(Miocene?) on Attu Island

DESCRIPTION OF MAP UNITS STRATIFIED SEDIMENTARY SEQUENCE

MAINLY MARINE INCLUDES SOME VOLCANIC ROCKS IN PART METAMORPHOSED

HOLOCENE DEPOSITS-Alluvial, glacial, lake, estuarine, swamp, landslide, flood plain and beach deposits

Tpc QUATERNARY DEPOSITS-Alluvial, glacial, lake, eolian, beach, and volcanic deposits. Includes the marine Bootlegger Cove Clay

PLEISTOCENE DEPOSITS-Alluvial, glacial, dune sand, loess, and reworked sand and silt deposits

PLIOCENE ROCKS-Sandstone, siltstone, and conglomerate. Includes Tachilni Formation on the Alaska Peninsula and Tugidak Formation on Tugidak and Chirikof Islands UPPER TERTIARY ROCKS-Sandstone, siltstone, shale, mudstone, and conglomerate of Miocene and

Pliocene age. Includes upper part of the Sagavanirktok Formation on the Arctic Coastal Plain, and the Yakataga Formation in the Gulf of Alaska area MIOCENE ROCKS-Sandstone, siltstone, conglomerate, argillite, graywacke, and basaltic rocks. As shown includes Bear Lake Formation of Burk (1965) on the Alaska Peninsula, Narrow Cape Formation (Oligocene or Miocene) on Kodiak and Sitkinak Islands, and Chuniksak Formation

OLIGOCENE ROCKS-Volcanic conglomerate, sandstone, volcanic breccia, shale, and siltstone. As shown includes the Meshik Formation and Stepovak Formation of Burk (1965) on the Alaska Peninsula and the Sitkinak Formation on Sitkalidak, Sitkinak, and Chirikof Islands EOCENE ROCKS-Sandstone, siltstone, and shale interbedded with mafic flows and sills of the Andrew

Lake Formation on Adak Island TERTIARY ROCKS-Sedimentary rocks concealed beneath Quaternary cover on Point Hope and volcanogenic sedimentary rocks and flows, dikes, and sills on the Alaska Peninsula and Umnak Island MIDDLE TERTIARY ROCKS-Siltstone, sandstone, organic shale, and locally, volcanic rocks. Includes

Poul Creek, Katalla, and Topsy Formation ranging from Oligocene to Miocene age in Gulf of Alaska

LOWER TERTIARY ROCKS-Interbedded sedimentary, volcanogenic, and volcanic rocks of Paleocene, Eocene, and Oligocene age on the Alaska Peninsula and Aleutian Islands and intensely deformed marine and continental clastic rocks of Paleocene and Eocene age in the Gulf of Alaska area. Includes to Tolstoi and Belkofski Formations of Burk (1965) in the Alaska Peninsula; the Ghost Rocks Formation on Kodiak Island; the Amchitka and Banjo Point Formations on Amchitka Island; Gunners Cove Formation on Rat Island; the Krugloi Formation on Agattu Island; and Kulthieth, Kushtaka, Tokun Formations, and clastic rocks of the Orca Group in the Gulf of Alaska area

UPPER CRETACEOUS ROCKS-Shale, sandstone, and conglomerate of the Ninuluk Formation of the Nanushuk Group and the Seabee and Schrader Bluff Formations of the Colville Group in the Arctic Coastal Plain and Foothills; nonmarine and marine clastic rocks, siltstone, and shale of the Chignik and Hoodoo Formations on the Alaska Peninsula; graded beds of sandstone and slate of the Kodiak Formation on Kodiak and Afgonak Islands; and sandstone and mudstone of Shumagin Formation on Shumagin and Sanak Islands

CRETACEOUS ROCKS-Volcanic graywacke, mudstone, and sandstone with some coal-bearing rocks in the Yukon-Koyukuk province; graywacke and shale of the Kuskokwim Group in the Kuskokwim Mountains; and shelf deposits of sandstone, siltstone, shale and limestone of the Kennicott, Moonshine Creek, Schulze, Chititu, and MacColl Ridge Formations in the southern Wrangell Mountains; the Matanuska Formation in the Matanuska Valley; and the Kaguyak Formation on the Alaska Peninsula

