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OIL SHALE OCCURRENCE IN SOUTH VOLGA REGION, RUSSIA

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Volgograd, 2006





Introduction

- *The South Volga oil shale basin is located in the eastern parts of Saratov and Samara Regions*
- *The oil shale is Late Jurassic in age; productive rocks consist of several layers up to 0.9 m in thickness interbedded with inert shale of 2.5-4.0 m in thickness.*
- *Proved amount of oil shale is up to 55 billion tons; recoverable reserves of oil are put at 5 billion tons*
- *High content of sulfur, up to 9-11%*
- *Exploitation of South Volga Basin shale began in the 1930s, but the use of such shale has been abandoned owing to economic and environmental problems.*

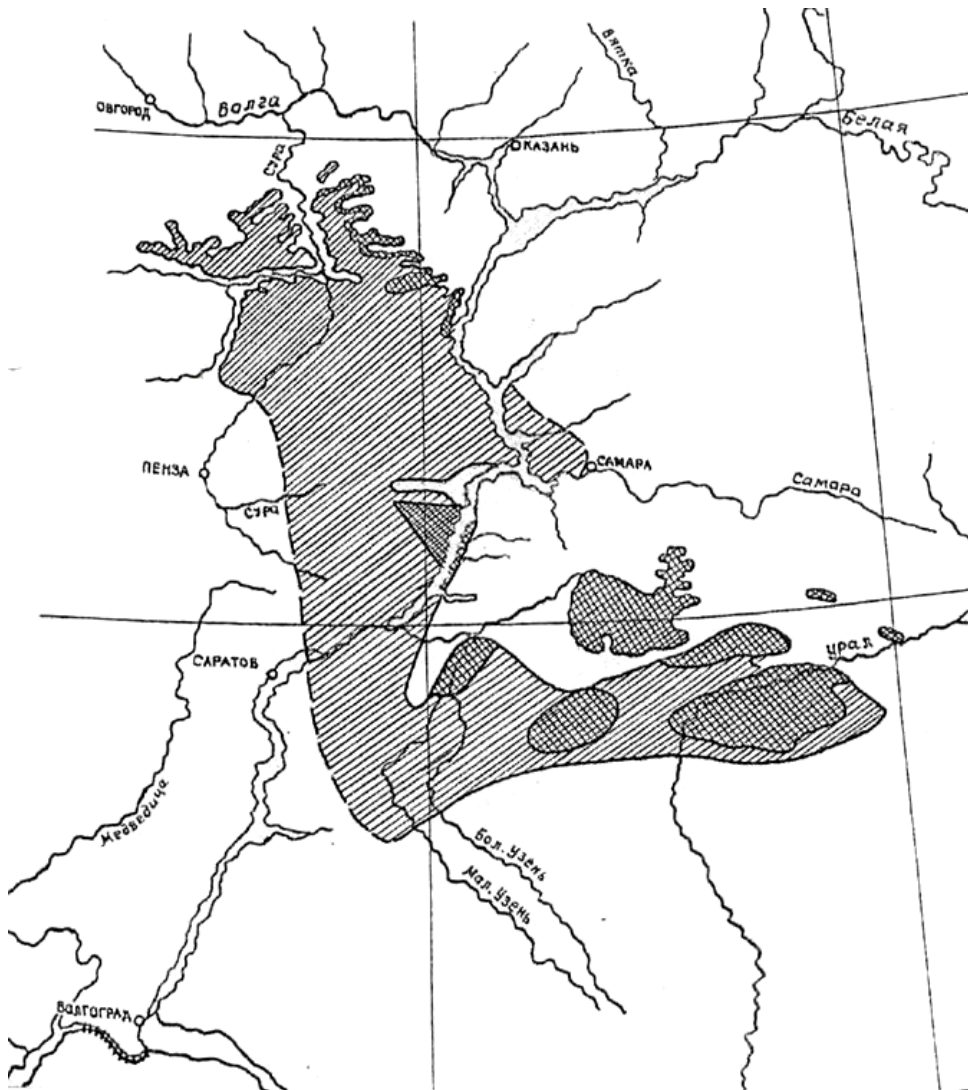




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OIL SHALE LOCATION IN THE SOUTH VOLGA REGION



Field	Kerogen composition, wt%				
	C	H	S	N	O
Saveljevskoe	62,8	7,9	9,7	0,5	19,6
Perelub	68,1	9,2	11,0	2,5	10,3
Konsebin	65,0	8,2	8,4	1,7	15,2
Obchiy Syrt.	67,0	8,0	7,7	1,7	12,4





