

# Research projects in and around the water protection areas of Veitur Utilities and ON Power

Knowledge is lacking in groundwater flows in the water protection area of Veitur Utilities and ON Power. It has been decided that research will be undertaken to better prepare for land use and water management decisions, as well as to ensure the quality of drinking water into the future.

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## Water protection for the Capital Area

- Continuation of collaboration with Hafnarfjörður Municipality on analysis of the effect of Veitur Utilities and the Kopavogur Municipality water production of water resources in Hafnfjörður
- Increase in number of water level meters in monitoring holes in the vicinity of the capital area to better understand the effect of water extraction on groundwater level and groundwater flow
- Annual revision of the groundwater model for the capital area
- The first phase finished 2019 on analysis of micro-organisms DNA in surface water, soil and groundwater to better understand the relationship between microbial contamination and environmental factors.
- Research on microplastics in drinking water of Veitur Utilities, HS-Orka and Norðurorka was completed in 2019. Results show that the number of microplastics in drinking water is very low. Aimed at writing science article
- A new model to simulate the spread of pollution in groundwater during potential oil spills was finalized 2019. Results and model are being used to update action plans and response plans
- Research on real-time measurement of microbial flora in water using a cell flow monitor for quality control and water utilization. Increased sampling to better understand the relationship between weather events and microbes
- Measuring weather factors along with temperature and humidity in the soil to better understand the context of weather and microbial contamination
- Watering and leaching around the water extraction wells parallel with real-time microbial measurements in the wells to investigate their exposure to surface water pollution
- Prehistoric metrics used to assess the interaction of climate change in Reykjavik and the frequency of precipitation and flood events in Heidmörk
- Modelling to understand the effects of landscape and soil layers on groundwater flow, surface water and water treatment

## Water protection in the Grabrokarhraun Lava

- Research on the interaction of environmental factors, water utilization and water quality in Grábrókarveita utility following microbial contamination in October 2019. Report published on Veitur Utilities website

## Water protection in the Hengill Area

- Increasing number of water level meters in monitoring wells in the vicinity of the capital area to better understand the effect of water extraction on groundwater level and groundwater flow

- Annual revision of the groundwater model for the capital area
- Groundwater chemical monitoring in the vicinity of the geothermal power plants to monitor the potential impact of geothermal energy on the groundwater resource
- Tracer test in Nesjahraun Lava to highlight the flow of geothermal water from the Nesjavellir Geothermal power Plant