

TA 50

August 4, 2005

By Email to: [bill.olson@state.nm.us](mailto:bill.olson@state.nm.us)  
[chris.vick@state.nm.us](mailto:chris.vick@state.nm.us)

William C. Olson, Bureau Chief  
Ground Water Quality Bureau  
1190 St. Francis Drive  
P. O. Box 26110  
Santa Fe, NM 87502-6110

Re: Draft Ground Water Discharge Permit, DP-1132, issued by the  
Ground Water Quality Bureau of the New Mexico Environment Department for  
the Radioactive Liquid Waste Treatment Facility at Technical Area 50 at  
Los Alamos National Laboratory

Dear Mr. Olson:

Concerned Citizens for Nuclear Safety ("CCNS") make the following general and specific comments about the above-referenced draft discharge permit DP-1132, issued by the Ground Water Quality Bureau ("the Bureau") of the New Mexico Environment Department ("NMED") on April 11, 2005 and re-issued on June 10, 2005 pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17 and the New Mexico Water Quality Control Commission (WQCC) regulations, Title 20 of the New Mexico Administrative Code, Chapter 6, Part 2 (20 NMAC 6.2). We appreciate the cooperation of the Bureau to meet with us over the years to discuss the issues presented by the draft permit.

We also request a public hearing about the draft permit.

These comments are not meant to address all issues that exist or may arise with respect to the proposed discharge permit. CCNS reserves the right to raise other issues in other contexts, including negotiations and a public hearing, concerning the proposed permit.

### Introduction

The Bureau indicated in its April 11, 2005 notice of issuance, and its June 10, 2005 notice of re-issuance, of the draft of discharge permit DP-1132 that it proposes to issue DP-1132 to the U.S. Department of Energy ("DOE") and the Regents of the University of California ("UC") for the Radioactive Liquid Waste Treatment Facility at Technical Area 50 ("the Facility") within the Los Alamos National Laboratory ("LANL") ("draft TA-50



permit"). The June 10, 2005 re-issuance notice stated that public comments and requests for a public hearing must be submitted on or before August 4, 2005.

CCNS is a Santa Fe-based non-profit community-based organization, which is concerned about the impacts of the Facility on ground and surface water in New Mexico. This request for a public hearing and comments are submitted pursuant to the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission Regulations.

#### Request for public hearing

The request of CCNS for a public hearing must be granted for two reasons. First, there is significant public interest in the proposed discharge permit. Second, there are significant issues that must be addressed before the discharge permit is issued in final form.

#### The New Mexico Water Quality Act and its implementing regulations provide for public hearings.

The New Mexico Water Quality Act, NMSA 1978 §§ 74-6-1 et seq ("the Act") provides that the Water Quality Control Commission ("WQCC") shall adopt regulations providing for notice to the public of applications for permits under the Act. NMSA 1978 §74-6-5.F. That section also provides that no ruling on an application for a permit shall be made without opportunity for a public hearing at which all interested persons have the chance to present their views and arguments and to cross examine witnesses provided by other parties. Id.

The Water Quality Control Commission Regulations ("the Regulations") adopted to implement these provisions indicate that the NMED shall conduct a public hearing or a meeting shall be held if the Secretary determines that there is significant public interest. NMAC §20.6.2.4108.D. There is significant public interest in the proposed discharge plan that is the subject of this proceeding.

The Board of Directors, Staff and members of CCNS make this request. CCNS was formed in 1988 to provide a voice for citizen concerns about the transportation of nuclear waste through Santa Fe. Our mission is to protect all living beings and the environment from the effects of radioactive and other hazardous materials now and in the future. Following the May 2000 Cerro Grande Fire, CCNS organized the "Fire, Water and the Aftermath: The Cerro Grande Fire and Its Effect on the Rio Grande/Bravo Watershed," held at the El Dorado Hotel in Santa Fe in which over 400 people attended. As a result, CCNS formed the "Río Grande Watershed Initiative" to address LANL impacts on the watersheds on both the east and west side of the Río Grande in White Rock Canyon, including the protection and restoration of water quality and quantity. Some of their activities of the Initiative have been organizing and

participating in four independent citizens' sampling trips in White Rock Canyon, rafting from Buckman to Cochiti Dam. The three-day trips have included participation by NMED, LANL, Amigos Bravos, Río Grande Restoration and technical experts. The technical experts include George Rice, who has written Attachment 3 to our comments.