Origin of oil shale: effusive and sedimentary stages

- *Tectonic activation destroys oil accumulations*
- *Hydrocarbons migrate up to the seafloor and rise to the surface*
- *Biodegradation and sorption of hydrocarbon particles by shale*
- *Buoyancy loss and sedimentation*
- **Contribution to this hypothesis**
- *Correlation between tectonic activity and black shale accumulation around the World*
- *Numerous oil and gas seeps on the surface and on the seafloor (seabed pockmarks, mud volcanoes, hydrothermal vents etc.)*
- *Correlation between sulfur content in oil shale and hydrocarbons in different sedimentary basins*

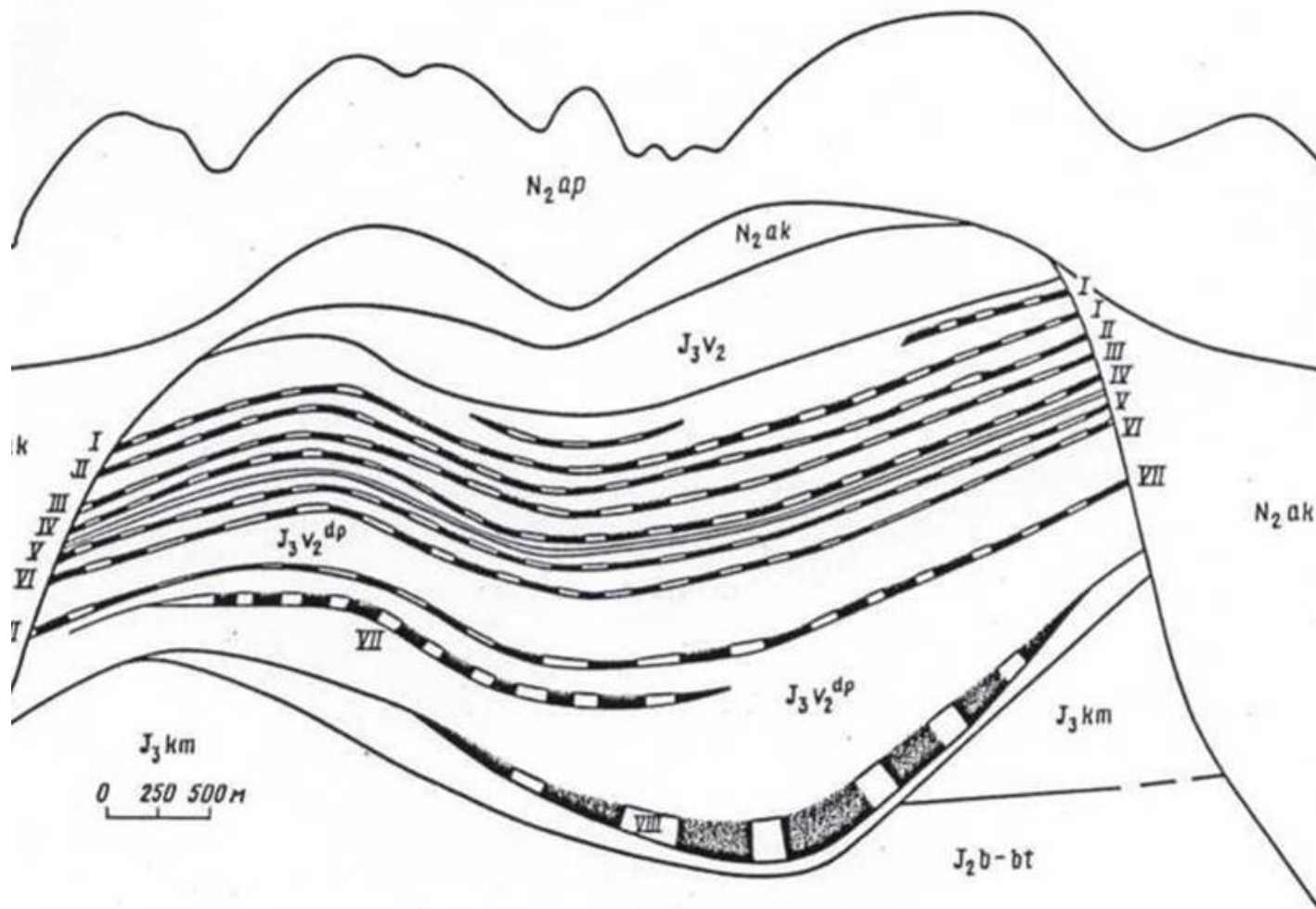




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CROSS-SECTION OF THE PERELUB FIELD

