

## Capability/Need

- **Highest-field** radiological NMR in world; to be part of **new EMSL Radiological Capability**
- Solids, liquids and imaging capability for the study of environmental and radiological samples.
- Experimental capability integrated with NMR spectral simulation programs and *ab initio* techniques to derive magnetic resonance parameters from first principles structures



## Science/Users

- Will allow **best sensitivity and resolution** of radiological samples by NMR
- Provides chemical state/structure information of contaminants
- Simultaneous measurements of chemical and biological interactions at complex interfaces.



## EMSL Strategy Alignment; Specifics

- Science themes: Geochemistry/Biogeochemistry and Subsurface Science; Biological Interactions/Dynamics; Science of Interfacial Phenomena
- Cross-cutting challenges: Unprecedented Resolution; Design/Synthesis of Complex Materials; Predict Biological Function; Linking Theory/Experiment; Bridging Scales
- EMSL capability area: NMR and EPR
- Anticipated availability: January 2011 (non-radiological) FY12 (radiological)
- Technical POC: David Hoyt