LOWER CRETACEOUS ROCKS-Graywacke, sandstone, shale, siltstone, and conglomerate of part of the Tiglukpuk Formation of former usage, Okpikruak, Fortress Mountain, Torok, and Kukpowruk Formations in the western Arctic Foothills; the Kongakut Formation, Bathtub Graywacke, Tuktu and Grandstand Formations in the eastern Brooks Range and Arctic Foothills; unnamed graywacke, argillite, conglomerate, and minor limestone southeast of the mouth of the Kuskokwim River; interlayered submarine and subaerial andesitic fragmental volcanic rocks, flows, tuffs, and volcaniclastic and minor andesite on Etolin Island

CRETACEOUS AND JURASSIC ROCKS-Argillite, shale, graywacke, quartzite, conglomerate, lava, tuff, and agglomerate. Almost barren of fossils and probably includes rocks ranging in age from Early Jurassic to Late Cretaceous. In places moderately to highly metamorphosed (amphibolite facies) CRETACEOUS AND UPPER JURASSIC ROCKS-Graywacke, slate, argillite, minor conglomerate, volcanic detritus, and interbedded mafic volcanic rocks. Includes Valdez and part of Yakutat Groups and Sitka Graywacke. Mildly metamorphosed, locally to greenschist

LOWER CRETACEOUS AND UPPER JURASSIC ROCKS-Shallow and deep water clastic deposits (Oxfordian to Barremian) north of the Wrangell Mountains; includes sandstone, arkose, siltstone, and limestone of the Staniukovich Formation (Burk, 1965) and Herendeen Limestone on the Alaska Peninsula; and slate, graywacke and conglomerate of the Seymour Canal Formation on Admiralty and LOWER CRETACEOUS AND UPPER JURASSIC(?) ROCKS-Melange of flysch, greenstone, limestone,

chert, granodiorite, glaucophane-bearing greenschist, and layered gabbro and serpentenite. Melange consists of Late Jurassic(?) and Early Cretaceous pelitic matrix enclosing blocks several kilometers in dimension of Permian to Lower Jurassic rocks. Includes the Uyak Formation, McHugh Complex, melange within Yakutat Group, and Waterfall Greenstone, and Khaz Formation of the Kelp Bay Group. UPPER JURASSIC ROCKS-Sandstone, siltstone, shale, and conglomerate on the Alaska Peninsula, Cook Inlet area, and southern flank of the Talkeetna Mountains. Includes the Chinitna and Naknek

MIDDLE JURASSIC ROCKS-Argillite, graywacke, and conglomerate southeast of the Kuskokwim River and sandstone, shale, siltstone, and conglomerate on the Alaska Peninsula and Cook Inlet area where it includes the Kialagvik and Shelikof Formations and Tuxedni Group.

LOWER JURASSIC ROCKS-Sandstone and argillite interbedded with volcanic flows and pyroclastic rocks of the Talkeetna Formation in the Cook Inlet area and southern Talkeetna Mountains JURASSIC ROCKS-Shale, siltstone, and sandstone. Includes the Kingak Shale along the northern front of the Brooks Range, Glenn Shale (which includes rocks of Triassic and Cretaceous age) in the eastcentral part of the state, the Nizina Mountain Formation and Kotsina Conglomerate along the southern

Wrangell Mountains, and unnamed slaty detrital rocks on Gravina and Annette Islands JURASSIC AND(OR) TRIASSIC ROCKS-Chert and argillite north of the Porcupine River; limestone with minor dolomite, shale, and chert of the Chitistone Limestone, Nizina Limestone, McCarthy Formation, and Lubbe Creek Formation along the southern Wrangell Mountains; and hornfels and phyllite of the Hazelton(?) Group in southeast Alaska

UPPER TRIASSIC ROCKS-Limestone, shale, and chert of the Kamishak Formation in the Cook Inlet area; a shelf facies of limestone, tuff, tuffaceous conglomerate and breccias at the southern tip of the Kenai Peninsula (west of the Border Ranges fault) and equivalent rocks on Shuyak, Afognak, and Kodiak Islands; a deep water flysch and melange facies of chert, pillow basalt and associated graywacke, argillite, and minor ultramafic rocks (east of the Border Ranges fault) on the southern Kenai Peninsula; chert, limestone, sandstone, and greenstone of the Whitestripe marble and Pinnacle Peak Phyllite (both Triassic?) on Chighagof and Baranof Islands, of the Hyd Group on Admiralty Island and Keku Straits area, and of the Nehenta and Chapin Peak Formations on Gravina Island TRIASSIC ROCKS-Shale, chert, and limestone of the Shublik Formation and quartzitic sandstone of the

