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ROBERT M. MARCH, Clerk
UNITED STATES DISTRICT COURT
DISTRICT OF NEW MEXICO

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, Plaintiff, v. JOHN R. D'ANTONIO, JR., Cabinet Secretary of the New Mexico Environment Department, Defendant.	Civil No. 02-637 MV/DJS FIRST AMENDED COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF AND FOR REVIEW OF ADMINISTRATIVE ACTION

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Plaintiff The Regents of the University of California complains as follows:

NATURE OF THE CASE

1. This is a civil action for declaratory and injunctive relief brought by The Regents of the University of California ("Regents") challenging the exercise of regulatory jurisdiction by the Cabinet Secretary ("Secretary") of the New Mexico Environment Department ("NMED") over the Los Alamos National Laboratory ("LANL"), which is preempted by federal law, exceeds the applicable sovereign immunity waiver and is otherwise in violation of federal and state law. This lawsuit arises from the Secretary's unlawful attempt to exercise regulatory jurisdiction over LANL through a series of related regulatory actions purportedly taken pursuant to the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1, *et seq*. (2002).

2. On May 2, 2002, the Secretary released a unilateral Determination of Imminent and Substantial Endangerment to Health and the Environment ("Determination"). This regulatory action was based primarily on, and purports to regulate, the alleged presence, releases and potential dangers of radioactive materials regulated by the Atomic Energy Act, discharges authorized by the Federal Water Pollution Control Act, chemicals regulated by the Toxic

Substances Control Act such as polychlorinated biphenyls, and military explosives and munitions-related compounds, all of which are beyond the Secretary's regulatory power.

3. On September 9, 2002, the Secretary issued a unilaterally revised Installation Work Plan Schedule that substantially modifies LANL's existing permit under the New Mexico Hazardous Waste Act. Once again, the Secretary purports in this Installation Work Plan Schedule to direct LANL to take actions affecting activities, materials, substances and wastes that are beyond his regulatory authority and without utilizing the procedures, or making the findings, required by law.

4. Accordingly, Plaintiff requests that the Court declare that the Secretary's exercise of regulatory authority over LANL invalid, in whole and in part, because it contravenes a multitude of federal laws, and to issue all appropriate temporary, preliminary and permanent injunctive relief. In addition, Plaintiff requests that the Court exercise its supplemental jurisdiction to undertake judicial review of the Determination and the revised Installation Work Plan Schedule.

PARTIES

5. Plaintiff The Regents of the University of California ("Regents" or "Plaintiff") is a constitutional agency and an arm of the State of California. The Regents operates LANL under a contract with the United States Department of Energy ("DOE").

6. Defendant John R. D'Antonio, Jr. ("Defendant") is the Cabinet Secretary of NMED, an agency of the State of New Mexico, and he is sued herein in his official capacity. Defendant John R. D'Antonio, Jr. is the successor to Peter Maggiore as Cabinet Secretary of NMED.

JURISDICTION AND VENUE

7. The Court has subject matter jurisdiction over the claims for relief set forth herein pursuant to 28 U.S.C. § 1331 (federal question jurisdiction), 42 U.S.C. § 1983 (deprivation of

rights, privileges or immunities), 28 U.S.C. § 1367 (supplemental jurisdiction), and 5 U.S.C. §§ 702-706 (judicial review of administrative action).

8. Venue is properly laid in this judicial district pursuant to 28 U.S.C. § 1391(b) because this civil action is not founded on diversity of citizenship and a substantial part of the events or omissions giving rise to the claims herein occurred in this judicial district, and the property relating to the claims is located in this judicial district.

