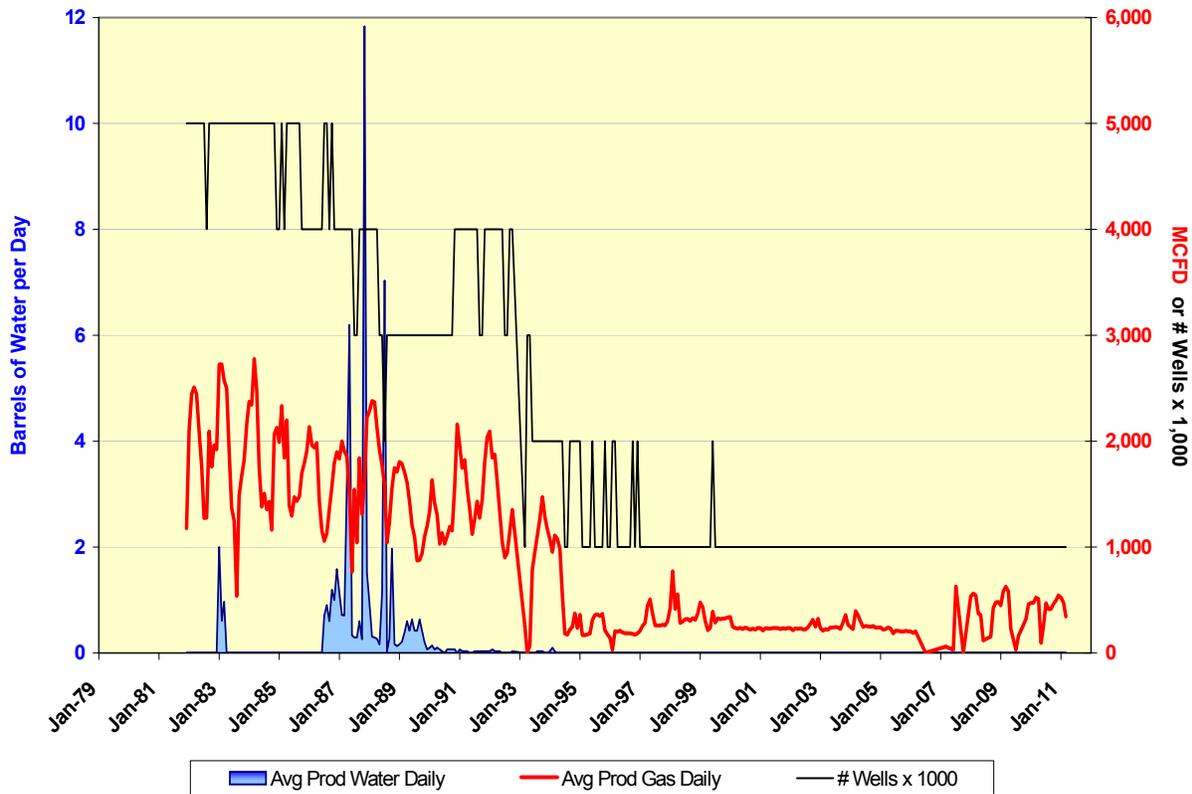


East Barrow Gas Pool

Summary

Near Point Barrow, hydrocarbons have accumulated in Jurassic-aged reservoir sandstone that lies along the western and eastern margins of an apparent impact crater¹ located on the northern flank of the west-to-east trending Barrow High.² Drilling and testing of the East Barrow Gas Field began in 1974 and continued through 1990. During this time eight wells were drilled in the field: South Barrow 12, 14, 15, 17, 18, 19, 20, and East Barrow 21. Regular gas production from the pool began in December 1981, peaked at about 2.75 million cubic feet of gas per day in early 1983, and then began to decline. During the first quarter of 2011, the East Barrow Gas Pool produced an average of 448,000 cubic feet of gas per day.³

East Barrow Field, East Barrow Gas Pool
Average Daily Production Rates



¹ Kirschner, C.E., Grantz, A., and Mullen, M.W., 1992, Impact Origin of the Avak Structure, Arctic Alaska, and Genesis of the Barrow Gas Fields; AAPG Bulletin, v. 76, no. 5, p. 651 – 679.

² Morahan, G.T., 2008, Characterization and Quantification of the Methane Hydrate Resource Potential Associated with the Barrow Gas Fields; DOE Project Number DE-FC26-06NT42962, Enclosure 6 in PRA's Application for Designation as Gas Wells, Barrow Gas Fields, Dec. 21, 2009, p. 20.

³ Alaska Oil and Gas Conservation Commission, 2011, Well and Production Database

Geology

Within the East Barrow Field, the main gas reservoir is the Barrow Sandstone, an informal member of the Kingak Formation. This sandstone was deposited in a marine environment, and it consists of silty, very fine-to fine grained, moderately sorted sandstone that contains pyrite, siderite, glauconite, and calcite and is commonly interbedded with siltstone and shale. In the East Barrow Gas Field, porosity for the Barrow Sandstone ranges from 2 to 28 percent, averages 18 percent, and has a median value of 18 percent. Permeability for the Barrow Sandstone ranges from 0.01 to 3295 millidarcies, averages 133 millidarcies, and has a median value of 13 millidarcies. Reservoir quality rock also occurs within the Walakpa Sandstone, Pebble Shale, Torok Formation, and the Sag River Sandstone.⁴

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July 25, 2011

⁴ Alaska Oil and Gas Conservation Commission, 2010, Disposal Injection Order 37.