

6. The Impracticable Rehabilitation of the LANL Characterization Wells.

The NAS prepublication report has a brief and incomplete description of the activities by LANL and DOE to rehabilitate the LANL characterization wells. In the NAS report, the rehabilitation is limited to a one-paragraph discussion as follows:

Because the construction of these wells was expensive, some \$1 million to \$2 million for each well (Broxton, 2006), LANL began work in 2006 to try to recover some of the compromised screened intervals (LANL, 2005d, 2006e). This rehabilitation effort is itself controversial (Gilkeson, 2006a,b). The New Mexico Environment Department's (NMED's) notice of disapproval of the Well Screen Analysis Report (letter dated September 18, 2006) indicated continued disagreement on a number of important issues regarding the rehabilitation work. p. 85.

The NAS committee's description of the rehabilitation effort as "controversial" is unacceptable. Instead, the NAS Final Report should describe the fact that the attempt to rehabilitate the compromised screened intervals is not warranted for the majority of the LANL wells because of the many factors that prevent the screened intervals from meeting the requirements for detection and long-term monitoring of groundwater contamination.

LANL and DOE began work in 2006 to rehabilitate the screened intervals in four of the multiple-screen wells without performing the in-depth study of all of the factors that are important to the future use of each screened interval for monitoring purposes. The four multiple-screened wells where rehabilitation was attempted are R-12, R-16, R-20, and R-32. Appendix A.16 presents the reasons why rehabilitation of well R-16 is not possible. In fact, at all four wells, none of the screened intervals installed in the regional aquifer can be rehabilitated because of the:

- 1). misplacement of the screened intervals in all four wells,
- 2). improper locations of the wells for the designated purpose *i.e.*, wells R-20 and R-32,
- 3). inability of the well redevelopment activities to remove the large quantity of drilling agents that invaded deep into the screened intervals of all four wells to form a new mineralogy with properties to mask the detection of many LANL contaminants from nuclear weapons research,
- 4). inability of the redevelopment efforts to remove the bentonite clay slough sediments that surround screen #4 in well R-16,
- 5). inability to produce reliable and representative water samples because of the continued use of the Westbay^R no-purge sampling system, and
- 6). finding of the NAS committee that the LANL scientists lacked the scientific knowledge to prove that the rehabilitation efforts were successful.

The rehabilitation activities of LANL and DOE are another example of the overall failure of the LANL groundwater protection practices and the NAS Final Report should describe this ongoing failure.