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Meeting Paper



**On Bromide Microconcentrations
Determination in Natural Rock Salt**

by

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Spring 1998 Meeting
New Orleans, Louisiana, USA
April 19-22, 1998

QUICK DETERMINATION OF BROMINE MICROCONCENTRATIONS IN NATURAL ROCK SALT

(Originally: "On the brom microconcentrations determination in natural rock salt")

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ABSTRACT

An enhanced technique for obtaining bromine microconcentrations was proposed, backed by analysis of core samples at Rossoshin and Romanov fields. Bromine content was shown to be in good agreement with carnallite content in natural rock salt. The obtained data have been used for correlations between different parts of halite sedimentary sections of fields targeted for exploration and for underground storage construction.

Extensive construction of underground gas and petroleum product storage facilities in rock salt massif structures has led to resumed interest in analysis of bromine microconcentrations in salts, brines and formation water. Development of a fast-track method was spurred by the following objectives:

- field identification of a moment when constant composition of bromine and chlorine in brine is achieved while pumping off brine strata – addressed in terms of dumping construction brines;
- evaluation of hydrogeology conditions in a salt stratum under exploration while choosing optimum section segments suitable for the storage;
- partitioning and correlation of rock salt strata between holes and areas, broken down by bromine content in rock salt;
- identification of structural and tectonic fault areas in salt formations.

The proposed fast-track method is built around development of a bromine ion redox-driven measurement technique proposed by S.K. Chirkov¹ with subsequent enhancements by V.S. Ogiyenko².

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