; carbonate rubble and/or shell hash Coarse sediments; carbonate rubble and/or shell hash Coarse sediments; carbonate rubble and/or shell hash Sandy muds; gravel-sized authigenic carbonate particles Coarse sediments; carbonate rubble and/or shell hash Coarse sediments implied	Biogenic Thermogenic Thermogenic Biogenic Biogenic Biogenic Thermogenic Thermogenic	Orca basin bottom water is hypersaline; faults diapirs Yellow-brown; gravel-sized carbonate material present Yellow-brown; gravel-sized carbonate material present Yellow-brown; gravel-sized carbonate material present Yellowish?	Faults, diapirs throughout region	Brooks and others (1986) Pflaum and others (1986) Shipboard Scientific Party (1986) Brooks and others (1986) Brooks and others (1986) MacDonald and others (1994)
6	Japan Sea (Japan)	ODP leg 127, hole 796	1 sample	Ridge (Okushiri Ridge)	Active	42° 53.6' N 139° 24.7' E	2571	68.4	11.2° C at 60 m subbottom, 14.0° C at 80 m subbottom; 178° C/km	-100 (seawater)C&K -100 (pure water)S	No	29.3 (68.4 - 97.7)	5 cc	One sample (5 cc) was matrix for sand grains, another was a white crystalline hydrate (also 5 cc); both from 90 m below sea floor, dispersed	Clay and silty clay with sand	Biogenic	In sand and silt beds, 1-10 cm thick; facies change to sand at 63 m below sea floor is almost coincident with level of hydrate appearance; in thrust zone	Shipboard Scientific Party (1990)	
7	Okhotsk Sea (Paramushir Island)		> 2 samples		Active	~50° N ~151° E	800	0.3-1.2	Est. bottom water = 2° C		No	0.9?	Not given	Not given	Not given	Biogenic	Carbonate cementation, gas vents, fault zone	Soloviev and Ginsburg (1994)	
8	Okhosk Sea (Sakhalin Island)	Site 1 Site 2 Site 3 Site 4 Site 5	1 core 1 core 1 core 1 core 1 core	Continental slope	Passive	54° 26.8' N 144° 04.9' E	719 708 708 710 708	0.3 0.95 1.2 1 0.7	Est. bottom water = 2° C		No	0.1 1 0.2 0.2 0.9	Thickest layer found among all 5 cores = 7 mm; also 5 mm diameter by 5 cm-long tube and an angular piece 3-4 cm long	Thin beds (0.5-7 mm) veins, stringers, disseminated, irregular pieces	Gray-green, olive green, silt and clay Gray-green, olive green, silt and clay Gray-green, olive green, silt and clay Gray-green, olive green, silt and clay Gray-green, olive green, silt and clay		CaCO3 with hydrate, gas vent area, fault zone		
9	Pacific-Cascadia Basin (Oregon)	ODP leg 146, hole 892	1 sample	Slope basin	Active	44° 40.4' N 125° 07.1' W	674	2	Predict 4.8° C at top of zone, 5.7° C at base; 51° C/km	-70 (seawater)C&K -70 (seawater)E&B -70 (seawater)D&Q -100 (pure water)S	Yes (at ~75 m)	17	2-3 cm-thick layer	Dispersed, platy to prismatic crystals (1-1.5 cm); intergrown 3-5 cm clusters of these crystals; massive, thin (0.3-0.5 cm) layers and veins; parallel and oblique to bedding, respectively; pockets of sediment cemented by hydrates	Very dark greenish gray to dark gray clayey silt	Biogenic?	White crystals; could exist as disseminated grains to 73 m; rare interbedding of fine sand and coarse silt in section; fine to very fine silt dominant; fault zones	Shipboard Scientific Party (1994)	