Karen Creek Sandstone on the north flank of the Brooks Range TRIASSIC AND PERMIAN ROCKS-Sandstone, siltstone, and shale of the Sadlerochit Group on the north flank of the Brooks Range; mafic volcanic rocks, red beds, limestone, and calcareous argillite in the Chulitna River area; argillite, limestone, siltstone, conglomerate, and abundant gabbroic sills in the east-central Alaska Range where it includes the upper part of the Mankomen Group; and schist, graywacke, slate, conglomerate phyllite, andesite flows and tuffs on Admiralty Island where it includes the Barlow Cove Formation

JURASSIC, TRIASSIC, AND PERMIAN ROCKS-Shale, siltstone, and chert, and graywacke in the Brooks Range. Includes upper part of Nuka Formation, Siksikpuk and Shublik Formations MESOZOIC AND PALEOZOIC ROCKS-Sandstone, shale, chert, dolomite and conglomerate, in a discordant rock sequence of unknown provenance that includes rocks of Mississippian, Triassic, Jurassic and Cretaceous age in the western Brooks Range (includes Nuka Formation); early Jurassic, Pennsylvanian and Permian rocks, in part covered by Tertiary sedimentary rocks and intruded by granitic rocks of Tertiary age in north-central Chugach Mountains; and slate, quartzite, schist and phyllite with interlayered beds of marble, layered gneiss and amphibolite of Ordovician to Jurassic or Cretaceous age along the west flank of the Coast Mountains

PERMIAN ROCKS-Chert, shale, and siltstone of the Siksikpuk and Echooka Formations in the central Arctic Foothills and volcanic argillite and graywacke with local chert, pillow flows, limestone, and dolomite of the Cannery, Pybus, and Halleck Formations on Admiralty, Kuiu, and Kupreanof Islands PERMIAN AND PENNSYLVANIAN ROCKS—Basaltic to andesitic lavas and dervivative volcaniclastic rocks, tuffs, minor gabbro, and local shallow-water sedimentary rocks metamorphosed to greenschist facies, and locally, amphibolite facies. Includes Skolai Group, Strelna Formation (Permian) and Tetelna Volcanics in the Wrangell and Talkeetna Mountains. Consists of unnamed phyllite, slate, schist, greenschist, amphibolite, gneiss, and migmatite in St. Elias Mountains

Limestone on Prince of Wales Island of the Kekiktuk Conglomerate and Kayak Shale (both of Mississippian age) of the Endicott Group and the Alapah and Wahoo Limestones of the Lisburne Group

PENNSYLVANIAN ROCKS-Siltstone, sandstone, and limestone of the Klawak Formation and Ladrones

MISSISSIPPIAN ROCKS-Conglomerate, shale, limestone with subordinate chert and dolomite of the Kekiktuk Conglomerate and Kayak Shale of the Endicott Group and the Utukok Formation and Wachsmuth and Alapah Limestones of the Lisburne Group on the northern flank of the Brooks Range. Limestone, dolomite, and interbedded chert of the Iyoukeen Formation on Chichagof Island and Peratrovich Formation on Wales Island

JURASSIC TO MISSISSIPPIAN ROCKS—Unnamed slate and quartzite north-west of Porcupine River and Lisburne and Sadlerochit Groups and Kingak Shale at northeast front of Brooks Range TRIASSIC TO DEVONIAN ROCKS-Radiolarian chert, slate, and argillite

UPPER PALEOZOIC ROCKS-Argillite, chert, shale, limestone, and siltstone. Greenstone, limestone, shale, clastic sedimentary rocks, schist, gneiss, and undifferentiated metamorphic rocks east of Juneau PALEOZOIC ROCKS-Limestone, marble, dolomite, and chert on Seward Peninsula and St. Lawrence Island; limestone, slate, and conglomerate in central Alaska Range; argillite and graywacke slightly metamorphosed west of Chulitna River; flysch, conglomerate, limestone and pillow basalt southwest of Mount McKinley; marble, in places containing tremolite in Wrangell Mountains where it includes parts of a Permian section designated the Kashawulsh Group in the Yukon Territory; and sedimentary,

metasedimentary, and metavolcanic rocks in southeastern Alaska.

