

Senior Environmental Geologist

Diplom-Geologe (MSc.)

Professional Experience

Research

2003–2007

- Implementation of a Natural Attenuation (NA) approach in a widespread contamination of an urban aquifer caused by chlorinated hydrocarbons (CHC). Federal funded research project within a nationwide framework with private public partnership.

The unconfined aquifer of a densely populated urban area (app. 4 km²) is contaminated with CHC originating from a former chemical wholesaler.

The objectives of the project were to

- set up and evaluate a quality monitoring network,
- test cutting-edge techniques for site exploration, monitoring. . .
- identify different reaction zones,
- predict the fate of the plume,
- advise and guide local regulators

My missions:

- Planning: Set-up of a quality assured 3D monitoring well network (>140 wells) for the special needs of NA evaluation, organization of large drilling and geophysics campaigns in urban areas
- Management: Human resources management, training and guidance of the sampling teams, planning of laboratory capacities, budget planning, organization and chairing of meetings and conferences
- Monitoring: Design, supervision and quality management of all kinds of sampling (water, soil, geophysics)
- Innovation: Introduction of fresh approaches to the project, interdisciplinary scientific networking
- Publications: Talks, posters, papers, presentations for scientists, administration, problem owners, national and international

2005–2007

- Synthesis, reductive capacity and transport issues of nano-Zero Valent Iron (nZVI) in contaminated natural aquifers.

Within a federal and in-house funded project concerning transport and remediation issues of nZVI in lifelike environments, my main interests and tasks were situated in the application of nanoparticles in real-life aquifers.

- Innovation: development of injection techniques
- Design: injection and sampling well design
- Site Monitoring: deployment, implementation and supervision, quality control
- Publications: Talks, posters, papers. . .

Current interests:

- Innovations in monitoring and remediation technologies, nanotechnology use in groundwater cleanup, transport issues of nanoparticles.

Professional Experience (continued)

Consulting

- 1999–2003
- Planning, supervision, leading, completion and reporting of groundwater and soil cleanup projects at an oil storage facility in Hamburg harbour with severe fuel-borne contaminations (Diesel, BTXE, MTBE). Geological site investigation, groundwater monitoring, groundwater and soil remediation concepts including air sparging, MNA. . .
- 1994–2003
- IT management and consulting in several projects (Data bases, GIS, intranet, internet)
 - Design and implementation of a cleanup concept for an underground fuel storage tank site including MNA
 - Remediation concepts, on-site work, consulting, reporting and completion of numerous projects (>100), primarily of the oil industry. Excavation, disposal management, groundwater monitoring and clean up.

Mentoring

- 2004–2007
- Master Theses:
 - Behaviour of nZVI in a CHC-contaminated aquifer. Batch- and column tests, injection methods, field test.
 - Column tests of different nZVI variations (pure, surface modified, carbon black supported. . .)
 - Geological mapping and 3D-modelling of an urban area in consideration of the contamination situation
- 2003–2007
- Students trainings, mainly french and german students, including:
 - Sampling and analysis of groundwater data
 - 3D-visualization of hydrogeochemical inventory in a contaminated aquifer

Technical Competence

Site Assessment

- Drilling
- Well design, planning of drilling campaigns, field supervision, quality management
 - Hollow Stem Auger drilling, percussion core sampling. . .
 - Direct Push drilling: EC-Logging, groundwater sampling, VSP. . .
- Monitoring
- Planning and supervision of monitoring networks
 - Design of groundwater monitoring networks, esp. in urban areas
 - Quality groundwater sampling design
 - Low-Flow-Methods
 - Passive Sampling Methods
- Geophysics
- Geophysical site assessment in collaboration with geophysical staff
 - Production: Seismic Profiling with Land Streamer methods
 - Downhole: γ -ray, EC, calibre, visual methods, particle tracking, VSP. . .
 - Experimental: TEM
Electric resistivity

Information Technology

- Writing
- MS Office, \LaTeX 2 ϵ , Open Office

Technical Competence (continued)

