

The two former places are within the foot-hill belt of sharper folding and light oils; the well east of Edmonton is in the nearly flat gas-bearing field which lies east of the great trough or syncline; and the two last are in the vicinity of oil-seepages which are presumed to come from a dolomitic portion of the Devonian strata.

Other wells are here and there also being put down in the Southern Alberta foot-hills, in the area east of Edmonton, at High Prairie near Lesser Slave Lake, and on Lower Peace River.

APPENDIX C.

THE MAP.

In order to show the country traversed and give some illustration of the geology it has been necessary to compile a map or tracing from various sources. The nature of the work did not permit much surveying or map-making, but some corrections have been made and some additions.

The Pre-emptors' Map, No. 3E, 1918, of the Peace River Sheet was used as a base for the tracing and some additions made south of its termination on Rocky Mountain Lake.

None of the maps are correct in places, especially of the country between the East Branch of Pine River and the Kiskatinaw River. Also Flat Creek and Moose Lake are placed too far south on current maps.

Using the Pre-emptor's Map No. 3E, after shifting its latitude lines (which were wrong) and expanding it southwards on the same scale of 4 miles to the inch, I have put on it as many details as seem needed at present.

The St. John shales, which seem to be a vital factor in working out the geology, are shown along the lines of traverse and in the deep valleys by a yellow colour, which will show up on blue-prints.

The cross-section illustrates the undulating character of the strata and the way that the deep valleys have been cut through the crust of the Dunvegan sandstones into the underlying St. John shales; these shales probably cover wider areas than marked on the map, but the uncoloured spaces between them are mountain or upland masses of Dunvegan sandstone, with remnants of Smoky River strata here and there.

The Bullhead sandstones do not appear eastwards of the double-dotted line which passes Hudson Hope. They underlie the St. John shales.

Elevations are given from readings of a more than usually reliable aneroid barometer. Moberly Lake is accepted as it is on the maps. Very little precise levelling has been done west of Dunvegan or St. John, and the elevations given on the tracing may be accepted as more exact than any heretofore. Such elevations are valuable in working out a structure where the strata are gently inclined or undulate.

Geological maps can best be made when there is a fairly accurate and detailed topographical survey of the district to put the geology on, and this must be remembered if the tracing is found somewhat sketchy.

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