Therefore, CCNS has a particular interest in this proceeding. Moreover, CCNS has an extensive membership, which includes many members who live down stream and down gradient from LANL and who are therefore at risk from contamination discharged by the Facility that is the subject of proposed discharge permit.

CCNS believes that state ground water discharge permits provide the public with a unique opportunity to work with the State, concerned citizens and the polluting facility to develop the best possible protection for ground water in both the short term and after closure of the facility. By preventing additional contaminants from being released, and by requiring clean up of historic releases, the public's right to clean water will be protected. The proposed issuance of DP-1132 to LANL provides CCNS with an opportunity to serve New Mexico's citizens by protecting the state's future drinking water resources, which is consistent with our mission.

The extensive membership of CCNS includes several hundred people in the surrounding area and downstream who may be affected by contamination from the LANL.

CCNS's membership of over 3,000 people reflects the geography of its constituency, with about 80 percent residing in New Mexico. Because contaminants discharged by the Facility may reach ground water and the drinking water supply of residents of Los Alamos County, the CCNS members who live in Los Alamos are at risk from contamination discharged by that Facility. Since discharges from that Facility also have the potential to reach the Río Grande, CCNS members in Santa Fe, Albuquerque and further downstream are also at risk from contamination released by that Facility. Therefore, there are several hundred members of CCNS who may be affected by discharges governed by proposed DP-1132.

On the basis of the interests of the membership of CCNS alone, there is significant public interest in the proposed DP-1132. Moreover, CCNS is not the only organization that is requesting a public hearing concerning proposed discharge plan DP-1132. A similar request is being made by Amigos Bravos, a non-profit organization based in Taos. The mission of Amigos Bravos includes several specific goals. These are: 1) to return New Mexico's rivers and the Río Grande watershed to drinkable quality wherever possible, and to contact quality everywhere else; 2) to see that natural flows are maintained and where those flows have been disrupted by human intervention, to see that they are regulated to protect and reclaim the river ecosystem by approximating natural flows; and 3) to preserve and restore the native riparian and riverine biodiversity. Amigos Bravos also supports the environmentally sound, sustainable

traditional ways of life of indigenous cultures and holds that environmental justice and social justice go hand in hand.

As has been shown, there is significant public interest in the draft DP-1132, and the Environment Department Secretary should grant this and similar requests for a public hearing.

Our general comments are as follows:

1. We are very concerned about the impact of historical discharges from TA-50 into Mortandad Canyon on soils, surface and ground water. Therefore, you will find throughout our comments requests for studies and additional data in order to inform the administrative record. Our first request is for a study evaluating the impacts of historical discharges from TA-50 on soils, surface and ground water
2. We are pleased that the Compliance Order on Consent ("Consent Order") between NMED and the Department of Energy ("DOE") and the Regents of the University of California for LANL was finalized on March 1, 2005. As part of the Consent Order, LANL is required to enhance its monitoring program in Mortandad Canyon and provide NMED with a number of documents and reports regarding ground water in the canyon system. The data and reports may contain new information requiring action in order to protect ground water. Therefore, in order that the TA-50 permit more effectively controls the discharge of water contaminants from LANL operations to ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses and protect public health, we request that the draft permit include a "crosswalk" between the deliverables required in the draft TA-50 permit and the final Consent Order. We request that the Applicant also provide copies of the deliverables under the Consent Order pertaining to TA-50 to the Ground Water Quality Bureau for review and comment. Please see Attachment 1 for our proposed list of deliverables.
3. We believe that the administrative record is incomplete. We suggest that the reports listed in Attachment 2 be added to the administrative record.

Our specific comments are as follows:

1. **Joint and Several Liability Among the Permittees.** The proposed discharge permit is issued to DOE and UC, but it does not indicate which of those entities is responsible for what actions under the permit. In order to make clear that each of the permittees is responsible for everything required by the permit, the draft must specify that the two parties are jointly and severally liable for all the actions to be performed under the permit.

2. WQCC regulations include requirements for identifying wells within a certain radius of the discharge pipe. Has LANL adequately addressed this requirement in its application?

3. Section I. Introduction and Operational Plan No. 3. We support this provision in the draft permit that restricts the facilities that may pump liquid waste to TA-50 through the Radioactive Liquid Waste Collection System ("RLWCS") via double encased pipe or transport liquid waste to TA-50 by truck. Should the permittees require sending liquid waste to TA-50 from additional facilities, there are regulatory processes for modifying the permit, with opportunities for public input.