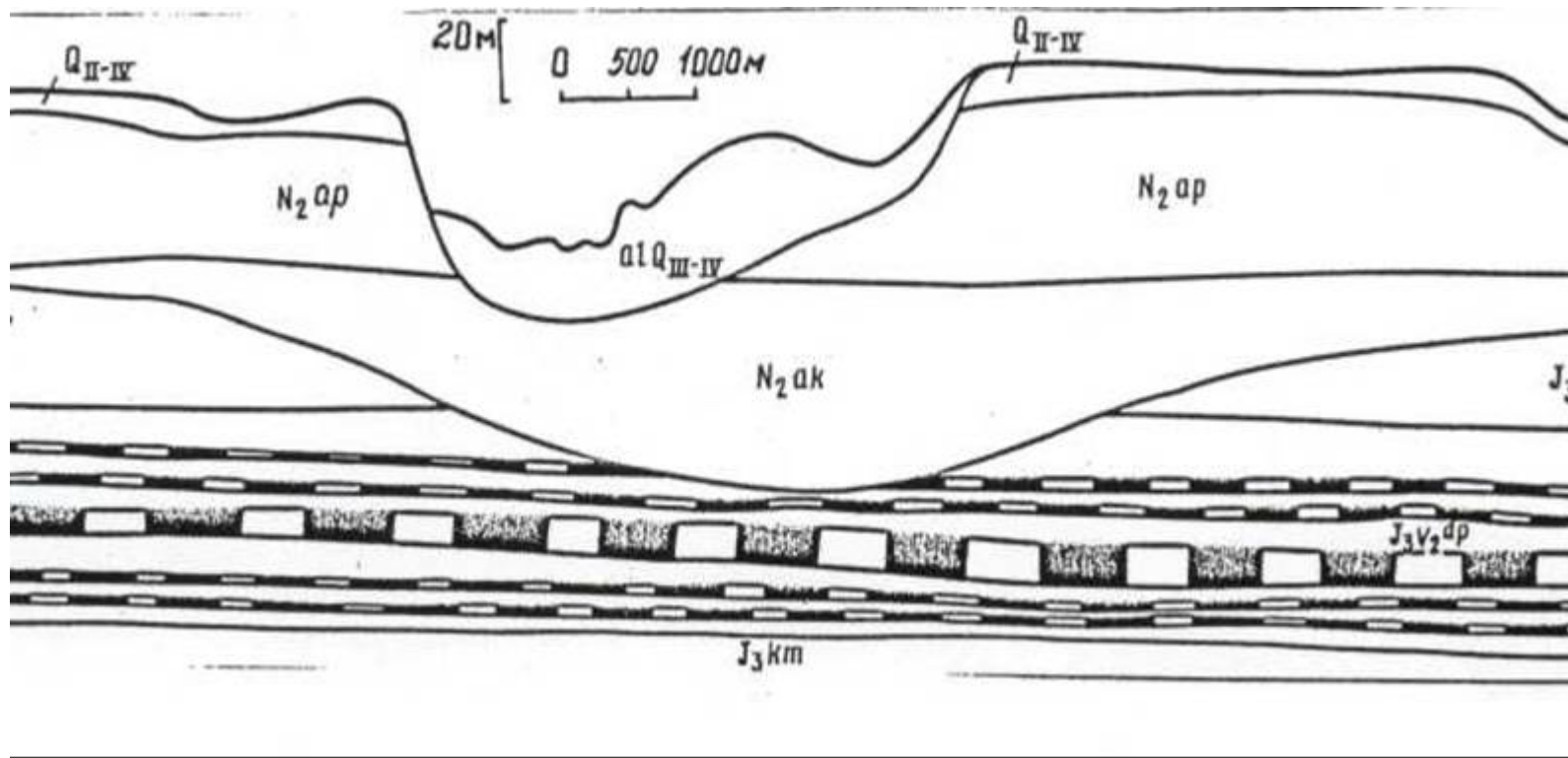




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CROSS-SECTION OF THE KONSEBIN FIELD

