

Abstracts of Papers

Cretaceous Medicine Bow, Lewis, and Mesaverde formations consist of up to 10,000 ft (3050 m) of marine dark, organic-rich shales that enclose many stacked hydrocarbon-bearing sandstones.

Structural prospecting should be most fruitful around the edges of the basin where Laramide flank structures exist. Deformation of the Hanna basin sediment package into its thirty-mile-wide by eight-mile-deep present day configuration should have produced out-of-the-basin thrusts terminating in anticlinal structures. Strata along the northern margin of the basin, fronting the southward moving Emigrant Trail - Bradley Peak - Shirley thrust complex, were crumpled into anticlinal folds such as O'Brien Springs and Horseshoe Ridge. Oil and gas ranging in age from Pennsylvanian to Upper Cretaceous have been found in these structures.

Only seven wells have been drilled in the deeper part of the Hanna basin. Two of these wells tested gas at commercial rates from Upper Cretaceous rocks at 10,000 to 12,000 ft (3050-3660 m) depths. Sparse drilling along the basin flanks has revealed structurally trapped oil and gas at depths from 3,000 to 7,000 ft (915-2130 m). The encouragement from the few wells drilled indicates that a more concerted exploratory effort in the Hanna basin is justified.

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Geology and Petroleum Potential of the Hanna Basin, Carbon County, Wyoming

The Hanna basin is one of the world's deeper intracratonic depressions. It contains exceptionally thick sequences of mature hydrocarbon-rich Eocene through Paleozoic sediments and has the requisite structural and depositional history to become a major petroleum province.

Stratigraphic traps exist within the deeper, central parts of the basin, in low permeability, possibly overpressured Eocene, Paleocene and Upper Cretaceous rocks. The Eocene-Paleocene Hanna and Ferris formations consist of up to 20,000 ft (6100 m) of organically rich lacustrine shales, coals, and fluvatile sandstones. The Upper