



## Fern Beetle-Moorcroft Geologist

### Education

- B.A., Geology with honors, Haverford College, 2014
- Study Abroad, University of Cape Town, 2013

### Registrations/Affiliations

- Geological Association of New Jersey (GANJ)

### Contact Information

- [fbeetle-moorcroft@hrswater.com](mailto:fbeetle-moorcroft@hrswater.com)
- [www.HRSWater.com](http://www.HRSWater.com)
- W: (303) 462-1111

### Experience Overview

Ms. Beetle-Moorcroft has experience as a hydrogeologist and geophysicist in both the public and private sectors. She has field experience conducting pump tests, water sampling, and geophysical surveys (both near surface and borehole). This includes packer tests, water level surveys, seismic surveys, resistivity surveys, Electromagnetic Induction (EMI) surveys, and working with a plethora of data loggers.

Ms. Beetle-Moorcroft has further experience with geologic, hydrologic, and geophysical data interpretation and analysis, geologic cross-section construction; GIS map construction, and numerical modeling

### Representative Experience

- Conducted pump and packer tests, as well as water quality data, on a monitoring well of geologic interest in Hunterdon County, NJ
- Created a USGS 7.5 min bedrock quadrangle map and cross section for Monmouth Junction, NJ. This involved collecting rock type, bedding, fracture, and fault data at over 300 field stations; determining unit contacts and digitizing shapefiles for station and unit area; and utilizing adobe illustrator to finalize the map
- Collected and analyzed offshore seismic and vibrocore data from Atlantic County, NJ using sonarwiz, a seismic interpretation software, and surfer, a contouring software to locate and calculate sand shoal volumes
- Logged three monitoring wells and collected outcrop data in Passaic County, NJ; analyzed outcrop and borehole bedding and fracture data sets to determine regional trends
- Conducted a salt contamination study in Warren County, NJ which involved a resistivity survey, an EMI Survey, and geophysical logging: optical, gamma, caliper, and fluid conductivity. Water quality measurements were taken using a multi-parameter water quality probe; TDS, pH, ORP, temperature, and turbidity.
- Collected raw surface water and groundwater samples as part of a statewide synthetic organic compound (SOC) sampling event
- Analyzed gamma logs from several monitoring wells at a landfill in southern NJ; developed a geologic cross section
- Study abroad research associated with the University of Cape Town involved looking at the impact of changing crops on soil characteristics. Specifically, the project focused on the impact of the transition from 'grain to grape' post-1994 on soil quality.
- My undergraduate thesis associated with Bryn Mawr and Haverford College focused on terrain accretion in the Western Cordillera (northern California and Southern Canada). The study utilized field measurements and paleomagnetism data to determine the origin location of the terrains. This involved using extensive testing to determine the magnetic properties of the magnetic minerals present and Adobe Illustrator to generate several figures.

## Presentations and Papers

- Beetle-Moorcroft, F., in press, Volume 1: What's going on down there? A peek into the ground using modern near surface geophysics: NJGWS Information Circular.
- Beetle-Moorcroft, F., in press, Volume 2: What's going on down there? A peek into the ground using modern borehole geophysics: NJGWS Information Circular.
- Beetle-Moorcroft, F, Monteverde, D., and Stanford, S., 2017, Bedrock geologic map of the Monmouth Junction Quadrangle, Somerset, Middlesex, and Mercer Counties: State Map.
- Beetle-Moorcroft, F. et al, 2016, Chapter 1: Teachers Workshop: Fractured bedrock characterization methods using oriented borehole imagery: GANJ 2016 Annual Meeting.
- Beetle-Moorcroft, F., 2016. New Innovation celebrates the 20<sup>th</sup> Century of the offshore program: Unearthing New Jersey, vol. 12, No. 2.