4. Section I. Please see the comments of George Rice found in Attachment 3 regarding the Effluent Criteria, Effects of Discharge, Sorbed Contaminants and Contaminants in Vadose Zone.

5. General Comment on the Allowance of Discharges from LANL. The Regulations provide that NMED may require information that may be necessary to demonstrate that a discharge will not result in an exceedence of standards at any place where water may be withdrawn now or in the reasonably foreseeable future. NMAC §20.6.2.3106.C(7). Because contaminants discharged from the Facility may cause such an exceedence of standards in ground or surface water that is down gradient and down stream from the Facility, the proposed discharge plan should require LANL to evaluate whether discharges from the Facility are necessary.

Elimination or minimization of discharges from the Facility could be accomplished through advanced treatment technologies which could render any potential discharges free of contaminants and available for re-use by LANL. Even if an evaluation demonstrates that discharges are necessary, the discharge permit should mandate that LANL recycle water treated in the Facility to the maximum extent possible.

6. Effluent Criteria. There is no standard for beta, gamma or total radioactivity in the WQCC regulations. Please explain why gross alpha is the only radioactive characteristic in "special standards in permit." Please explain why no specific radionuclides are listed. Please explain why there are no parameters listed for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOC).

7. Evaporator distillate and reverse osmosis ("RO") permeate. Operational Plan Condition No. 3. Please specify the treatment process at TA-53 for evaporator distillate and RO permeate that does not meet the criteria for discharge to Mortandad Canyon. Is further treatment required if these wastes do not meet the criteria for discharge at TA-53? Where are those wastes treated and disposed?

8. Solids removed from the primary clarifier and TUF unit. Operational Plan Condition No. 3. Please specify how the solids generated by treatment and proposed to be disposed at TA-54 are managed? Has the Bureau reviewed the monitoring plan? How will the wastes be contained? Is there a contingency plan for these wastes? What ground or surface water is at risk from DP-1132 related storage or disposal activities at TA-54?

9. Evaporator bottoms. Operational Plan Condition No. 3. Where are the evaporator bottoms sent for off-site treatment? Please describe the surface or ground water risk from DP-1132 related disposal activities at TA-54 for evaporator bottoms. Please cite the DOE regulations that apply to these activities.

10. We are concerned about the wastes described in Operational Plan Condition No. 3. Have the permittees prepared waste management plans for all treatment sludges, scale and other solids? We are concerned that these wastes liable to be generated from treatment processes at TA-50, such as clarifier underflow, filtration wastes, RO concentrates, pipe scale, etc., will likely include radionuclides, metals and organics removed from treated waste streams. If the permittees have prepared such plans, has the Bureau reviewed them? If not, please ask the permittees to provide copies of such plans to the Bureau for review and comment and for inclusion in the administrative record.

11. Discharge. What is the chemistry of each effluent stream to be treated, including total and dissolved concentrations of all WQCC and effluent criteria in the draft permit. What is chemistry of both receiving waters identified, and TA-54 "receiving waters" not identified, including total and dissolved concentration of all WQCC and "special standards" species? If receiving waters at TA-54 are determined to be waters at risk from TA-50 activities, what is the depth to water and chemistry?

12. Permittees' Discharge Plan. We request that the documents cited in the draft discharge permit be incorporated in the permit, along with all documents found in the administrative record, including correspondence, reports and data reports. We also request that the documents listed in Attachment 2 be included in the permittees' discharge plan.

Furthermore, we request that the permittees be required to resubmit a Discharge Plan. Considering that the Bureau has not permitted this facility before and that the last revision to the Discharge Plan was submitted on December 30, 1997, an update Discharge Plan is required in order to protect surface and ground water on the Pajarito Plateau.

13. Operational Plan Condition No. 5. The permittees provided a plan for maintaining the liquid waste collection system and associated monitoring system to NMED in November 1998. Have the permittees made any changes or additions to the

plans? Do the plans include maintaining the piping system, leak detection system, and secondary containment systems, such as the "leak collection vaults?" Do they require regular-scheduled mandatory inspections? Has the Bureau reviewed such plans? If not, please require the permittees to provide the Bureau with copies for review and comment.

14. Operational Plan Condition No. 6 regarding the removal of solids from TA-50 as required. Please explain what constitutes characterization, containment, transport and disposal for these solids? Is there a requirement for monitoring these solids? The Condition states that these activities will be conducted "in accordance with applicable local, state and federal regulations." Please cite these regulations in the draft permit and requirements for the permittees to adhere to them.

