

- 1 1. The DOE work with Joel Hubbell of INL to consider installation of advanced  
2 tensiometers in the vadose zone at LANL to study changes soil water potential at  
3 depth.
- 4 2. The DOE evaluate changes in soil water potential at depth and the potential for  
5 migration of contaminants with these changes in soil moisture.
- 6 3. The DOE consider and evaluate the potential fate and transport of contaminants  
7 attached to soil colloids moving throughout the vadose zone beneath waste  
8 facilities at LANL.

9 Ms. Henline described draft 2007-04 as a very technical recommendation that  
10 suggested the use of a device that measured soil moisture in capillary fringe zones called a  
11 tensiometer. However, the overall of the recommendation was to ensure that effective,  
12 efficient and reliable programs were implemented at LANL to monitor changes in soil moisture  
13 and the potential for migration of contaminants in the vadose zone beneath waste facilities at  
14 LANL. Dr. Berting's editorial changes were noted.

15  
16 **Draft Recommendation 2007-04, "Quantify Vadose Zone Soil Water Potential Changes and**  
17 **Evaluate Colloidal Particle Transport beneath Waste Facilities at LANL" would be taken up**  
18 **for final consideration and action later in the agenda.**

19  
20 ➤ **Waste Management Committee Report.**

21 Mr. Phelps, WM Committee Chair, acted as the reporting member for the WM  
22 Committee. Mr. Phelps explained to the new nominees that the EMSR Committee worked on  
23 "where the waste products go where we can't see" and the WM Committee worked on "where  
24 the waste goes that we can see." He asked the nominees to consider what committee they  
25 might want to serve on, and to look at the public and member websites for more information  
26 about the Board. Mr. Phelps explained that there is an overlapping interest in both  
27 committees with valuable information for both groups that was often presented at joint  
28 meetings.

29 ➤ **Update on Spring 2008 NNM CAB Sponsored Forum.**

30 The WM Committee has started to focus on a public forum to inform the public on the  
31 closure alternatives for Material Disposal Area (MDA) G at LANL. The planning of this forum  
32 was to be under the guidance of the WM Committee and represented a major part of their  
33 2008 Work Plan objectives. The date for the forum has been set for April 16, 2008. The  
34 target time period was scheduled for an evening forum with a poster session to be held  
35 sometime between 5:00 and 8:00 p.m. The location has been reserved for the forum to be  
36 held at the Santa Fe Community College, which was the same location for the Board's  
37 previous forum on Area G held in May of 2005. Mr. Phelps described arranging a simulcast of  
38 the forum for television and a possible webcast. The planning for the forum was to be the  
39 major activity for the WM Committee through the next fiscal year.

40  
41 ➤ **Committee Business: Approval of Final FY '08 Committee Work Plans**

42 ☞ **Motion:**

43 **Dr. Campbell moved that the Board accept the committee Work Plans and submit to DOE.**

44 ☞ **Second:**

45 **Dr. Rapagnani seconded the motion.**

46 ☞ **All in Favor:**

1 The motion was approved and the final technical committees Work Plans for 2008  
2 were to be forwarded to the DOE for approval.  
3

4 **I. Report from Liaison Members.**

5 Liaison members from DOE, EPA, LANL and NMED provided comments to the Board.  
6 Their comments are summarized as follows:

7 ➤ **Rich Mayer, EPA:**

8 Mr. Mayer reported to the Board as the NNM CAB Liaison member for EPA Region VI.  
9 Prior to his report, Mr. Mayer noted that he did not see a problem with the 2007-03 draft  
10 recommendation. He thought the idea of a groundwater panel could be put to good use. But  
11 he thought it shouldn't be set in stone that LANL has to follow the recommendations.

12 Mr. Mayer's report covered three major issues, which are summarized as follows:

13 1. Solid Waste Management Unit (SWMU) Storm water Permit: LANL will submit an  
14 application to EPA regarding the approximately 1300 SWMUs located at the Lab that  
15 will fall under the permit. The LANL has as many SWMUs as any in the country and  
16 there are many to review, may possibly cause each site to be monitored either  
17 individually or in groups. He recommended that this process could be something that  
18 CAB may want to look at.

