



Buckman Direct Diversion Project

*A joint regional project of the City of Santa Fe and Santa Fe County to build a reliable and sustainable water supply.*

## MEMORANDUM

July 6, 2009

TO: Buckman Direct Diversion Board

FROM: Norm Gaume, P.E., BDD Project Consultant  
Rick Carpenter, BDD Project Manager

SUBJECT: Status of Six Action Steps BDD Board Asked of DOE and LANL to Protect BDD Source Water Quality

In November 2007, the BDD Board sent a letter to the US Department of Energy (DOE) and Los Alamos National Laboratory (LANL) asking they take six specific action steps to address BDD water quality issues.

In early 2009, the BDD Board requested assistance from the New Mexico delegation to the U.S. Congress and from the New Mexico Legislature to obtain additional cooperation from DOE and LANL. Significant progress has been made subsequently, although the DOE/LANL response to one action item and some aspects of others remain in negotiation.

The status of each request is summarized below. One is complete. Four are in progress. Three of these have aspects that remain to be negotiated. One action step has no agreement to date. This status is as of the beginning of July 2009.

Stop migration of LANL contaminants to the Rio Grande and groundwater.  
Action Step 1. STATUS: In Progress.

The U.S. Environmental Protection Agency and the New Mexico Environment Department (NMED), under applicable federal and state law, have ordered DOE to implement numerous improvements to reduce contaminated storm water runoff to the Rio Grande, before the BDD begins operations. Both agencies requirements include performance monitoring and subsequent preventive actions where additional monitoring indicates additional steps are necessary to meet explicit and stringent limitations. These regulatory requirements satisfy the BDD Board's request for actions



to stop the migration of contaminants. A memorandum to the BDD Board dated February 24, 2009, describes these new regulatory requirements in more detail.

No significant actions have yet resulted from this request with regard to the groundwater pathway. However, that has been a major focus of the NMED Consent Order.

Properly monitor the transport of legacy contaminants in both the surface water and groundwater flow systems.

Action Step 2: STATUS: In Progress

Monitoring is a major component of the regulatory requirements described under Action Step 1 and the Early Notification System, Action Step 4. LANL also has undertaken significant voluntary monitoring of a comprehensive suite of contaminants from paired samples collected six times per year at the Otowi Bridge, which is upstream from the mouths of canyons that drain LANL, and at the Buckman Diversion site. NMED's DOE Oversight Bureau is conducting a sampling program this summer to collect samples from the Rio Grande at five locations when stormy weather has caused runoff to the Rio Grande. NMED also is conducting an infrequent but routine water quality survey of the northern Rio Grande. NMED is collecting an extra gallon of water for each mainstem Rio Grande sample. NMED will analyze for the radionuclide screening parameters "gross alpha" and "gross beta." If either of these screens is elevated, the BDD Project has indicated it will pay for additional specific radionuclide analyses.

In the aggregate, these different monitoring programs adequately address the BDD Board's requested action "to properly monitor" transport of contaminants in surface water.

Additionally, LANL has orally indicated its interest in evaluating existing monitoring wells in the immediate vicinity of the Rio Grande and the western area of the Buckman well field. Intensive water level monitoring of different wells in conjunction with Los Alamos County and Buckman well fields pumping may provide additional knowledge of the complex hydrogeologic groundwater flow system linking LANL, the Rio Grande, and the Buckman wells.

No significant actions have yet resulted with regard to groundwater transport monitoring.

Measure the radioactive and toxic contamination of buried sediments at and upstream of the BDD diversion site.

Action Step 3. STATUS: Completed

NMED and the BDD Board designed, funded and completed this work in 2008. The U.S. Forest Service, who required this work, approved it.

Completion of this work was reported to the BDD Board in May 2008 and is the subject of an NMED report posted on the BDD web site. LANL legacy contaminants in areas to be disturbed by construction were either not detected or were indistinguishable from the background levels of uncontaminated sediments from Canada Ancha.

Provide an early notification system so the BDD can temporarily stop diversions of any water from the Rio Grande when the Rio Grande is expected to contain elevated levels of contaminants of LANL origin.

Action Step 4. STATUS: In Progress. Construction has begun; some details remain in negotiation.

As the result of negotiations held in March, LANL and BDD Board representatives have agreed that LANL will rebuild three stream gages in Los Alamos and Pueblo Canyons and transmit the information to the BDD Project control room in near-real-time. LANL in cooperation with the BDD Project Manager have secured the written permission of the Pueblo of San Ildefonso to rebuild the LANL gage at the mouth of Los Alamos Canyon and that work has begun. LANL in 2009 will reconstruct the gages on Los Alamos and Pueblo Canyons above their confluence. LANL also will install automatic samplers that will collect samples at times of storm water runoff flow at these gages and will perform analyses of contaminants.

The BDD Project Manager has requested that DOE/LANL provide additional features for the early notification system. These remain in negotiation. Nonetheless, the agreements to date represent a significant step toward completion of the Early Notification System.

Monitor LANL Contaminants in BDD Diversions, Sand Return, Residuals, and Drinking Water.

Action Step 5. STATUS: In negotiation

DOE/LANL and BDD Project representatives discussed this requested action during reinvigorated negotiations held earlier this year. BDD Project representatives offered the alternate, simpler request per the title above, explained that these analyses would not be required or needed but for LANL historical waste discharges. One to two years of initial monitoring is required for quality assurance, safe drinking water compliance, and public confidence.

DOE and LANL have not yet made any commitment regarding this requested action. BDD Project Representatives have compiled a detailed description of the needed monitoring.

Provide funding for the BDD Board to retain independent peer review by qualified persons with regard to matters of LANL-origin contamination of the public drinking water resources of Santa Fe County and the City of Santa Fe.

Action Step 6. STATUS: Oral agreement reached. In progress.

DOE/LANL and BDD Project representatives have reached agreement on the scope of services for an Independent Peer Review for the BDD Board, as set forth in a request for proposals to be issued by the City of Santa Fe for the BDD Board. The RFP will be advertised in early July 2009. DOE/LANL will have no further role in the BDD Board's selection of or contract with the Independent Peer Reviewer.

The Independent Peer Reviewer, based on existing information, data, and studies, will prepare an independent risk assessment regarding LANL contaminants with exposure through the drinking water pathway. That exposure and risk will be compared to other pathways of exposure to LANL contamination and public exposure to radiation and radionuclides of other origins, including natural background. The RFP scope-of-services emphasizes public risk communication and includes a series of at least three public meetings.

The first public meeting will be held in 2009. Its purpose is for the Independent Peer Reviewer to solicit public questions and concerns. The Independent Peer Review will be concluded in 2010.

Pursuant to these negotiations, the BDD Project has submitted a draft grant application to the DOE for \$200,000. The grant application budget indicates that the BDD Board will expend approximately \$50,000 for in-kind services and management of this effort. A recent oral description of the grant status indicated that the application is complete and that funding is expected within two months.

If the BDD Board has additional or unanswered questions or concerns at the conclusion of the work as described in the RFP and the resulting professional services agreement with the selected independent peer reviewer, that work can be accomplished under an amendment to the initial agreement that DOE and LANL have agreed to fund.

We look forward to addressing any questions or concerns that BDD Board members may have regarding these matters.