10	Pacific-Eel River (California)	Site 1 (ER-10) Site 2 (ER-82) Site 3 (ER-83) Site 4 (ER-105) Site 5 (ER-139) Site 6 (ER-148) Site 7 (ER-202)	1 core 1 core 1 core 1 core 1 core 1 core 1 core	Continental slope	Active	40° 38.2' N 124° 32.6' W 40° 47.1' N 124° 35.6' W 40° 47.1' N 124° 35.4' W 40° 48.5' N 124° 37.6' W 40° 52.5' N 124° 38.6' W 40° 52.8' N 124° 39.3' W 40° 56.9' N 124° 34.5' W	510 512 518 567 623 642 559	1.6 0.02 At sea floor? At sea floor 1.8 At sea floor 1.47	Est. bottom water < 6° C	-70 (seawater)C&K -70 (seawater)E&B -70 (seawater)D&Q -100 (pure water)S	Yes (inconsistent at 225-315 m)	0.2 0.3? >1.5 0.2 0.2 >1.8 1.47 (1.4-2.8)	Nodules Crystals Dispersed (small particles?) Grains/nodules up to a few cm in length Several cms in length Mms to cms ? Layered Layered nodules Layered Mms to cms ?	Medium gray dolomitic mudstone Gray mudstone Fine gray sand and silt Mud Layered nodules Layered Mudstone chips at 1.0 m	Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic	Mudstone (late Quaternary) At 0.2 m dolomitic mudstone, mudstone (Plio-Pleistocene)	Cores sited on faults intentionally	Brooks and others (1991)	
11	Pacific - Middle America Trench (Costa Rica)	Site (DSDP leg 84, hole 565)	Zone a 1 sample Zone b 1 sample	Trench	Active	09° 43.7' N 86° 05.4' W	3099	285 319	No temperature data: ~25° C/km	-830 (seawater)C&K	No	Sample thickness (1 cm) is taken as minimum zone thickness	0.3 cc (2 samples) 1.5 cc	Inclusion Inclusions	Mud Muddy sandstone, stiff mud (in catcher)	Biogenic	Isolated sample initially observed through core liner Isolated sample	Kvenvolden and McDonald (1985), Mathews and von Huene (1985), Shipboard Scientific Party (1985)	
12	Pacific - Middle America Trench (Guatemala)	Site 1 (DSDP leg 67, hole 497) Site 2 (DSDP leg 67, hole 498) Site 3 (DSDP leg 84, hole 458) Site 4 (DSDP leg 84, hole 570)	1 sample 1 sample 1 sample Zone a 1 sample Zone b 1 sample Zone c 1 sample Zone d 1 sample Zone e 1 sample Zone f 1 sample Zone g 1 sample	Continental slope (upper slope of trench) Deep-see trench Continental slope (upper slope of trench) Continental slope	Active	12° 59.2' N 90° 49.7' W 12° 42.7' N 90° 54.9' W 13° 04.3' N 90° 48.0' W 13° 17.1' N 91° 23.6' W	2347 5478 2010 1698	368 307 404 192 246 249 259 273 303 338	No temperature data: ~32° C/km No temperature data: ~22° C/km No temperature data: ~36° C/km No temperature data: 12° C/km (average geothermal gradient top 375 m; overall ~30° C/km ?)	-560 (seawater)C&K -600 (pure water)S -450 (seawater)C&K -490 (pure water)S -500 (seawater)C&K -540 (pure water)S	No Yes (at 460 m, but weak) No	< 0.02 ? 9.5 (307-316.5) 1.5 (403.2 - 404.7) Minimum zone thickness = cms (estimated) ~32 cc 15 (240-255) 15 (240-255) 9 (259-268)	Inclusion Cement Inclusions in fractures Cement laminae In fractures In fractures In fractures In fractures Grains? Grains? Grains?	4 cc (maximum volume) Relatively coarse vitric sand Tuffaceous mudstone Ash Mudstone In fractures in dolomite at base of mudstone Mudstone Mudstone Mudstone Associated with ash Associated with ash	Biogenic? Biogenic? Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic Biogenic	Sample from core catcher; faults present; Sediments well-indurated, competent; near-vertical faults Position of bottom simulating reflector based on seismic profile and drilling data Fault associated with gas hydrate occurrence Either filled void or created its own space	Harrison and Curiale (1982), Huene and others (1982), Shipboard Scientific Party (leg 67) (1982a) Harrison and Curiale (1982), Huene and others (1982), Shipboard Scientific Party (leg 67) (1982a) Kvenvolden and McDonald (1985), Mathews and von Huene (1985), Shipboard Scientific Party (1985) Kvenvolden and McDonald (1985), Mathews and von Huene (1985), Shipboard Scientific Party (1985)		
