

Environmental Protection in Oil Shale Processing

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Oil shale belongs to lean and environmentally challenging fossil fuels, however, it is a mineral with high potential. Leanness of oil shale is determined by its low organic matter content (10-40%), which yields considerable amount of wastes when utilized. On the other hand, the potential of oil shale lies in the fact that the explored oil shale resources, when converted into synthetic fuel produced in thermal processing, exceed explored petroleum reserves by several times. In this case, the ecological aspects of thermal processing are imperative and should be based on the following principles, developed according to the vast experience of oil shale processing in Estonia:

- I Oil shale is to be processed in an integrated way with its organic and mineral components utilized at maximum efficiency.
- II Technology of oil shale processing is to be flexible in respect to quality of processed raw material.
- III Oil shale processing wastes must not cause either short-term or long-term environmental pollution.
- IV Consumption of natural resources (water, air, soil) used by oil shale processing is to be minimized.

The ecological risks of oil shale based synthetic petroleum production can be greatly reduced when a comprehensive approach to technology selection is used. The report contains distinctive environmental features of various oil shale processing technologies.