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Progress of oil shale exploration in Thailand in Phase 2

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The feasibility study for development and utilization of Mae Sot oil shale in Thailand is a result of cooperation between two Thai agencies, the Department of Mineral Fuels (DMF) and the Electricity Generating Authorities of Thailand (EGAT). The investigated area covers 104 km² around Ban Huai Kalok, and includes data from 16 boreholes. There are two goals of this study: to evaluate the potential for 1) power generation and 2) shale oil extraction from oil shale. Combustion tests on 825 oil shale samples result in an average heating value of 902 kcal/kg (including only samples with ≥ 500 kcal/kg). The ash and moisture contents vary from 60-70% and 2-14%, respectively. Shale oil extraction results for 332 oil shale samples show oil yield of 23 gallons/ton for good grade and 5.5 gallons/ton for low grade. From Rock Eval pyrolysis, the average total organic carbon (TOC), Carbon and shale oil quantities from retorting at temperatures from 550-600°C are 7.99%, 11.32% and 72.44 kg/ton, respectively. From this study, the thickness is quite thin, varying from 0.6 – 3.8 m. There are 13 seams classified by geophysical log interpretation, but only 2 major seams are the focus for further study. Furthermore, the reserve recalculation in the high potential area of about 18 km² is about 1,092 million tons. This year further studies are under way on shale oil extraction in both laboratory scale and bench scale in cooperation with the Colorado School of Mines and UMATAC Industrial Processes, ATP Systems Division of AECOM Canada Ltd.