19 2. EPA issued a final industrial waste permit for LANL, which was a discharge permit  
20 regarding liquid waste. Mr. Mayer stated that the Lab was allowed to discharge liquid  
21 waste but they must limit the amount discharged. He stated that NMED added the  
22 condition to make the Polychlorinated Biphenyls (PCB) measuring much more sensitive;  
23 a condition that was added by LANL after objecting initially. Mr. Mayer explained that  
24 there were approximately 16 outfalls in the permit. \* More information on PCBs can be  
25 found [online](#) at the EPA website.

26 3. EPA received a request from Concerned Citizens for Nuclear Safety (CCNS) to use  
27 some contractor/ sampling money reserved for federal facilities to sample the  
28 production and drinking water wells around Santa Fe for radionuclids.  
29

30 **Question and Answer:**

31 Q- Larry Rapagnani: For permits issued- how has EPA monitored that LANL was implementing  
32 the permit properly? How did EPA follow up?

33 A- Rich Mayer: LANL was supposed to submit monthly reports to EPA. Also, EPA did periodic  
34 sampling of the outfalls.

35 Q- J.D. Campbell: What about the cost for the sophisticated trace level sampling project near  
36 the Rio Grande?

37 A- Rich Mayer: EPA completed some preliminary cost analysis. But he explained that sampling  
38 would cost upwards of \$300,000, which would mean they could do some sampling but not all.  
39

40 ➤ **James Bearzi, NMED:**

41 Mr. Bearzi introduced guest attending from EPA headquarters. Mr. Bearzi gave a  
42 subject matter presentation to the Board entitled, "What Shall the CAB look for in the RCRA  
43 Permit?" He provided handouts to the Board. He reviewed the details of the hazardous waste  
44 permit, which will be put out for public comment for a 60 day period and he suggested that  
45 the CAB could help by taking a look at the permit and providing its comments.

1 The draft RCRA Permit covered:

- 2 1. Regulation of hazardous waste management.
- 3 2. Included mixed waste.
- 4 3. Permitted hazardous waste management units.
- 5 4. Organized clean-up activities.
- 6 5. Provided remedy for noncompliance.
- 7 6. Included public participation opportunities.

8  
9 Specifically covered in the RCRA Permit for LANL:

- 10 1. Hazardous waste generation.
- 11 2. Hazardous waste storage.
- 12 3. Hazardous waste treatment.
- 13 4. Past disposal.
- 14 5. Mixed waste.
- 15 6. Corrective Action.
- 16 7. Public Participation.

17  
18 Mr. Bearzi described the definition of hazardous waste:

- 19 ➤ Waste that has toxicity characteristics that EPA has determined to be harmful or
- 20 industrial processes that we know to be hazardous.

21 Mr. Bearzi stated that, included in this permit, the Lab would have to close old disposal  
22 sites. Mr. Bearzi informed the Board that the areas that were subject to the permit are the  
23 Material Disposal Areas including G, H, and L. Mr. Bearzi discussed the remedy selection  
24 process and closure plan process outlined in the Order on Consent. He also stated that there  
25 would be opportunity for the public to comment on the draft permit.

26  
27 **Question and Answer:**

28 Q- Pam Henline: What time period does the permit cover?

29 A- James Bearzi: Ten years.

30 Q- J.D. Campbell: Asked Mr. Bearzi to comment on draft Recommendation 2007-03.

31 A- James Bearzi: Mr. Bearzi referred to the NAS Report's recommendation to get more outside  
32 peer review. He agreed that LANL could benefit from more peer review. He stated that  
33 NMED supported the Board's recommendation, but NMED was not 'okay' with LANL getting no  
34 peer review at all. He qualified NMED's support of the recommendation by stating that the  
35 panel's recommendations needed to be independent and autonomous. The groundwater  
36 panel needed a way to issue recommendations formally through a set of bylaws. The Lab  
37 should be free to take the advice or not, but LANL would have to justify why it might support  
38 or deviate from a scientific panel, because sometimes there were legal, regulatory reasons  
39 that factor into decision making. Mr. Bearzi also briefly discussed draft Recommendation  
40 2007-04. He did support the tensiometer, especially if a tensiometer could provide decent  
41 field data. However, he thought it might be likely that the tensiometers might not be put in  
42 the right locations and he cautioned that LANL needed to be cautious where they located the  
43 instrument and how they used the data.

