Genesis of Sediments of Stratum YuK-10 of the Sherkalin Zonal Cyclite of Talin Field Based on Texture

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The main pay in Talin oil field is stratum YuK-10, which is in the lower part of the Tyumen Formation. This field is located on the southwest margin of the Krasnoleninsk arch, which is in the west-central part of West Siberia.

Stratum YuK-10 is widely distributed, in contrast with underlying stratum YuK-11 which is restricted to downwarps of the basement surface. YuK-10 is divided by a thin (0-4 m) clay bed into two sandy beds; above is YuK-10\1 and below is YuK\2.

The texture of core samples was studied. Location of these samples in the section is shown in figure 1. A geophysical log for the stratum in well 5673 is illustrated also in the figure.

At the base of YuK-10 are coarse-grained to conglomeratic sandstones with pebbles up to 3 cm in diameter (sample no. 1). These are clearly river channel deposits. Higher in the section are sandstones of the same origin but with smaller grain size.

In sample no. 2 coarse-grained sandstone is overlain by siltstone containing coaly plant fragments. These are flood-plain deposits.

Further up in the section sample no. 3 reflects the development of flood plain deposits, where coal bed are present. This completes stratum YuK-10\2.

The sediments of the lower part of stratum YuK-10\1 are conglomerates (samples nos. 4 and 5), which contain clay fragments ripped up from the underlying clay divider. Some cross bedding is present in sample no. 6.

The channel deposits of nos. 7 and 8 pass upward into flood plain deposits in sample no. 9.

Overlying YuK-10\1 is a thick clay cover. Then comes stratum YuK-9, which is fine-grained sandstone.

The river channel deposits, largely sandstone, are characterized by negative anomalies on the SP log and by higher values on the resistivity log. The flood plain deposits, largely clays with coaly plant detritus and coal beds, have positive SP anomalies and lower values of resistivity.

The deposits that comprise stratum YuK-10 are thus cyclic alluvial material, each consisting of a lower river channel facies that grades upward into flood plain deposits.

If these rocks are of marine origin, as some investigators think on the basis of microfauna in the clay beds, then the exploration strategy will have to be different.

ACKNOWLEDGMENTS AND ASSOCIATED FOOTNOTES

From Maksimov, 1987 - Talin field. Discovered in 1976 and is now shut in. Depth to pay is 2482 m. Formation pressure is 22,8 MPa, formation temperature is 95°C, and initial yield was 94 tons per day of oil.

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