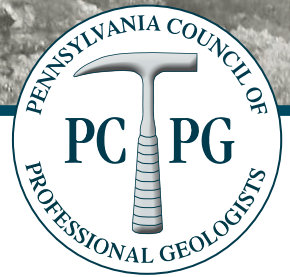


**What does a
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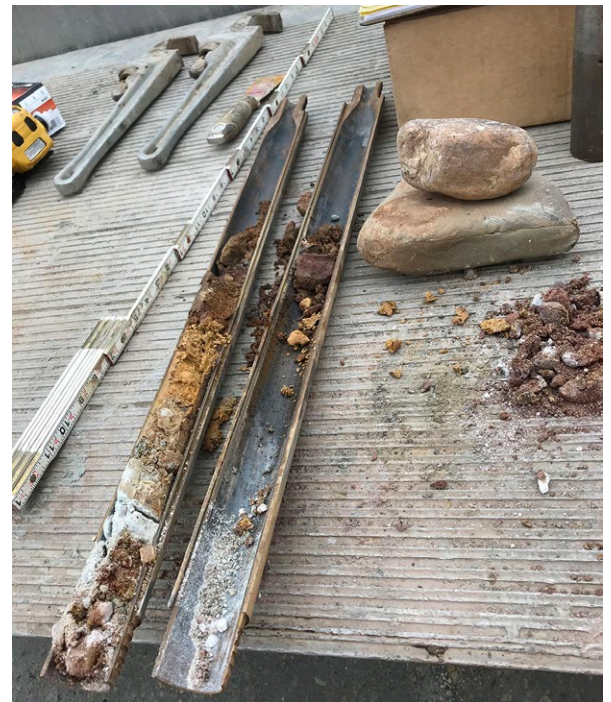
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PA ENVIRONMENTAL CLEANUP SITE

A Professional Geologist (PG) works on environmental cleanup project sites to characterize the geology/hydrogeology, delineate the extent of contamination, evaluate remedial actions, and guide the project through the regulatory process.

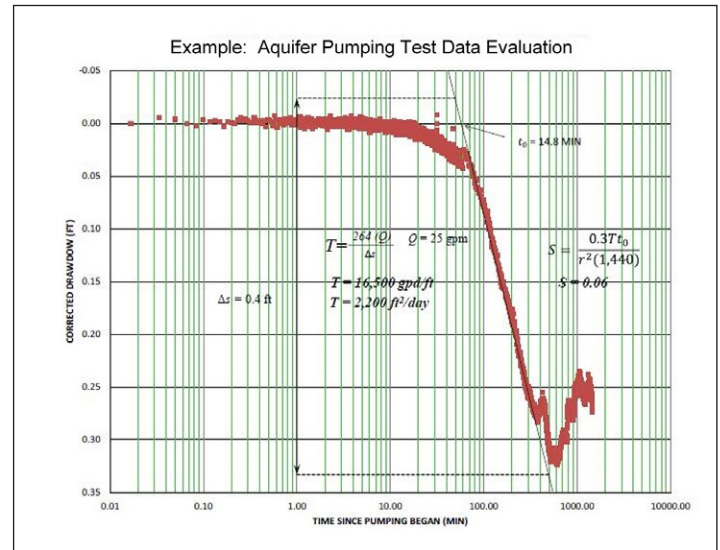
- The PG investigates the “Who, What, Where, When, How” at a cleanup site. What was released? When did it happen? How was it released? Where has contamination moved/migrated? Who/what does it affect? How can it be remediated, if needed?
- PGs collect information about a project site not only through field work, but through desktop review and research activities. PGs may review prior environmental reports, records on prior site use, release activities and ownership, or aerial photographs over various years, topographic maps and geologic publications.
- Activities that should be prepared by or performed under the direct supervision of a PG include but are not limited to: Investigations and assessments of groundwater contamination; preparation of sampling and analysis plans; design, analysis and interpretation of aquifer test data; preparation of boring and well logs; creation of geologic cross sections and fence diagrams; and preparation of groundwater contour and isopach maps.
- PGs go into the field to better understand the geology and hydrogeology of a project site. Field activities include borehole logging (classification of soil and bedrock structure and lithology), aquifer testing, collection of field parameters, and identification of potential pathways for contaminant migration to potential receptors.
- Field work by other environmental team members is often conducted under the direction of a PG. Field work may include collection of soil, groundwater, air, surface water and sediment samples for laboratory analysis of various contaminants.
- PGs may also be responsible for field oversight of specialty subcontractors, such as drillers, construction firms, and firms that do geophysical and geotechnical work, which also employ PGs.
- A PG relies on strong technical writing skills. PGs may write or review technical reports. Simple reports may include routine periodic updates (e.g., quarterly groundwater monitoring reports). Complex reports may present a comprehensive subsurface characterization of a site over time, the fate and transport of contaminants, evaluate risk to human and ecological receptors, future cleanup plans, or demonstrate attainment of regulatory requirements for closure.
- Certain reports should be reviewed and certified (stamped or sealed) by a PG if they contain any of the following: Construction details for boring logs and monitoring wells, groundwater contour maps, geologic cross-sections, stratigraphic columns and lithologic



Typical split spoon sample.

descriptions, evaluation of soil and groundwater sampling data, aquifer test data, groundwater characterization, geophysical/geostatistical/groundwater modeling, and capture zone analysis of groundwater treatment systems.

- PGs working on cleanups sites are in both the private and public sectors. Both Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency employ PGs to review work performed by environmental consultants and to oversee the project from the regulatory perspective.
- Environmental cleanup projects in PA usually involve the DEP Land Recycling Program (Act 2), Special Projects (including Brownfields – see *What Does a Professional Geologist do for PA Brownfields Development*), Hazardous Sites Cleanup Program (HSCP), Waste Management Program, Clean Water Program, Wetlands and Waterways Program, Active and Abandoned Mining Operations, or Corrective Action Program of Storage Tank sites.



The PG typically works with chemists, biologists, safety professionals, industrial hygienists, risk assessors, construction specialists, drillers, laboratory professionals, general contractors, engineers, regulatory personnel, attorneys, property owners, and the public.

Work Environment:

Both office and field tasks. Varying outdoor conditions. Field work may require the use of personal protective equipment (PPE) due to environmental hazards.

Work Schedules:

May include irregular and extended hours. Often, the number of field days becomes fewer with increased experience.

Helpful Skills & Experience:

Good communication: You will often deal with a variety of stakeholders including regulators, property owners, public, facility personnel, and contractors. Regulatory knowledge: Understand the state, federal and local regulations that govern the work. Technical writing skills: Reports you write or review may become part of the public record and must relay information in a clear and concise manner.

A strong understanding of hydrogeologic concepts is important, but you will also use your knowledge of geochemistry, geomorphology, soils, and stratigraphy.

Tools of the Trade:

Basic writing/tabulating software, modeling and analysis software, air quality meters, water gauges and meters, sampling equipment, chain of custody, appropriate PPE, GPS, and always a way to record notes and data (e.g. field book or electronic tablets).