BACKGROUND FACTS

9. LANL is a federal facility located in northern New Mexico. It is one of several national laboratories that support DOE's responsibilities for national security, energy resources, environmental quality and science. Since its inception in 1943, LANL's primary mission has been nuclear weapons research and development. As a federal facility engaged in these activities, LANL is subject to federal statutes, regulations and orders regulating materials, discharges and wastes at the facility. These statutes, regulations and orders are administered by DOE and United States Environmental Protection Agency ("EPA"), and include the Atomic Energy Act of 1954 ("AEA"), 42 U.S.C. §§ 2014, *et seq.*, Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. §§ 6901, *et seq.*, Federal Water Pollution Control Act ("FWPCA"), 33 U.S.C. §§ 1251, *et seq.*, and Toxic Substances Control Act ("TSCA"), 15 U.S.C. §§ 2601, *et seq.*

A. The ISE Determination

10. On May 2, 2002, Defendant released the Determination relating to LANL. The Determination purports to find that radioactive, hazardous and solid wastes have been released into the environment at LANL and "may present an imminent and substantial endangerment to human health and the environment" (sometimes hereinafter referred to as the "Endangerment Finding"). Plaintiff was not given an opportunity to review or comment upon the Determination

before it was released. A true and correct copy of the Determination is attached hereto as Exhibit "A."

11. Defendant also released, on May 2, 2002, a 254-page "Draft LANL Order" that proposes to impose a series of prescribed investigative, monitoring and corrective action obligations on the Regents at LANL. Defendant stated that he would issue the final version of the Draft LANL Order after the close of a 60-day public comment period. Defendant extended the comment period to July 31, 2002.

12. The Determination and the Draft LANL Order are inextricably connected because the remedial requirements contained in the Draft LANL Order are allegedly based upon, and justified by, the Endangerment Finding in the Determination. The Draft LANL Order expressly cites the Endangerment Finding in both Findings of Fact and Conclusions of Law.

13. The Determination purports to make a legal Endangerment Finding regarding LANL that is based primarily on the alleged presence, releases and potential dangers posed by materials, substances and wastes that federal law has placed beyond Defendant's regulatory authority, such as radionuclides, the radioactive components of mixed wastes, polychlorinated biphenyls ("PCBs"), materials in discharges from point sources, and military explosives and munitions-related compounds used for their intended purpose. Defendant identifies this Endangerment Finding as the purported legal basis for the proposed Draft LANL Order.

14. The Determination specifically identifies 15 total Material Disposal Areas ("MDAs") in four Technical Areas ("TAs") in reaching its Endangerment Finding. (Determination, ¶¶ 27-52.) According to the Determination, every one of these areas allegedly contains radionuclides and/or mixed waste with radionuclide components.

15. The Determination identifies eight specific TAs where "releases" allegedly occurred that are the basis of the Endangerment Finding. (Determination, ¶¶ 53-111.) The Determination specifies that seven of the eight TAs involved nuclear research, testing, operation or other activities that utilize or produce radionuclides: TA-2 (nuclear reactors); TA-16 (releases

of uranium during machining of high explosives); TA-21 (production of metals and alloys of plutonium and other transuranic elements); TA-45 (nuclear material research); TA-50 (wastewater treatment plant for radioactive materials); TA-54 (waste disposal area for many products, including tritium); and an unidentified TA in paragraph 110 of the Determination where there allegedly was dynamic testing at firing sites in which 100,000 kilograms of depleted and natural uranium were used. The Determination also identifies five alleged detections of contaminants in water wells to support its Endangerment Finding. (Determination, ¶¶ 112-119.) Two of the alleged detections were solely of strontium-90, one was solely of tritium, and one identified tritium as one of three contaminants detected.