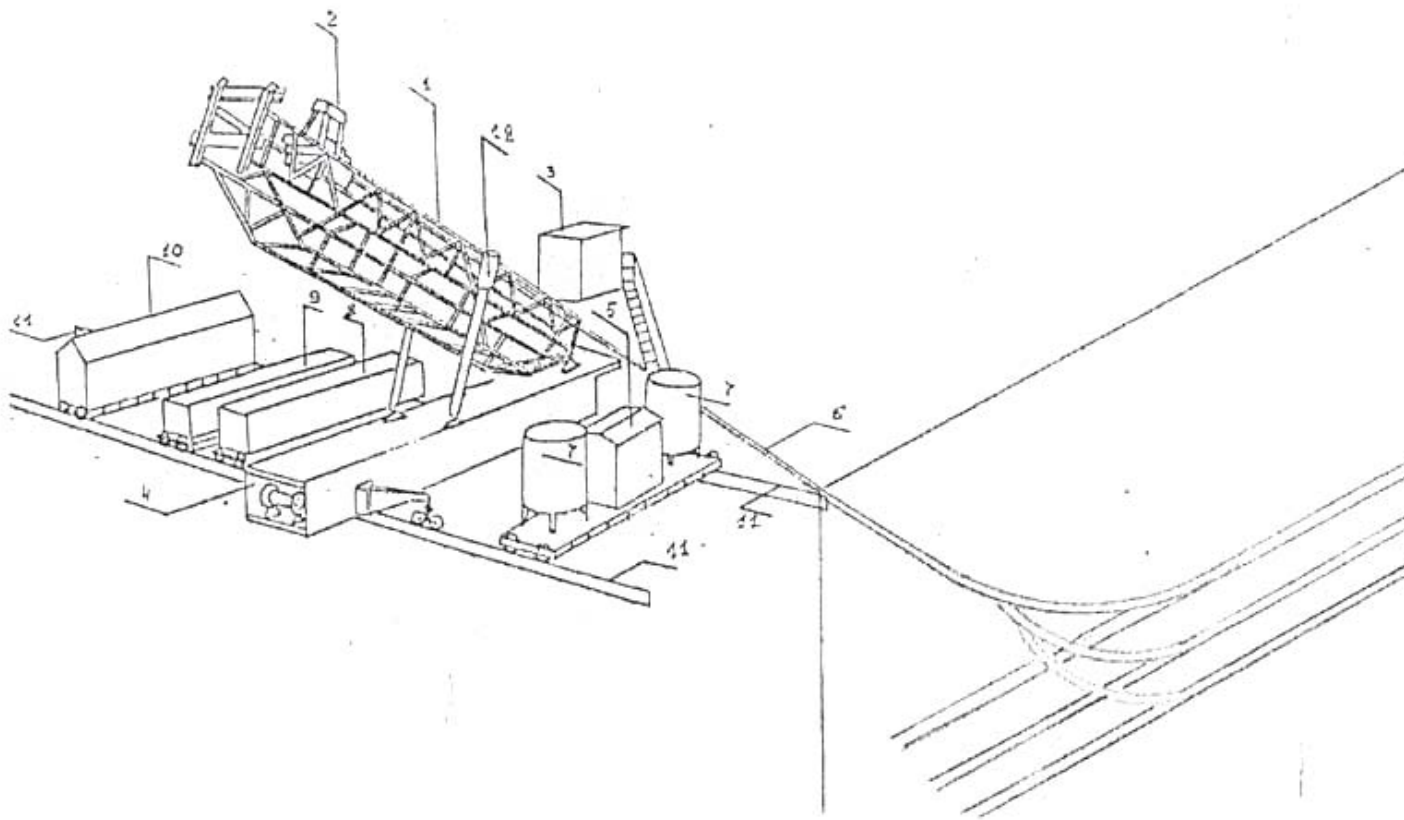




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RECOVERY OF OIL SHALE BY HORIZONTAL WELLS, PERELUB MINING COMPANY





Conclusion

- 1. Proved amount of oil shale is up to 55 billion tonnes; recoverable reserves of oil are put at 5 billion tonnes.**
- 2. The exploitation of South Volga Basin shale began in the 1930s but the use of such shale has been abandoned owing to economic and environmental problems.**
- 3. The different feature of shale is high content of sulfur, up to 9-11%. Production of high quality organic sulfur compounds can accelerate the projects of hydrocarbon recovery from shale.**
- 4. Now some projects of shale oil processing are under consideration. Combine schemes (on surface and in-situ heating) are very prospective.**