MISSISSIPPIAN AND(OR) DEVONIAN ROCKS-Sandstone, graywacke, quartzite, and conglomerate. Includes the Noatak Sandstone in western Brooks Range and Kikiktuk and Kanayut Conglomerate in eastern Brooks Range

DEVONIAN ROCKS-Phyllite, hornfels, graywacke, and sandstone on the Seward Peninsula; pyroclastic rocks and ash flows interbedded with sedimentary rocks metamorphosed to schist and gneiss of the on north-central flank of Alaska Range; limestone east of Kuskokwin Bay; clastic rocks and limestone of the Kennel Creek Limestone (which may also include Silurian rocks) and Cedar Cove Formation on Chichagof Island; schist, phyllite, marble, and amphibolite of the Retreat Group and Gambier Bay Formation on Admiralty and Kupreanof Islands and equivalent rocks to the north and south; and limestone, shale, graywacke, conglomerate and basaltic rocks of the St. Joseph Island Volcanics

(Devonian?), Wadleigh Limestone, and Port Refugio Formation on Prince of Wales Island UPPER DEVONIAN ROCKS-Shale, sandstone, chert, conglomerate, and quartzite in eastern and central Brooks Range and limestone and dolomite in western Brooks Range. Includes Hunt Fork Shale, Kanayut Conglomerate, Kuguruvok Formation, and Eli Limestone (Middle and Upper Devonian)

umD UPPER AND(OR) MIDDLE DEVONIAN ROCKS-Conglomerate, graywacke, phyllite, shale, sandstone, siltstone, and limestone. Includes Nanook Limestone in Shublik Mountains DEVONIAN AND SILURIAN ROCKS-Linestone, dolomite, marble, and shale of the Katakturuk Dolomite and the Skajit Limestone in the Brooks Range and Karheen Formation in Prince of Wales

SILURIAN ROCKS-Graywacke, shale, siltstone, limestone, sandstone, and argillite. Includes siltstone,

mudstone, limestone, conglomerate, sandstone, graywacke, minor redbeds and volcanic rocks of the Rendu Formation and Willoughby Limestone in Glacier Bay area; the Point Augusta Formation on Chichagof Island; Bay of Pillars Formation on Admiralty, Kuiu, and Prince of Wales Islands; and Kuiu Limestone, and Heceta Limestone on Prince of Wales Island ORDOVICIAN ROCKS-Limestone and shale on Seward Peninsula; argillite, chert and limestone of the Hood Bay Formation on Admiralty Island

SILURIAN AND ORDOVICIAN ROCKS-Graywacke, conglomerate, shale, siltstone, tuff, lava, and local limestone of the Descon Formation on Prince of Wales Island CAMBRIAN ROCKS-Siltstone, sandstone, and phyllite

ORDOVICIAN, CAMBRIAN, AND PRECAMBRIAN ROCKS-Phyllite, sandstone, siltstone, limestone, LOWER PALEOZOIC ROCKS-Includes rocks of Cambrian through Devonian age, in places metamorphosed

to greenschist facies and amphibolite facies. Sedimentary rocks include limestone, dolomite, argillite, chert, and graywacke and metasedimentary rocks include schist, quartzite, slate, greenstone, carbonate rocks, phyllite. Includes Holitna Group in Kuskokwim Mountains, Tonzona Group along Kuskokwim River, rocks formerly included in Birch Creek Schist in Yukon-Tanana Upland, unmetamorphosed rocks of the Funnel Creek, Adams, Hillard, Road River, McCann Hill and Hillard Formations, and Puppets Formation on Gravina and Annette Islands LOWER PALEOZOIC AND(OR) PRECAMBRIAN ROCKS-Sandstone, limestone, shale, chert, phyllite,

argillite, and quartzite of the Neruokpuk Formation in the northeast Brooks Range; quartz-mica schist, mafic greenschist, calcareous schist, chloritic schist, phyllite and quartzite along south flank of Brooks Range and southwest through Kokrine-Hodzana Highlands; schist and quartzite of the Birch Creek Schist of former usage in Yukon-Tanana Highlands; highly metamorphosed clastic rocks including the Keevy Peak Formation in the north flank of the Brooks Range; and volcanogenic greenschist, semischist, with interstratified marble in Prince of Wales, Long and Dall Islands, where it includes the Wales Group and possibly Descon Formation PRECAMBRIAN Z ROCKS-Siltite, phyllite, graywacke, quartz schist, and graphitic schist of slate of the