1           ➤ **Sue Stiger, LANS and George Rael, DOE:**

2           Due to the discussion running a bit over, George Rael, DOE, Sue Stiger, LANS, held their  
3 comments to be combined with time allotted for their presentations after the dinner break.

4  
5 **II. Public Comment Period.**

6           Public introductions were made, but no one signed up for public comment.

7 **III. Consideration and Action on Recommendation 2007-03 (Approved).**

8 **☞ Motion:**

9 **Dr. Campbell moved that the Board accept the addition of recommendation #4 to the text**  
10 **of the draft recommendation and vote for approval and submission to the DOE. (Dr.**  
11 **Campbell read recommendation # 4 to the Board).**

12 **☞ Second:**

13 **Mr. Loya seconded the motion.**

14 **☞ All in Favor:**

15 **The motion passed. Recommendation 2007-03 was approved for submission to the DOE.**

16  
17 **Regarding Recommendation 2007-03- Options considered and substitute motions that**  
18 **were later voted down or withdrawn:**

- 19       1. **Dr. Berting made a substitute motion to withdraw the addition of recommendation #4.**  
20       **Ms. Crutchfield seconded the motion. Dr. Berting later withdrew the motion prior to a**  
21       **vote.**
- 22       2. **Following the suggestion by the DDFO, Dr. Berting put forth a substitute motion to**  
23       **table consideration and action on this recommendation until a future meeting. Ms.**  
24       **Crutchfield seconded the motion. The motion did not pass.**
- 25       3. **Considered returning the recommendation to the committee level. Motion did not pass.**

26  
27 **Discussion that lead to the approved motion above:**

- 28       ➤ *The expert panel should report to someone at LANL or higher up, willing to concede if the*  
29       *recommendations went directly to the public or had a way to get LANL to confront the*  
30       *recommendations.- Terry Boyle*
- 31       ➤ *Dialog created with peer review was an interesting dialog between reviewers and researchers, which*  
32       *seemed to be a necessary aspect for a successful program. Was there any way to encourage LANL to get*  
33       *more peer review other than to formally recommend?- Kathleen Hall*
- 34       ➤ *Language was carefully considered to not to be advisory.- J.D. Campbell*
- 35       ➤ *The recommendation would open up the program to the ‘professional critics.’ Not in favor of the*  
36       *recommendation, however, he thought he could live with it.- Gerry Maestas*
- 37       ➤ *Having watched this process for a few years, there was always some type of adversarial point of view,*  
38       *those folks may not be on this panel and sometimes the adversarial issues brought out good things and*  
39       *recognition happened. She doesn’t think the ‘professional critic’ element described by Mr. Maestas*  
40       *would be a bad thing.- Pam Henline*
- 41       ➤ *When we are dealing with a public agency then the public simply must be involved. We may not like all*  
42       *the things that are said, but we must take their views into account.- Don Dayton*
- 43       ➤ *This would be a group comprised of highly technical people talking about very technical issues. The*  
44       *public doesn’t need to be in every meeting, but they could be brought in to the report at the draft*  
45       *stage.- Fran Berting*
- 46       ➤ *We have mixed apples and oranges—she thought the independence of the panel was very important to*  
47       *fulfill the goal of independent peer review. The question is does the recommendation stand as it was*  
48       *written or would the addition of recommendation number four improve or enhance the purpose.- Eva*  
49       *Artschwager*