16. In formulating and releasing the Determination, Defendant has exceeded his statutory authority and violated Plaintiff's procedural rights by, among other things:

(A) Disregarding the New Mexico Hazardous Waste Act ("HWA") by failing to base the Determination on the findings required by the HWA, NMSA 1978, § 74-4-10.1 (1989), which is the statute on which the Determination is explicitly based;

(B) Exceeding his statutory authority by attempting to issue and finalize the Determination separate and apart from any order authorized by Section 74-4-10.1 or any other section of the HWA;

(C) Taking the position that the Determination constitutes "final administrative action" under the HWA, NMSA 1978, § 74-4-14(A) (1992), when the HWA and applicable principles of law do not authorize such a "final administrative action" finding;

(D) Issuing the Determination, which is, in essence, part of a disguised compliance and/or corrective action order under the HWA, NMSA 1978, § 74-4-10 (2002), without affording the procedural protections guaranteed to Plaintiff (including the right to a public hearing) under that Section;

(E) Issuing the Determination, which is tantamount to an HWA permit reissuance or major modification, while circumventing the procedural protections guaranteed to Plaintiff for HWA permit reissuance and major permit modifications; and

(F) Failing to otherwise provide Plaintiff with the procedural protections provided by federal and New Mexico law for any determinations such as the one Defendant purports to make here.

17. In sum, Defendant's Determination is primarily based on the alleged presence and releases from federal facilities for the research, production, use, testing and/or operation of radionuclides, the alleged detection of radioactive substances in water wells and the alleged presence of military explosives and munitions-related compounds used for their intended purpose. These are activities, materials, substances and wastes that are beyond Defendant's regulatory authority.

18. Plaintiff believes that the Determination does not constitute "final administrative action" pursuant to the HWA, Section 74-4-14(A). Plaintiff is informed and believes, and on that basis alleges, that Defendant believes that the Determination is final administrative action that is now subject to judicial review. Plaintiff has filed this action to protect its rights in the event that the Court finds that the Determination is a final and appealable action by Defendant. Although Plaintiff chooses to have all of the claims in the Complaint adjudicated by this Court, it filed a protective appeal challenging the Determination in the New Mexico Court of Appeals after filing this Complaint on June 3, 2002.

B. The 2002 Installation Work Plan

19. On November 8, 1989, pursuant to its delegated authority under RCRA, the Environmental Improvement Division of the New Mexico Health and Environment Department (now NMED) issued LANL a Hazardous Waste Facility Permit ("RCRA Permit") addressing the treatment and storage of RCRA-defined hazardous wastes at LANL. On March 8, 1990, Region 6 of the EPA issued a Hazardous and Solid Waste Amendment Module to LANL's RCRA

Permit ("Module VIII"). Module VIII prescribes both a specific corrective action program and provides the requirements for environmental restoration activities at LANL. EPA substantially modified Module VIII on April 8, 1994. Effective January 2, 1996, EPA delegated this authority to NMED, and NMED assumed jurisdiction over Module VIII.

20. For Potential Release Sites ("PRSs") that are subject to jurisdiction under LANL's RCRA Permit, Module VIII required that LANL submit a facility-wide work plan called the "LANL Installation RI/FS Work Plan," or "IWP," to provide a framework of operating principles and procedures for the implementation of RCRA corrective action at LANL. The IWP also required the inclusion of a work schedule indicating the major milestones and other tasks to be accomplished at each PRS for the upcoming five years. LANL was also required to update the IWP schedule on an annual basis. IWP annual schedule updates are subject to NMED approval, and any changes to previously approved schedules must be processed as permit modifications to LANL's RCRA Permit under the HWA, Section 74-4-4.2, or Section O of Module VIII.

21. LANL's Environmental Restoration Project ("ER Project") is responsible for the environmental investigation and remediation of all sites with contaminants at LANL, whether such areas are within RCRA/HWA jurisdiction or outside of RCRA/HWA jurisdiction (in which case such areas are being addressed pursuant to orders and policies prescribed by DOE pursuant to its authority under the AEA). To chart the corrective action at all sites of concern at LANL, and to maximize the efficient use of its resources, LANL's ER Project has for many years submitted the IWP as a comprehensive document, addressing all sites of concern, with reservations that some areas are beyond RCRA/HWA jurisdiction. As stated in the March 2000 IWP Revision 8: "Certain issues of concern at the Laboratory are exempt from RCRA's definition of solid waste and are therefore not subject to the provisions of Module VIII, for example, source, by-product, and special nuclear materials (regulated under the Atomic Energy Act). The ER Project adheres to the provisions of applicable DOE orders to implement a

technically comprehensive program that covers all potentially contaminated sites not regulated under RCRA. Provisions in this IWP pertaining to subjects outside the scope of RCRA are not enforceable under the Laboratory's Hazardous Waste Facility Permit."