We believe that the requirement to retain records for only 20 years is inadequate because the wastes are likely to represent potential risk to ground water for the "reasonably foreseeable future." Therefore, we strongly urge the Bureau to require the permittees to retain the records indefinitely.

15. Section III. Monitoring, Reporting, and Other Requirements. Please see the comments of George Rice found in Attachment 3 regarding the monitor wells.

16. Monitoring, Reporting, and Other Requirements Condition No. 8. How will the public be informed if NMED is planning to make changes to the sampling and analysis methodologies? Will the methodologies found in the listed publications be submitted to NMED for review and approval?

17. Monitoring, Reporting, and Other Requirements Condition No. 9. We request that NMED require the permittees to submit data to NMED quarterly for all individual waste streams before mixing and for all batches to be treated.

18. Monitoring, Reporting, and Other Requirements Condition No. 10. We strongly suggest that NMED require the permittees to measure the monthly volume of wastewater discharged to the collection system. In the alternative, NMED should define the "primary" waste generator sites in the draft permit.

Further, the quarterly monitoring reports submitted by the permittees to NMED must include data on the concentrations of all WQCC and "special standards" criteria.

19. Monitoring, Reporting, and Other Requirements Condition No. 11. The draft permit must include requirements for inspections of the collection system and associated monitoring system at TA-50 in response to non-standard operational events, such as leaks, loss of power and major freeze or rainfall events that could damage shallow or exposed parts of the system.

20. Monitoring, Reporting, and Other Requirements Condition No. 12. We remain concerned about the recent findings of the Defense Nuclear Facilities Safety Board (DNFSB) about a leaking waste receipt tank at TA-50. We provide the DNFSB's report concerning this matter in Attachment 4. We request that these report be incorporated into the administrative record.

Therefore, the draft permit must include requirements for inspections and evaluations of the integrity of all tanks, treatment units, pipelines, trucks and all associated equipment associated with TA-50 in response to non-standard operational events such as leaks, loss of power and major freeze or rainfall events that could effect shallow or exposed parts of system.

21. Monitoring, Reporting, and Other Requirements Condition No. 13. Please explain how detected VOCs and SVOCs will be managed? We suggest that VOC or SVOC limits be added to "special standards" in the draft permit. We also suggest that the permittees be required to monitor for VOCs and SVOCs in the effluent to be treated.

22. Monitoring, Reporting, and Other Requirements Condition No. 14. Please see the comments of George Rice found in Attachment 3 regarding our concerns about the monitor wells.

Further, what are the monitoring systems for wastes generated by TA-50 operations that are stored or disposed at TA-54?

23. Section III. Contingency Plan Condition No. 16. Please explain whether this section covers releases from the transportation of effluent or solids. Please explain whether disposal activities for solids and transportation related the Contingency Plan covers releases or whether it applies only to liquid waste stream spills and releases. We request that notification be required immediately, within one, two, or three hours of detection of release, rather than within 24 hours. What is the rationale for allowing a full day to pass before requiring notification? For comparison, please see the "immediate" notification in Contingency Plan Condition No. 17 for exceedances found in grab samples.

24. Contingency Plan Condition No. 17. Please explain what standards apply to chemical quality of solids generated, transported and disposed of by LANL both on and off-site from TA-50 waste streams.

25. Contingency Plan Condition No. 18. Please explain whether solids must also be included with the liquids found in the leak detection vaults.

26. Contingency Plan Condition No. 19. Disposal of solids is included in the activities of the draft permit. We are concerned that solids generated by TA-50 operations are not as fully addressed as liquids in the draft permit. Are there gaps in



the regulation of such solids? Please explain the regulatory scheme for solids and the rationale for excluding consideration of this regulatory scheme in the discharge permit.

27. Section III. Closure Plan. Solids will continue to present risks to ground water after closure of the liquid waste treatment systems. Closure and post-closure plans for monitoring and release responses will be needed for solids disposal sites. Solids disposal sites should be subject to full closure plans, including isolation by capping and other management strategies, long-term monitoring, maintenance and repair programs and financial assurance.

28. Closure Plan. We make the following detailed comments about this section.

In accordance with 20.6.2.3107 A [NMAC] "Each discharge plan shall provide for the following as the secretary may require: ... (11) A closure plan to prevent the exceedance of standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent and/or abate such contamination. The obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit..."