York region on Seward Peninsula; schist, gneiss, and small amounts of amphibolite and marble east of Kuskokwim Bay; quartz wacke, semi-schist, phyllite, and argillite of the Neruokpuk Formation in northeastern Brooks Range; phyllite, slate, and siltstone east of Fort Yukon; and limestone, dolomite, YOUNGER PRECAMBRIAN Z ROCKS-Schistose, argillaceous, dolomitic limestone with tactite on

OLDER PRECAMBRIAN Z ROCKS-Schist, gneiss, and migmatic and metamorphic rocks, including rocks equivalent to slate of the York region, in the Kigluaik and Bendeleben Mountains on the Seward CONTINENTAL DEPOSITS

PLIOCENE CONTINENTAL DEPOSITS—Pebble to boulder conglomerate, coarse sandstone, siltstone, claystone and to thin lignite beds. Includes Nenana Gravel (Pliocene?) uTc UPPER TERTIARY CONTINENTAL DEPOSITS—Sandstone, siltstone, claystone, minor conglomerate and coal beds. Includes upper part of Kenai Group in Cook Inlet area and Nenana Gravel and related unnamed rocks in west-central Alaska Range. Rocks range in age from Oligocene(?) through Pliocene

INDEX MAP AND SOURCES OF DATA

MIOCENE CONTINENTAL DEPOSITS—Sandstone, siltstone, shale, claystone, conglomerate, and coal beds. Includes the Sanctuary, Suntrana, Grubstake, and Lignite Creek Formations in the central Alaska Range and the Frederika Formation in the Wrangell Mountains MIDDLE TERTIARY CONTINENTAL DEPOSITS-Sandstone, siltstone, claystone and coal beds. Includes the Healy Creek Formation in the central Alaska Range, the Gakona Formation in eastcentral Alaska Range, and the Tsadaka Formation in the Matanuska Valley. Rocks range in age from

LOWER TERTIARY CONTINENTAL DEPOSITS-Claystone, siltstone, sandstone, conglomerate and coal beds. Includes lower part of Sagavanirktok Formation in the Arctic Coastal Plain and the Chickaloon and Wishbone Formations in the Matanuska Valley. Rocks range in age from Paleocene

PALEOCENE CONTINENTAL DEPOSITS-Conglomerate, sandstone, coaly shale, and shale. Includes Cantwell Formation in central Alaska Range. TERTIARY CONTINENTAL DEPOSITS—Sandstone, coal, conglomerate and shale of the Kootznahoo

Formation on Admiralty, Kuiu, Kupreanof, and Zaremko Islands TERTIARY AND CRETACEOUS CONTINENTAL DEPOSITS—Conglomerate, breccia, sandstone, arkose, mudstone, shale, tuffaceous rocks, and lignite. Includes Arkose Ridge Formation (Cretaceous?) in Matanuska Valley. UPPER CRETACEOUS CONTINENTAL DEPOSITS—Sandstone and conglomerate and interbedded shale,

clay, silt, and bentonite of the Niakogon Tongue of the Chandler Formation of the Nanushuk Group

and the Prince Creek Formation of the Colville Group on the Arctic Coastal Plain; shale and siltstone in the Yukon-Koyukuk basin; and pebble conglomerate around the margins of the basin CRETACEOUS CONTINENTAL DEPOSITS—Limestone conglomerate with minor interbeds of limestone, graywacke, and thin coal seams LOWER CRETACEOUS CONTINENTAL DEPOSITS-Shale and claystone, siltstone, sandstone,

conglomerate, coaly shale and coal, ironstone, and bentonite. Includes Corwin Formation (Lower and Upper Cretaceous) of Nanuskuk Group and Killik Tongue of Chandler Formation of Nanushuk Group on Arctic Coastal Plain METAMORPHIC ROCKS

with subordinate amphibolite, marble, and metachert at southern tip of Kenai Peninsula and on Afognak MESOZOIC METAMORPHIC ROCKS-Small masses of metamorphosed sedimentary, volcanic, and igneous rocks, largely of pre-Cretaceous age, scattered throughout the Aleutian Range batholith.

