



# Geowissenschaftliche Methoden – Datenbank (GeM-DB) – a basis for planning surface exploration programs

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**Abstract.** In phase II of the German site selection procedure for a final repository site for high-level radioactive waste, identified siting regions will be explored above ground. For each siting region, different geoscientific data exist, resulting in various exploration requirements as results of the representative preliminary safety analysis. The exploration requirements, i.e. exploration objectives (Kneuker et al., 2020) and parameters, are based on a legal foundation, especially sections 22–24 of StandAG (2017). The exploration requirements in turn define the methods to be used for surface exploration of siting regions to collect all data needed for the further-developed preliminary safety analyses at the end of phase II.

Commissioned by the Federal Company for Radioactive Waste Disposal (BGE), the Federal Institute for Geosciences and Natural Resources (BGR) is developing a database, GeM-DB, which allows the search for different geophysical and geoscientific exploration methods. Among the exploration methods are airborne, ground and borehole methods as well as investigations on obtained samples, e.g. from drill cores. The database entries consist of a general description, different attributes and an evaluation of the suitability and applicability for (1) the different host rocks (claystone, crystalline rock and rock salt) and (2) the exploration objectives deriving from the legal foundations, especially the exclusion criteria, minimum requirements and geoscientific weighing criteria as stated in sections 22–24 of StandAG (2017). This link is the key element of the database and a unique compilation of the collective knowledge of BGR experts. Certain filters and selection options allow queries of the database content, for instance to generate host rock-specific sequences of exploration methods. These sequences of methods can be used as a basis for the exploration programmes to be planned by the BGE.

## References

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StandAG: Gesetz zur Aufsuchung und Auswahl eines Standortes für ein Endlager für hochradioaktive Abfälle, Standortauswahlgesetz vom 5. Mai 2017 (BGBl. S. 1074), das zuletzt durch Artikel 12 Absatz 16 des Gesetzes vom 20. Juli 2017 (BGBl. S. 2808) geändert worden ist (Standortauswahlgesetz – StandAG), 2017.