The draft permit issued April 11, 2005 includes a closure plan (Condition No. 20), but it is inconsistent with other closure plans developed for other groundwater discharges in New Mexico in accordance with the same statutes. In particular, it fails to identify or address existing and pervasive existing groundwater contamination and soils contamination that could lead to additional ground water contamination. Instead, the permit relies on monitoring (Condition No. 20E) to "...confirm the absence of ground water contamination" and refers to a contingency plan described in Condition No. 15 of the permit. While we have discussed this matter with the NMED and understand that many aspects of closure may be addressed under the Consent Order for remediation of the site, it is our view that the discharge permit should include those same measures or additional measures as necessary to comply with New Mexico state laws. This should include a detailed closure plan and the requisite financial assurance to carry out that plan.

The known existence of contamination as a result of historic and potentially present discharges contradicts the assertion in Condition No. 20 that monitoring might somehow confirm the absence of ground water contamination. We would assume that monitoring will not confirm the purported absence of contamination, and instead presently and in the future will show that contamination has already occurred, prompting the requirement to initiate the "contingency plan" described in Condition No. 15. However, review of Condition No. 15 reveals that it does nothing more than instigate confirmatory monitoring and notification, and potential future corrective

actions, but this does not constitute a closure plan or the contemplated activities involved in such a plan as has been required consistently by the State of New Mexico Groundwater Control Division for other discharge permits.

We realize that the existing contamination has not been characterized adequately to develop a detailed closure plan that addresses remediation of existing ground water contamination and contaminated soils that could lead to further ground water contamination. However, that same situation exists at many other sites with ground water discharge permits in the State of New Mexico. In those cases the closure plans assume, based upon limited facts and professional judgment, what remediation and mitigation steps most likely will be necessary in order to develop a plan with conditions and to enable the establishment of financial assurance.

In the case of LANL, the following assumptions should be made:

- A. Existing ground water contamination has the potential to harm ground water, including drinking water sources. Ground water management including ground water pumping, treatment and discharge of treated water will most likely be necessary to protect state resources and public health.
- B. Existing soils contamination has the potential to cause additional ground water contamination. Soils remediation including excavation, treatment and/or location in a suitable repository will most likely be necessary to prevent additional groundwater contamination.

Based on the information presently available and assumptions as necessary in the absence of such information, LANL must have been required to develop a detailed closure plan as part of its application for the ground water discharge permit and that plan should have been incorporated by reference into the permit. In addition, the NMED should have included such corrections or conditions as necessary to ensure the closure plan is consistent with the requirements of other ground water discharge permits and closure requirements issued by the NMED. The closure plan, therefore, should have included a detailed plan to remediate or mitigate the existing ground water and soils contamination. A cost estimate should also have been provided based on the tasks included in the closure plan and corresponding financial assurance required in order to ensure that funds were available for the State of New Mexico to carry out those plans in the event the Permittees or other responsible entities (i.e., DOE, National Nuclear Security Administration, UC) failed to carry out the necessary actions.

This matter should have been addressed many years ago, thus there is no reasonable excuse for the present situation. However, because the closure plan may be based on assumptions or professional judgment to a large extent due to the fact that the necessary investigative and characterization work has not yet been performed, the

discharge permit closure plan should have been conditioned to require extensive additional work at the site in order to provide the necessary information within a reasonable time frame (i.e., five years) so that a more site-specific and fact-based plan could be developed, and implemented, in the future. The conditions included in the closure plan at a minimum should include a requirement to perform additional studies to supplement present knowledge and information upon which the present should have been based, including the following:

- A. Ground water quality characterization studies to determine the extent and nature of the existing contamination.
- B. Ground water hydrogeological studies to examine the physical nature of ground water below LANL and to determine potential ground water flowpaths and other critical features.
- C. Geochemical characterization to examine the interaction between contaminated ground water and geologic materials the ground water is likely to flow through and/or come in contact with and what might be the result of those interactions.
- D. Ground water management and water treatment studies to determine alternatives and the optimum method to control and treat existing ground water contamination.
- E. Soils contamination characterization studies to determine the extent and nature of the existing soils contamination.
- F. Soils treatment studies to determine alternatives and the optimum method to treat or otherwise remediate or mitigate contaminated soils and their potential to contribute to additional ground water contamination.

The permit must also include a schedule for LANL to provide work plans to conduct these studies as well as a schedule for submittal for review and completion of the studies. We request that these studies be provided to both the Bureau and the Hazardous Waste Bureau.