Amphibolite facies schist along north side of Matanuska Valley JPm JURASSIC, TRIASSIC, AND PERMIAN METAMORPHIC ROCKS-Metasedimentary, metaplutonic, and metavolcanic rocks near Anchorage and along south side of Matanuska Valley PALEOZOIC METAMORPHIC ROCKS-Hornfels, schist, amphibolite, minor marble, and undivided metamorphic rocks north of Icy Strait in southeastern Alaska, and gneiss, schist, phyllite, and

LOWER JURASSIC METAMORPHIC ROCKS-Intercalated blueschists, quartz mica schist, greenschist

undifferentiated metasedimentary and metaigneous rocks in the Yukon-Tanana Upland Pz_D€m PALEOZOIC AND(OR) PRECAMBRIAN METAMORPHIC ROCKS-Metasedimentary and metaigneous rocks, including schist and gneiss of many different compositions, primarily of the greenschist and amphibolite facies, in the Yukon-Tanana Upland. Formerly included in the Birch Creek Schist

SOURCES OF GEOLOGIC DATA

[Unless otherwise indicated, all publications are those of the U.S. Geological Survey. \underline{B} - Bulletin, \underline{C} - Circular, GQ - Geologic Quadrangle Map, I - Miscellaneous Geologic Investigations Map, MF - Miscellaneous Field Studies Map, OF - Open-file Report, PP - Professional Paper. Complete bibliographic citations may be obtained from the Geologic Map Index of Alaska, 1978]

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64. I 593, 1:250,000, 1970 (Foster, H. L.). 65. MF 655-A, 1:250,000, 1975 (Richter, D. A.). 66. I 469, 1:250,000, 1966 (Hoare, J. M., and Condon, W. H.). 67. Unpublished compilation (Hoare, J. M., and Condon, W. H.). 68. Unpublished compilation (Platt, J. N.). 69. I 523, 1:250,000, 1968 (Hoare, J. M., and Condon, W. H.). 70. I 668, 1:250,000, 1971 (Hoare, J. M., and Condon, W. H.). 71. I 292, 1:250,000, 1959 (Hoare, J. M., and Coonrad, W. L.). 72. PP 268, pl. 1, 1:250,000, 1955 (Cady, W. M., Wallace, R. E., Hoare, J. M., and Webber, E. J.). 73. Interpolated by H. M. Beikman. 74. OF 70-271, pl. 1, 1:250,000, 1970 (Reed, B: L., and Elliott, R. L.).

75. B 862, pls. 1 and 2, 1:250,000, 1935 (Capps, S. R.).

83. I 285, 1:250,000, 1959 (Hoare, J. M., and Coonrad, W. L.).

Dalrymple, G. B.).

76. I 1019, 1:250,000, 1976 (Magoon, L. B., Adkison, W. L., and Egbert, R. W.). 77. Unpublished compilation (Plafker, George, and MacKevett, E. M., Jr.). 78. I 524, 1:125,000, 1969 (Nichols, D. R., and Yehle, L. A.). 79. B 943-C, fig. 3, 1:375,000, 1945 (Kingston, Jack, and Miller, D. J.). 80. I 356, 1:96,000, 1962 (Coulter, H. W., and Coulter, E. B.). 81. MF 773-A, 1:250,000, 1976 (MacKevett, E. M., Jr.). 82. I 223, 1:500,000, 1957 (Coonrad, W. L.). 82a. Geol. Soc. America Mem. 116, p. 377-413, pl. 1, 1:56,000, 1968 (Hoare, J. M., Condon, W. H., Cox, A. V., and

