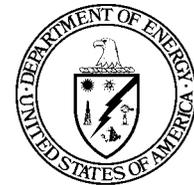


Early Warning Drilling Program DOE Sponsored Studies

Presented to:
Nuclear Waste Technical Review Board

Presented by:
Dr. Paul R. Dixon
M&O/LANL



U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

January 26-27, 1999

Saturated Zone Eh/pH and Hydrochemistry Testing by the USGS, LANL, and UNLV

- USGS:**
- 1) Saturated zone water major and minor element chemistry**
 - 2) Stable isotope signatures of SZ waters**

- LANL:**
- 1) Eh/pH studies of SZ waters (direct measurements)**
 - 2) Colloid and organic content measurements**
 - 3) Cl-36 analyses of SZ waters**

- UNLV:**
- 1) Eh/pH studies of SZ waters (redox pairs)**
 - 2) Groundwater tracing with trace elements (REE's)**

Geophysical Logging of the Nye Co. Wells by NEPO

Geophysical logs are being run on all Nye Co. wells drilled. Logs being run are: special gamma, gamma-gamma density, neutron-neutron, temperature, video, electric, spinner, etc.

Links of Saturated Zone Work to the Site Recommendation

- Invert data feeds to the saturated zone flow and transport process level models**
- Use of data in Performance Assessment abstraction and testing sensitivity analyses**

DOE Test Coordination and Sample Management Support by NEPO/TCO

- Yucca Mountain sample management personnel record, distribute, and track sample splits to all the DOE scientific investigators**
- NEPO/TCO coordinates all field sampling activities with Nye Co. as a single POC for the DOE**
- The TCO archives all the Nye Co. samples**

Laboratory Testing of Alluvial Sediments at LANL

Column sorption and transport experiments with alluvial sediments from various Nye Co. wells using real radionuclides

Conclusions

- **The Nye Co. well data will greatly enhance our regional saturated zone flow and transport model**
- **The effectiveness of the saturated zone alluvial barrier will be better evaluated and integrated into our defense-in-depth arguments**