29. Section III. General Terms and Conditions Condition No. 21, Recordkeeping. The recordkeeping requirements for solids must be the same as for liquids.

30. General Terms and Conditions Condition No. 29, Spills, Leaks, and Other Unauthorized Discharges. We request that all spills, leaks and other unauthorized discharges from the transportation of liquids and solids and the disposal of solids be addressed as thoroughly as releases from liquid treatment and piping systems are addressed.

31. Condition No. 30, Modifications and/or Amendments. The draft permit must require that permittees notify NMED of any proposed changes to the wastewater treatment and disposal system which "would result in any 'significant' change in the discharge of water contaminants" within a set period of time. Condition No. 30 [emphasis added.] We recommend that NMED include a time period for submittal by the permittees prior to such change. CCNS recommends a period of time be 30, 60 or 90 days prior to such change in order to provide for NMED review and opportunity for public notice and review before the proposed increase occurs. We request that NMED define "significant."

Further, we are concerned that the draft permit allows the Permittees to increase the quantity of discharge and/or concentration of water contaminants discharged without prior notice to NMED or the impacted public. Both NMED and the public must be provided the opportunity to review such changes to the permit prior to such activities being implemented by permittees.

32. Condition No. 32, Compliance with Other Laws. Please explain what other federal, state and local laws, regulations, permits or orders apply.

Finally, in addition to the studies requested in the body of our comments, we request that NMED require the permittees to conduct studies to determine:

- A. Whether it would be possible to separate radionuclides from non-radionuclides in discharges.
- B. Whether it would be possible to separate radionuclides from non-radionuclides prior to shipment for treatment at TA-50.

Thank you for your consideration of our comments. Please contact us should you have any questions or comments.

Sincerely,

Joni Arends  
Executive Director

cc, with attachments: Senator Jeff Bingaman, Santa Fe, NM 87501  
Representative Tom Udall, Santa Fe, NM 87505  
James Bearzi, NMED Hazardous Waste Bureau, by email  
to james.bearzi@state.nm.us

**Attachment 1 to CCNS Comments  
Consent Order Deliverables**

**Draft Groundwater Discharge Permit, Los Alamos National Laboratory,  
Radioactive Liquid Waste Treatment Facility (DP-1132), re-issued April 27, 2005**

Below please find a list of deliverables from the NMED Consent Order (CO) for LANL,<sup>1</sup> along with due dates. We urge NMED to incorporate these deliverables into the draft permit. The deliverables, which may contain the latest information and data about contaminants from TA-50 found in the Mortandad Canyon system, may be useful to the Bureau. We believe that in order to support NMED's holistic approach to addressing contamination found in ground water in Mortandad Canyon, the draft TA-50 permit must include requirements that the permittees provide the following documents to the Bureau for review and comment under the same response due dates as are required under the Consent Order. We support the vision of the Bureau and the Hazardous Waste Bureau coordinating more closely about contamination in Mortandad Canyon.

| <u>Site</u>  | <u>Deliverable</u>       | <u>CO Due Date</u> |
|--|--------------------------|--------------------|
| Material Disposal Area<br>(MDA) C; SWMU 50-009       | Investigation Work Plan  | Submitted          |
|  | Investigation Report     | 3/15/05            |
|  | Appropriate Report       | 3/31/05            |
|  | Remedy Completion Report | 10/31/09           |
| Middle Mortandad/Ten<br>Site Canyon Aggregate Area   | Supplemental SAP         | Submitted          |
|  | Investigation Report     | 9/30/05            |
| TA-35 (Middle Mortandad/<br>Ten Site Aggregate Area) | Appropriate Report       | 9/30/05            |
| Mortandad Canyon                                     | Investigation Report     | 6/30/06            |
| Middle Cañada del Buey<br>Aggregate Area             | Investigation Work Plan  | 10/31/07           |
| Upper Mortandad Canyon<br>Aggregate Area             | Investigation Work Plan  | 11/30/07           |

<sup>1</sup> NMED/LANL Order on Consent, Table XII-I, Closure Milestone Schedule, p. 234 and Table XII-2, Schedule of Deliverables by Watershed, p. 237, Table XII-4, General Requirements, p. 247, March 1, 2005.

