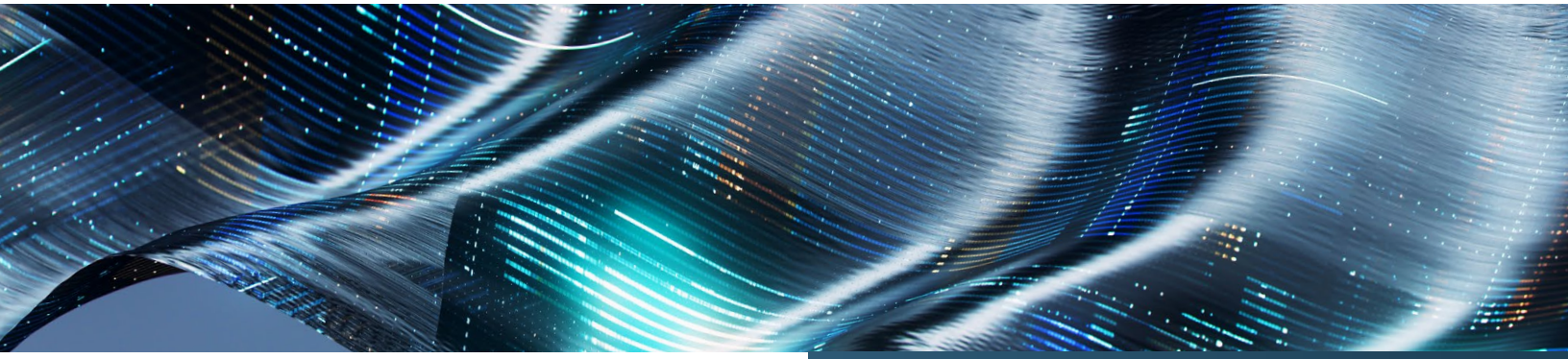
Transforming Subsurface Complexity into Advanced Understanding

For Hydrogeological and Contaminant Transport Evaluations



THE CHALLENGE

Complex aquifer matrices and dynamic flow regimes create significant uncertainty in contaminant transport, plume behavior and risk assessment. Conventional investigations often lack resolution to capture subsurface heterogeneity and evolving transport pathways, leaving critical data gaps unresolved. Addressing these challenges requires targeted, high-resolution data collection and advanced hydrogeologic analysis.

Key Challenges

- **Subsurface Heterogeneity.** Conceptual site models (CSMs) for complex aquifers create uncertainty for contaminant migration pathways, plume stability, and long-term risk evaluation.
- **Dynamic Interactions.** Groundwater–surface water interactions (GSI) complicate identification of contaminant transport mechanisms, discharge zones, and ecological receptors.
- **Emerging Contaminants.** Per and polyfluoroalkyl substances (PFAS) present challenges due to complex soil-to-groundwater leaching, variable transport, and evolving regulatory expectations.
- **Critical Data Gaps.** Conventional data collection may lack the spatial and temporal resolution to resolve CSM uncertainties and support defensible decision-making.

THE SOLUTION

Noblis brings together an impressive team of nationally recognized experts that refine the conceptual site model through advanced hydrogeologic and contaminant transport analysis that integrates complex site data into a defensible framework for decision-making. Our experts leverage extensive interdisciplinary, regulatory, and policy expertise, cutting-edge science, advanced data analytics for comprehensive evaluations, and tailored risk-management strategies. The result is a clear, data-driven path forward that supports efficient investigation planning, remedial strategy development, and stakeholder communication.

Noblis – Why Our Experience Matters

Our mission is to solve complex scientific and technical problems that benefit the public and advance U.S. National Security interests. We deliver exceptional scientific, technical, and engineering services for transformational solutions and breakthrough innovations that have enduring mission impacts. Noblis specializes in both internal and external research and collaboration – innovation and research are in our DNA.

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Key Capabilities

Noblis advances defensible solutions for complex subsurface challenges.

Groundwater-Surface Water Interactions (GSI) assessment industry best practices

- Our experts integrate a deep understanding of the multidisciplinary processes involved in GSI with comprehensive classification of hydrologic systems and transport mechanisms using innovative technologies and data collection methods to deliver highly defensible and technically rigorous assessments.

Conceptual site model (CSM) refinement

- Our experts develop and refine detailed CSMs of hydrogeologic frameworks, contaminant sources, migration pathways, and fate and transport for each site using a diverse set of data methodologies and visualization tools, including innovative PFAS forensics visualization techniques.
- Our experts quickly assemble historical and recent datasets using a dynamic and iterative process to provide innovative solutions for evolving customer needs.

Technical Oversight

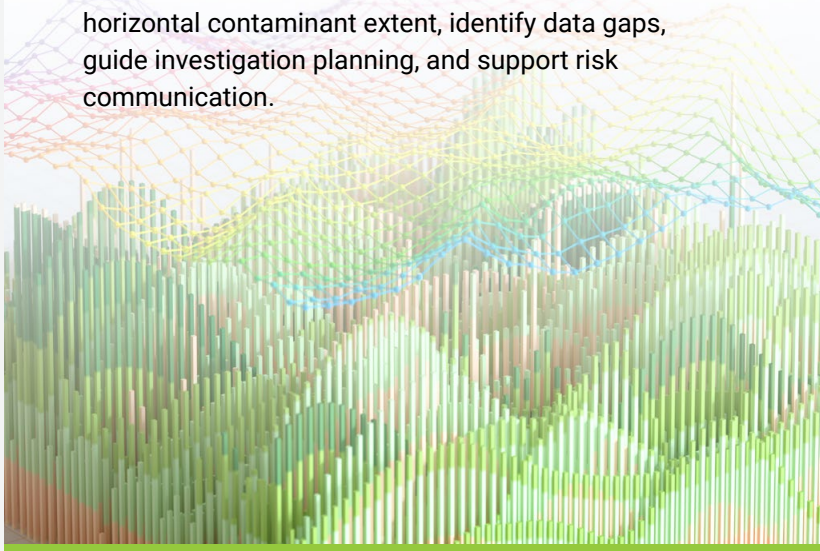
- By leveraging over ten years of experience with some of the most challenging Federal installations, Noblis brings nationwide understanding of investigation approaches and remedial options.
- Our experts drive our capability to build robust investigation scope and data management practices that focus on high-value data collection strategies that target key data gaps and ultimately a comprehensive understanding of site conditions while meeting regulatory requirements.

PFAS soil-to-groundwater leaching evaluation industry best practices

- Noblis is an industry-leading consultant at the forefront of PFAS behavior in the vadose zone with experience in developing best practices through academic, regulatory, and industry collaboration that integrate the latest data modeling tools and state-of-the-science research on retention processes.

3D Digital Twin Technology

- Our modeling and visualization approach integrates expert interpretation of interconnected, site-specific elements coupled with detailed hydrostratigraphic modeling to define vertical and horizontal contaminant extent, identify data gaps, guide investigation planning, and support risk communication.



ABOUT NOBLIS

Environmental contaminants like PFAS threaten citizens, their communities and our shared environment. Noblis delivers robust and innovative solutions for challenging environmental problems featuring legacy and emergency contaminants. Our holistic project management approach streamlines decision making and stakeholder communication. We design and conduct rigorous technical assessments and evaluations in a comprehensive policy, regulatory, and technical framework. Our programs are strategically planned, evaluated, and implemented using lessons learned to ensure implementable solutions.

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