- *He didn't want to exclude the public, in response to Mr. Dayton but he doesn't often see many of the actual public at the meetings—this panel will come up with recommendations which most likely would end up in the newspaper or other media.- Gerry Maestas*
- *Discussed bylaws and the minority report option; the Board has had only one instance in 8 years where a minority report was issued. If no amendment was agreeable then a minority would be needed. The place to work on the recommendations was in the committee setting. It was incumbent upon us as Board members to come to a consensus. The word-smithing, etc. was best suited at the committee level.- J.D. Campbell*
- *People were trying to make this too fixed—our idea was to have a panel, with experts; a group of people that would get together and talk about options. This recommendation was carefully worded.- Pam Henline*
- *There seemed to be enough concern that the recommendation needed to go back to the committee. Consider taking this recommendation back to the committee level for revision and discussion even if there was a joint meeting called.- Chris Houston*
- *There was nothing that said we needed to vote on this tonight. But a matter of clarification was needed on the matter of consensus. Consensus could be summed up to mean: people that vote for (the recommendation) and the rest of the people 'can live with' (the recommendation) and if you just can't (live with it) then you do a minority report.- Fran Berting*
- *He recognized that peer review works and he endorsed peer review. At a site for uranium tailings, they couldn't get consensus so they had peer review. DOE had peer review for Sandia mixed waste landfill and it worked.- George Rael*
- *Having had a fair amount of experience with broad review and peer review, and what worked best was to have a toolbox that has a few alternatives stored inside as 'one size doesn't always fit all.' She would rather see recommendations that support a range of things that broadened LANL's credibility.- Sue Stiger*

#### **IV. Consideration and Action on Recommendation 2007-04 (Approved).**

##### **☞ Motion:**

**Dr. Campbell made a motion that the Board vote to approve Recommendation 2007-04 with Dr. Berting's edits and one substitute sentence. (Dr. Campbell read the new sentence to the Board).**

##### **☞ Second:**

**Dr. Berting seconded the motion.**

##### **☞ All in Favor:**

**The motion passed. Recommendation 2007-04 was approved for submission to the DOE.**

#### **V. Presentation on Quarterly Performance Reports On Environmental Programs at LANL from George Rael**

Mr. Rael, Assistant Manger of Environmental Programs at LANL, presented a subject matter report for the Board entitled, LANL Quarterly Project Review, FY07 - 3<sup>rd</sup> Quarter." The presentation described the schedule for the Environmental Management program clean up of LANL, described via a master summary plan diagram. The clean up project covered soil and water remediation at LANL, defined key project risk and risk mitigation in terms of safety performance and earned value management.

#### **VI. Presentation on Proposed Responses to the 17 National Academies of Sciences' Recommendations Regarding Groundwater Monitoring Issues at Los Alamos National Laboratory from George Rael and Sue Stiger**

1 Ms. Stiger reviewed the current status of LANL’s response to the recommendations  
 2 listed in the NAS Report, Plans and Practices for Groundwater Protection at the Los Alamos  
 3 National Laboratory, 2007. Ms. Stiger stated that a more comprehensive response to the  
 4 recommendation was currently in development. The essence of the recommendation and the  
 5 status of LANL’s response are listed in the table below:  
 6

NAS Recommendation Number:	Essence	Status
1	Complete the characterization of major disposal sites.	Currently in life-cycle baseline.
2	Develop mass balance estimates.	Completed for some areas, in life-cycle baseline where feasible.
3	Quantify inventories of contaminants released in canyons; continue to develop surface water and sediment monitoring programs.	Ongoing, continues in life-cycle baseline.
4	Better integrate geochemistry into conceptual modeling.	Proposed additional work in life-cycle baseline, funding-contingent.
5	Review all operations; reduce discharges and releases to the extent possible.	Feasibility study due for completion 12/07; other plans in life-cycle baseline.
6	Add a sitewide perspective to future groundwater monitoring plans.	Ongoing network evaluations inform a sitewide perspective; supplemental geophysics in review.
7	Increase efforts to develop and use quantitative methods to describe contaminant pathways.	Ongoing in network evaluations in current program and will continue through life cycle.
8	Confirm the integrity of the major disposal sites; schedule regular subsurface surveillance.	Ongoing in current program and will continue through life cycle.
9	Continue efforts to characterize regional aquifer.	Proposed additional work in life-cycle baseline, funding-contingent.