|   |   |          |
|---|---|----------|
| Upper Cañada del Buey<br>Aggregate Area                   | Investigation Work Plan   | 6/30/08  |
| Lower Mortandad/Cañada<br>Del Buey Aggregate Area         | Investigation Work Plan   | 4/30/09  |
| Cañada del Buey   | Investigation Work Plan   | 8/31/09  |
| Lower Mortandad/Cedro<br>Canyon Aggregate Area            | Investigation Work Plan   | 10/31/09 |
| Mortandad Canyon<br>Aggregate Areas                       | Remedy Completion Reports   | 11/30/12 |
| Mortandad Canyon Long-term<br>Groundwater Monitoring Plan | Due: After completing the installation of all<br>additional monitoring wells. |          |

**Attachment 2 to CCNS Comments  
Additions to Administrative Record**

**Draft Groundwater Discharge Permit, Los Alamos National Laboratory,  
Radioactive Liquid Waste Treatment Facility (DP-1132), re-issued April 27, 2005**

1. Emelity, L.A., *A History of Radioactive Liquid Waste Management at Los Alamos*, LA-UR-96-1283
2. NMED Request for Discharge Plan, April 1996.
3. Rice, George, *New Mexico's Right to Know: The Potential for Groundwater Contaminants from Los Alamos National Laboratory to Reach the Rio Grande*, Prepared for Concerned Citizens for Nuclear Safety, July 2004.
4. All audit reports about TA-50 operations and discharges.
5. All Department of Energy Inspector General reports about TA-50.
6. All General Accounting Office reports about TA-50.

## Attachment 3 to CCNS Comments

### Comments on *Draft Groundwater Discharge Permit, Los Alamos National Laboratory, Radioactive Liquid Waste Treatment Facility (DP-1132), re-issued April 27, 2005* George Rice, July 28, 2005

#### Monitor Wells

Two of the monitor wells listed in the permit<sup>1</sup>, MCOBT-4.4 and TW-8, are being replaced<sup>2</sup>. The permit should be revised to require monitoring of the replacement wells.

New monitor wells have been installed in Mortandad Canyon: alluvial wells A-1, A-2, A-3a-f, A-4, A-5, A-6, A-7, A-8, A-9<sup>3</sup>; intermediate wells I-1, I-4, I-5, I-6, I-8, and I-10<sup>4</sup>; and regional well R-28<sup>5</sup>. The discharge permit should require monitoring of these new wells.

None of the alluvial monitor wells listed in the permit are upgradient of the Radioactive Liquid Waste Treatment Facility (RLWTF) discharge point. Thus, it may not be possible to distinguish between contaminants originating at the RLWTF and those that originate from upgradient sources. Los Alamos National Laboratory (LANL) should be required to monitor alluvial wells upgradient of the RLWTF discharge point (e.g., A-1 and A-4).

Some monitor wells at LANL, including at least one well specified in the draft permit, are affected by residual drilling fluids<sup>6</sup>. LANL should be required to show that sample analyses are not affected by drilling fluids.

#### Effluent Criteria

The effluent criterion for gross alpha particle activity is 30 pCi/L<sup>7</sup>. However, the EPA drinking water standard (MCL) for gross alpha particle activity is 15 pCi/L<sup>8</sup>. Please explain why the effluent criterion is higher than the MCL.

The effluent criterion for perchlorate is 4 µg/L. However, LANL claims that the RLWTF treatment system has reduced perchlorate concentrations to less than 1 µg/L<sup>9</sup>. Please explain why the effluent criterion is four times greater than the effluent concentration LANL claims to have achieved.

---

<sup>1</sup> NMED 2005a, section III-14.

<sup>2</sup> MCOBT-4.4 will be replaced by well I-4 (LANL 2004a, page 42). TW-8 will be replaced by R-1 (LANL 2004a, page 44).

<sup>3</sup> LANL 2004a, table 2; and Whitacre, 2005, page 7.

<sup>4</sup> LANL 2004a, table 3; and Whitacre, 2005, page 7.

<sup>5</sup> LANL 2004a, table 4; and DOE, 2005a

<sup>6</sup> Longmire et al., 2004.

<sup>7</sup> NMED 2005a, section III-3.

<sup>8</sup> EPA 2004, page 9.

<sup>9</sup> LANL, 2003a, page 2.



## **Sorbed Contaminants**

Contaminants discharged from the RLWTF have become sorbed to the sediments in Mortandad Canyon. These sorbed contaminants (e.g., Am-241, Cs-137, Pu-238, 239, Sr-90, and PCBs)<sup>10</sup> may be released to surface and groundwater flowing through the sediments. LANL should be required to monitor contaminants in sediments and remove any sediments that have the potential to contaminate surface or groundwater.