13	Pacific - Middle America Trench (Mexico)	Site 1 (DSDP leg 66, hole 490) Site 2 (DSDP leg 66, hole 491) Site 3 (DSDP leg 66, hole 492)	Zone a 1 sample Zone b 1 sample Zone c 1 sample Zone d 1 sample Zone a 1 sample Zone b 1 sample Zone c 1 sample Zone a 1 sample Zone b 1 sample	Continental slope Continental slope Continental slope	Active	16° 09.6' N 99° 03.4' W 16° 01.7' N 98° 58.3' W 16° 04.7' N 98° 56.7' W	1761 2883 1935	140 146 167 364 89 163 168 141 170	No temperature data: ~25° C/km (based on measurement at 227.5 m) No temperature data: ~25° C/km (based on measurement at 227.5 m) No measurement data: 25° C/km (based on measurement at 227.5 m) No data No temperature data: 25° C/km (based on measurement at 304.5 m) No temperature data: 25° C/km (based on measurement at 304.5 m) No temperature data: 25° C/km (based on measurement at 304.5 m) 5.9° C: 22° C/km No temperature data: 22° C/km (based on measurements to 229m)	-630 (seawater)C&K -690 (pure water)S -810 (seawater)C&K -770 (seawater)C&K -840 (pure water)S	No Yes (at 770 m) No	~0.02 0.35 0.35 0.5 0.1 0.45 0.5 0.15 0.07	Inclusions Cement Cement Cement Inclusion, "blebs" Cement Cement Cement Cement Cement	Mud Muddy to silty laminated volcanic ash Sandy to silty laminated volcanic ash layer Bioturbated mudstone and clayey ash Mud Fine sand beds Mud Muddy laminated volcanic ash layer Muddy laminated volcanic ash layer	Biogenic Biogenic, mostly Biogenic	Associated with large wood fragment Fracturing, deformation	Shipboard Scientific Party (leg 66) (1982a) Shipboard Scientific Party (Leg 66) (1982b) Shipboard Scientific Party (Leg 66) (1982c)		
14	Pacific - Nankai Trough (Japan)	ODP leg 131, hole 808	1 sample	Trough	Active	32° 21.1' N 134° 56.8' E	4684	Between 90-140	12° C at top of zone, predict 17° at bottom; 111° C/km (averaged)	-210 (seawater)C&K	No		Grain? (recovered in core wash)	Sands and clayey silts, turbidites, clayey silt below position of hydrates	Biogenic	Slides, flows, channels; faulted, brecciated; toe of wedge; associated with plant debris; thermogenic gas deeper in section	Shipboard Scientific Party (1991)		
15	Pacific - Peru-Chile Trench (Peru)	Site 1 (ODP leg 112, hole 685) Site 2 (ODP leg 112, hole 688)	Zone a 1 sample Zone b 1 sample 1 sample	Trench axis Lower trench slope	Active	9° 06.8' S 80° 35.0' W 11° 32.3' S 78° 56.6' W	5070 3820	99 166 141	5.8° C: 42° C/km ? 7.7° C: 42° C/km -8° C: 52° C/km	-590 (seawater)C&K -420 (seawater)C&K	Yes (at ~610 m) Yes (at ~475 m)	Est. minimum = 1 cm Est. minimum 1-3 cms = 7 cm ? (from photo)	1 cc 18 cc < 1 cm (from photo)	Dark gray "pieces" Diatomaceous dark gray mud Diatomaceous dark gray mud Swath of hydrate grains mixed with mud	Biogenic Biogenic Biogenic Biogenic	Site within region of normal faults	Kvenvolden and Kastner (1990)		