Drawing	<ul style="list-style-type: none">• CorelDraw, Gnumeric, Grapher (Golden Software), SigmaPlot (Systat), Origin (OriginLabs)
Modelling	<ul style="list-style-type: none">• Surfer (Golden Software), goCAD (Earthdecision), openGeo (3D-structure modelling)
Data base GIS	<ul style="list-style-type: none">• GeODin (Geological Database System), MS Access, SQL basic skills• ArcGIS, GRASS GIS (open source GIS)
Internet	<ul style="list-style-type: none">• everything internet related including data transfer, site building and mail transport
Misc.	<ul style="list-style-type: none">• Adobe Photoshop, diverse image postprocessing software

Professional Development

2003–2007	<ul style="list-style-type: none">• Senior Research Scientist, Project Manager: Landesamt für Bergbau, Energie und Geologie (State Authority for Mining, Energy and Geology). Hannover, Germany. Supreme authority in Lower Saxony
2002–2003	<ul style="list-style-type: none">• Senior Environmental Consultant: Grontmij GfL GmbH. Hamburg/Bremen, Germany. Europe-wide operating consultant
1997–2002	<ul style="list-style-type: none">• Senior Environmental Consultant: BGI AG. Hamburg/Kassel, Germany. Company of 50 people, 7 branches, listed on stock exchange
1994–1997	<ul style="list-style-type: none">• Environmental Consultant: Beratende Geologen und Ingenieure. Hamburg/Kassel, Germany.

Education

1994	<ul style="list-style-type: none">• Master of Science (Diplom-Geologe) at University of Kiel Topic of Master Thesis: Data Assessment and Statistical Analysis Methods Comparison of Long Term Groundwater Hydrograph, Spring Temperature and Spring Discharge Curves at a Final Storage Research Facility (Asse Salt Mine, Lower Saxony, Germany)
1988–1994	<ul style="list-style-type: none">• Studies in Geology and Applied Geology at Kiel University (Christian-Albrechts-Universität Kiel), Germany
1986–1988	<ul style="list-style-type: none">• Undergraduate studies in Geology at Clausthal University of Technology (Technische Universität Clausthal), Germany
1973–1986	<ul style="list-style-type: none">• Primary School and Gymnasium (Secondary School) in Clausthal-Zellerfeld, Germany

Miscellaneous

Languages	<ul style="list-style-type: none">• German (mother tongue)• English• French (basic skills)
Interests	<ul style="list-style-type: none">• Photography and Photodesign. Freelancing photographer• Travel, Music (former engineer of a band), Photo Art and Aesthetics

References

- Dr. Peter Röttgen
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Publications

