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Canada's Oil Sands and Heavy Oil: The Future is Now

Canada, with 1,700 billion barrels, has one of the largest resources of oil sands and heavy oil in the world. The bulk of Canada's resources are classified as oil sands, with no commercial inflow to a well at reservoir conditions. In contrast heavy oil, which forms a smaller portion of Canada's resources, has primary production.

Canada's oil sands (bitumen) resources are located in northern Alberta. Almost all of the bitumen occurs in sands of the Lower Cretaceous Mannville Group, with a minor portion (380 billion barrels) in Devonian carbonates. Oil sands are exposed along river valleys in the Fort McMurray area, where the bitumen is extracted by surface mining. The oil sands extend downdip to depths of about 2,300 feet in the west (Peace River) and south (Cold Lake) where in situ bitumen production is attained with thermal Enhanced Oil Recovery technology. The development of Steam Assisted Gravity Drainage (SAGD) has greatly accelerated in situ production.

The heavy oil deposits are situated in east central Alberta and extend into western Saskatchewan. The deposits are a downdip extension of the oil sands and occur where the Mannville Group is generally deeper than 1,600 feet.

Heavy oil production is currently about 700,000 barrels of oil/day. Oil sands currently contribute about 425,000 barrels of oil/day from mining and about 200,000 barrels of oil/day from thermal in situ projects. However, many new mining and in situ (mainly SAGD) projects have been announced and predictions range up to 1,650,000 barrels of oil/day by 2015.