## **Contaminants in Vadose Zone**

Contaminants discharged from the RLWTF (e.g., perchlorate) exist in the vadose zone beneath Mortandad Canyon<sup>11</sup>. LANL should be required to monitor vadose zone contaminants and determine whether they are a threat to groundwater quality. If they are a threat, LANL should be required to develop and implement a plan to eliminate the threat.

## **References**

DOE, 2005a, *Revision 1, Well R-28 Completion Report, Los Alamos National Laboratory, Los Alamos, New Mexico, Project No. 37151/16.12*, February 9, 2005.

EPA 2004, *2004 Edition of the Drinking Water Standards and Health Advisories*, EPA 822-R-04-005, Winter 2004.

LANL 2002a, *Environmental Surveillance at Los Alamos during 2001*, LA-13979-ENV, September 2002.

LANL, 2003a, *Los Alamos National Laboratory Perchlorate Issues Update*, LA-CP-03-0441, July 7, 2003.

LANL 2004a, *Mortandad Canyon Groundwater Work Plan, Revision 1*, LA-UR-04-0165, ER2004-0019, January 2004.

LANL 2004b, *Environmental Surveillance at Los Alamos during 2003*, LA-14162-ENV, September 2004.

LANL 2005a, *Interim Facility-Wide Groundwater Monitoring Plan*, LA-UR-05-3443, ER2005-0204, May 2005.

**Longmire, P., D. Counce, and K. Bitner, 2004, Residual Drilling Fluids in Characterization Wells: Stages of Well Equilibration**, presentation to Groundwater Protection Program Quarterly Meeting, October 25, 2004.

---

<sup>10</sup> LANL 2004b, figures 6-4 through 6-7; and LANL 2002a, pages 313 and 314.

<sup>11</sup> LANL 2005a, page 4-1.

NMED 2005a, *Draft Groundwater Discharge Permit, Los Alamos National Laboratory, Radioactive Liquid Waste Treatment Facility (DP-1132)*, re-issued April 27, 2005.

Whitacre, T., 2005, *Well Drilling Status Report*, presentation to Groundwater Protection Program Quarterly Meeting, February 2, 2005.

**Attachment 4 to CCNS Comments  
Defense Nuclear Facilities Safety Board Weekly Report**

**Draft Groundwater Discharge Permit, Los Alamos National Laboratory,  
Radioactive Liquid Waste Treatment Facility (DP-1132), re-issued April 27, 2005**

DEFENSE NUCLEAR FACILITIES SAFETY BOARD December 17, 2004  
MEMORANDUM FOR: J. Kent Fortenberry, Technical Director  
FROM: T. D. Burns Jr. and C. H. Keilers, Jr.  
SUBJECT: Los Alamos Report for Week Ending December 17, 2004

Resumption Status: About a quarter of LANL moderate and higher risk activity groups have not yet been approved to resume, including waste operations and site support contractor (KSL) activities. Many remaining activities have been deemed essential and have continued in parallel with resumption reviews. The formal process has been that line management proposes activities as essential after Resumption Review Board (RRB) concurrence. Also, when resumption reviews identify an applicable pre-start finding, essential activities have stopped until adequate compensatory measures are in place. Based on recent events, formal control of the resumption process and of essential activities is eroding – a trend that needs to be reversed. Formal closure of RRB traveler actions would be beneficial. A systematic review of the many corrective action plans now being pursued for consistency, completeness, and effectiveness would also be worthwhile (site rep weekly 11/19/04). Unless such a review is done and acted upon, LANL may return to conditions existing at the time of the stand-down.

**Radioactive Liquid Waste Treatment Facility (RLWTF):** The Plutonium Facility (TA-55) is nearly waste-logged, which has mission and safety implications. The LANL Director and the NNSA Site Office Manager have approved the TA-50 RLWTF receiving and processing TA-55 transuranic liquid waste next week, as an essential one-time-only activity. This has safety implications for RLWTF (site rep weekly 10/29/04). TA-50 plans to mitigate risks by keeping the liquid level in the waste receipt tank below the known leak site and by-passing a corroding clarifier tank. While this may be acceptable, the RRB has not formally reviewed and concurred in this activity as essential, nor has the NNSA Site Office extended previous authorization basis approval to use the leaking waste receipt tank.