84. I 339, 1:250,000, 1961 (Hoare, J. M., and Coonrad, W. L.). 85. I 407, 1:250,000, 1964 (Detterman, R. L., and Reed, B. L.). 86. I 321, 1:250,000, 1961 (Hoare, J. M., and Coonrad, W. L.). 87. Unpublished compilation (Hoare, J. M.). 88. Interpolated by H. M. Beikman. 89. B 1058-G, pl. 29, 1:250,000, 1959 (Keller, A. S., and Reiser, H. N.). 90. Unpublished compilation (Tysdal, R. G.). 91. PP 550-B, p. 63, fig. 1, 1:875,000 (Plafker, George, and MacNeil, F. S.) and PP 550-D, p. 196, fig. 1, 1:94,000,

1966 (Lanphere, M. A.). 92. I 484, 1:500,000, 1967 (Plafker, George). 93. Canada Geol. Survey open-file rept. 214, 1:1,000,000, 1974 (Souther, J. G., Brew, D. A., and Okulitch, A. V.). 94. Canada Geol. Survey open-file rept. 166, 1:1,000,000, 1973 (Hutchison, W. W., Berg, H. C., and Okulitch, A. V.). 95. PP 832, pl. 1, 1:63,360, 1974 (MacKevett, E. M., Jr., Robertson, E. C., and Winkler, G. R.). 96. I 303, 1:250,000, 1959 (Lathram, E. H., Loney, R. A., Condon, W. H., and Berg, H. C.). 97. B 800, pl. 1, 1:500,000, 1929 (Buddington, A. F., and Chapin, Theodore). 98. PP 792, pl. 1, 1:250,000, 1975 (Loney, R. A., Brew, D. A., Muffler, L. J. P., and Pomeroy, J. S.) and C 733, fig. 7, 1:2,750,000, 1976 (Plafker, George, Jones, D. L., Hudson, Travis, and Berg, H. C.).

99. B 1181-R, pl. 1, 1:250,000, 1965 (Lathram, E. H., Pomeroy, J. S., Berg, H. C., and Loney, R. A.). 100. B 1241-C, pl. 1, 1:63,360, 1967 (Muffler, L. J. P.). 101. Unpublished compilation, 1974 (Ovenshine, A. T.). 102. B 1154 (MacKevett, E. M., Jr.) and B 1284 (Eberlein, G. D., and Churkin, Michael, Jr.); unpublished compilation (Eberlein, G. D., and Churkin, Michael, Jr.). 103. Unpublished compilation, 1974 (Clark, A. L.).

104. B 1373, pl. 1, 1:63,360, 1973 (Berg, H. C.) and I 684, 1:63,360, 1972 (Berg, H. C.). 105. OF 78-73A, 1:250,000, 1978 (Berg, H. C., Elliott, R. L., Smith, J. G., and Koch, R. D.). 106. B 880-C, pl. 2, 1:250,000, 1937 (Capps, S. R.). 107. OF 67-161, 1:250,000, 1967 (Moore, G. W.); modified 1977 (Moore, G. W.) and 1976 (Connelly, William). 108. Geol. Soc. America Mem. 99, sheets 1 and 2, 1:250,000, 1965 (Burk, C. A.). 109. Unpublished compilation (Miller, T. P.).

110. B 1028 (Numerous authors); modified in part from Geol. Soc. America Bull., v. 81, no. 12, p. 3583-3592, 1970 (Scholl, D. W., Green, H. G., and Marlow, M. S.) and v. 84, no. 5, table 2, p. 1560 (Marlow, D. S., Scholl, D. W., Buffington, E. D., and Alpha, T. R.); and written commun., January 1975 (Scholl, D. W.). 111. B 1324-A, fig. 1, 1:650,000, 1970 (Cohee, G. V., Bates, R. G., and Wright, W. B.). 112. Jour. Research, v. 2, no. 1, fig. 2, 1:2,000,000, 1974 (Csejtey, Bela, Jr., and Patton, W. W., Jr.; modified by 113. MF 642, 1:125,000, 1975 (Patton, W. W., Jr., and others). 114. Unpublished compilation (Hopkins, D. M.). 115. I 817, 1:63,360, 1974 (Moore, J. C.).

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Bathymetry from OF 76-821, 822, and 823

116. I 815, 1:63,360, 1974 (Moore, J. C.). 117. MF 372, 1:1,000,000, 1972 (Reed, B. L., and Lanphere, M. A.).