- 2008, in prep. *Hoffmann, S., Kringel, R.*: Natural Attenuation Hannover-Südstadt – Endbericht zum Forschungsvorhaben. Hannover, Germany.
- 2007, in prep. *Hoffmann, S., Petersen, M.S., Dethlefsen, F., Wienberg, R., Kringel, R., Wegner, M., Wieschemeyer, M., Schlenz, B., Poggendorf, C., Blumöhr, R., Fischer, K.* (in Vorbereitung): 20 Jahre Erkundung des LCKW-Standortes Hannover-Südstadt – Erkenntnisse und Perspektiven
- 2007, subm. *Hoffmann, S., Beilecke, T., Werban, U., Leven, C., Engeser, B., Polom, U.* (eingereicht): Integrierter Einsatz von Scherwellenseismik und direct-push-Methoden zur Erkundung eines urbanen Grundwasserleiters (Joint application of shear wave seismics and direct-push methods in the site investigation of an urban aquifer). Grundwasser.
- 2007 *Dethlefsen, F., Kringel, R., Schlenz, B., Wienberg, R., Hoffmann, S., Engeser, B.*: Retardation through sorption of CHC on coal particles: from a working hypothesis to the key parameter. 3. European Conference on Natural Attenuation and In-Situ Remediation. 19. - 21. November 2007, DECHEMA, Frankfurt/M.
- 2007 *Kringel, R., Wegner, M., Wieschemeyer, M., Hoffmann, S., Dethlefsen, F., Schlenz, B., Poggendorf, C., Wienberg, R., Beilecke, T., Engeser, B., Blumöhr, R.*: Predicting Natural Attenuation of a large urban CHC-Plume to aid regulatory decision making. 3. European Conference on Natural Attenuation and In-Situ Remediation. 19. - 21. November 2007, DECHEMA, Frankfurt/M.
- 2007 *Wegner, M., Wieschemeyer, M., Hoffmann, S., Kringel, R., Dethlefsen, F., Schlenz, B., Poggendorf, C., Wienberg, R., Beilecke, T., Engeser, B., Blumöhr, R.*: Das Natural-Attenuation-Modell Hannover Südstadt als Entscheidungshilfe für den Vollzug. 9. Symposium Natural Attenuation, 21. - 22. November 2007, DECHEMA, Frankfurt/M.
- 2007, in prep. *Dethlefsen, F., Petersen, M.A., Hoffmann, S., Kringel, R., Wienberg, R.* (in Vorbereitung): Prozessidentifikation an einem LCKW-kontaminierten Aquifer durch Feststoffanalysen - Möglichkeiten und Einschränkungen
- 2006 *Beilecke, T., Polom, U., Hoffmann, S.* (2006): Efficient High Resolution Subsurface Shear Wave Reflection Imaging in Sealed Urban Environments. Proceedings (Abstracts) of Near Surface 2006, Helsinki, Finland 4. – 6.09.2006
- 2006 *Hoffmann, S., Kringel, R., Fischer, K., Beilecke, T., Polom, U., Kus, J., Vidal, A., Wehner, H.* (2006): Investigating NA-Reaction Zones in a Complex Urban CHC-Plume. In: Proceedings (abstracts) of the 4th Int. Battelle Conf. on Remediation of Chlorinated and Recalcitrant Compounds, May 24–27, Monterey, USA
- 2006, subm. *Altmaier, S., Lenne, S., Houben, G., Kringel, R., Hoffmann, S., Fischer, K.* (2006, eingereicht): Möglichkeiten und Grenzen der Grundwassersanierung mit reaktiven Nanopartikeln

Publications (continued)

- 2006 *Beilecke, T., Polom, U., Bunes, H., Cramm, S., Rode, W., Hoffmann, S., Rühak, W., Leven, C., Werban, U.* (2006): Near surface reflection seismics in sealed urban environments. BurVal Final Conference and Workshop, 29.-30.11.2006, Hanover, Germany.
- 2006 *Hoffmann, S., Fischer, K., Kringel, R., Kus, J., Vidal, A., Wehner, H., Polom; U., Beilecke, T.* (2006): Investigating NA-Reaction Zones in a Complex Urban CHC-Plume. In: Symposium In-Situ-Sanierung. Frankfurt a.M., 20.-21. Nov. 2006, DECHEMA
- 2005 *Wegner, M., Hoffmann, S.* (2005): Understanding natural attenuation processes: prognosis of NA processes in a widespread complex CHC-plume in an urban area. 2nd European Conference on Natural Attenuation, Soil and Groundwater Risk Management. May 2005, Frankfurt/M.
- 2005 *Fischer, K., Hoffmann, S., Blumöhr, R., Kringel, R.* (2005): Erkundung von Schadstofffahnen in urbanen Bereichen. bbr Fachmagazin für Brunnen- und Leitungsbau, 12, 70–77.
- 2005 *Wegner, M., Hoffmann, S., Wieschemeyer, M.* (2005): Modelling natural attenuation of a CHC groundwater contamination in Hanover/Germany. In: Proceedings (abstracts) of the 8th Int. in situ and on-site Bioremediation Symposium (Baltimore/MD), USA
- 2004 *Wegner, M., Hoffmann, S., Wieschemeyer, M.* (2004): Natural Attenuation of a Ground Water Contamination with CVOCs in Hanover/Germany. In: Proceedings (abstracts) of the 4th Int. Battelle Conf. on Remediation of Chlorinated and Recalcitrant Compounds, May 24-27, Monterey, USA
- 1994 *Batsche, H., Klarr, K., v. Stempel, C.* (1994): Hydrogeologisches Forschungsprogramm Asse: Abschlußbericht. GSF Forschungszentr. f. Umwelt u. Gesundheit. 1994