10	Increase attention to geochemistry within site characterization context.	Proposed additional work in life-cycle baseline, funding-contingent.
11	Demonstrate better use of understanding of contaminant pathways in design of monitoring program.	Ongoing in current program and will continue through life cycle.
12	Conduct geochemical research on interaction of contaminants, drilling fluids, and geologic media.	Proposed additional work in life-cycle baseline, funding-contingent.
13	Conduct future characterization drilling and monitoring as separate tasks.	In current strategy; precedent already set with chromium investigation.
14	New monitoring wells: single-screen, drill without fluids, careful design for length and depth of well screen.	Precedent successfully set with R-35; plan to continue this approach where feasible.
15	Ensure consistency and clarity of related sampling and analytical procedures.	Ongoing in current program and will continue through life cycle.
16	Ensure measurements near detection limits are sound and are reported appropriately.	Mutual agreement (LANL/DOE/NMED) on reporting in DOE Orders, Consent Order, and NMED-approved workplans.
17	Continue to track wells to improve statistical basis for reporting increases above background.	Ongoing in current program and will continue through life cycle.

1  
2 **VII. Round Robin.**  
3 Each member gave input on the Board Meeting.

4  
5 **VIII. Recap of Meeting: Issuance of Press Releases, Editorials, etc.**

- 6 ➤ Ms. Romero provided the group with a summary of the meeting:  
7 ➤ Thanked the new nominees for attending.

- Gave congratulations to Dr. Campbell and Dr. Berting on their election to Chair and Vice Chair respectively.
- Announced the approval of Recommendations 2007-03 and 2007-04.
- Announced the approval of the technical committee's final 2008 work plans.
- Announced the LANL tour date was set for Nov 6, 2007.

## IX. Adjournment Christina Houston

Ms. Houston called for the new nominees to make their committee choice as soon as possible and Ms. Santistevan planned to call the nominees to get their decision.

With no further business to discuss, Ms. Houston, DDFO, adjourned the meeting at 8:30p.m.

Respectfully submitted,



J. D. Campbell, Ph.D., P. E., Chair, NNM CAB

*\*Minutes prepared by Lorelei Novak, NNM CAB Technical Programs and Outreach*

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### Attachments:

1. Draft Recommendations [2007-03](#), [2007-04](#).
  2. Printed Comments from member website on Draft Recommendations 2007-03, 2007-04.
  3. [Report](#) from Menice Santistevan, Executive Director.
  4. [Report](#) from J.D. Campbell, Chair, NNM CAB.
  5. [Report](#) from Pam Henline, Chair, EMSR Committee.
  6. [Final FY'2008 EMSR Committee Work Plan](#).
  7. [Final FY 2008 WM Committee Work Plan](#).
  8. DOE/EM/LASO/LANL Quarterly Project Review Presentation Handout, VL-LANL-0030.
  9. EM Program Overview Handout from 9-13-07 Presentation to EMAB in Santa Fe.
  10. J.D. Campbell [9-13-07 NNM CAB Presentation](#) to EMAB in Santa Fe.
  11. James Bearzi, NMED Liaison Member Presentation, "What Shall the CAB Look for in the RCRA Permit, 9-19-07."
  12. National Academies of Sciences Report, "[Plans and Practices for Groundwater Protection at the Los Alamos National Laboratory](#)," Final Report 2007.
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1 **Public Notice:**

2  \*All NNM CAB meetings are recorded in accordance with the Federal  
3 Advisory Committee Act. Audiotapes have been placed on file at the  
4 NNM CAB Office, 1660 Old Pecos Trail, Suite B, Santa Fe, New Mexico, 87505.

5  \*Reference documents listed in the Appendix section of these minutes  
6 can be requested for review at the CAB office in Santa Fe.

7  
8 \*For more information regarding audio transcription or any information  
9 referenced to or contained herein these minutes, please call the CAB office  
10 at (505)-989-1662.

11  
12  
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**FINAL**