22. On or about March 2000, in accordance with the procedures set forth in LANL's RCRA permit, LANL submitted to Defendant a proposed IWP (Revision 8, LA-UR-OO-1336). LANL thereafter submitted its annual update to the IWP Work Schedule. On December 21, 2001, Defendant issued a draft IWP containing significant revisions for a thirty-day public comment period. During that time period, LANL submitted extensive comments to Defendant concerning a multitude of procedural and substantive problems with the draft IWP.

23. On September 9, 2002, Defendant issued a new IWP Work Schedule ("2002 IWP Work Schedule"), with a response to public comments, purportedly under the authority in LANL's RCRA Permit. The 2002 IWP Work Schedule requires LANL to undertake specific environmental restoration and reporting activities, retroactively commencing on February 28, 2002 and continuing through December 31, 2006. A true and correct copy of the 2002 IWP Work Schedule is attached hereto as Exhibit "B." NMED's "Response to Public Notice No. 01-10" accompanying its issuance of the 2002 IWP Work Schedule states that any failure by LANL, as permittee, to comply with the NMED-revised schedule in the 2002 IWP Work Schedule would subject LANL to "enforcement, permit termination, permit revocation, or denial of a permit renewal application."

24. The Defendant's issuance, on September 9, 2002, of the 2002 IWP Work Schedule is contrary to law in several respects, including without limitation:

(A) Defendant's imposition of requirements to perform certain tasks in specific time schedules for particular sites pursuant to LANL's RCRA permit, despite the fact that these sites are not within the scope of RCRA/HWA because they contain materials that are subject to the AEA, FWPCA, TSCA or constitute exempt military-munitions related contamination. In so doing, Defendant purports to expose LANL to liability under the HWA for

failure to comply. Of the ten sites for which tasks are specified for calendar year 2002 in the 2002 IWP Work Schedule, eight of the sites listed are wholly or partially beyond RCRA/HWA jurisdiction because they reflect AEA units and/or activities, point source discharges subject to the FWPCA, PCBs regulated by TSCA and exempt military munitions-related compounds or activities. Of the 20 sites for which tasks are specified for calendar year 2003 in the 2002 IWP Work Schedule, only three appear to be wholly within NMED's RCRA/HWA jurisdiction;

(B) Defendant unilaterally modified both the schedule for LANL-proposed tasks, and the scope and nature of LANL-proposed tasks, without following the procedures for modification of the corrective action schedules specified in Section O of the LANL RCRA Permit, or the procedures for major permit modifications (including affording the permittee a public hearing) in 20.4.1.901 NMAC. Moreover, Defendant did not have any rational basis for such changes and did not specify in writing the basis for such changes; and

(C) Defendant unilaterally added completely new tasks for some units (some of which are beyond the Secretary's RCRA/HWA jurisdiction), including interim actions, without having any rational basis for such tasks and changes, without specifying in writing the basis for such changes, and without demonstrating any need to impose interim actions in the midst of the on-going investigative and remedial work by the ER Project.

25. In sum, Defendant's 2002 IWP Work Schedule is directed primarily at sites containing contaminants originating from the research, production, use, testing and/or operation of radionuclides, the alleged detection of radioactive substances in water wells, point source discharges subject to the FWPCA, PCBs regulated by TSCA and the alleged presence of military explosives and munitions-related compounds that are not "hazardous waste" within the meaning of the HWA. These activities, materials, substances and wastes are beyond Defendant's regulatory authority.

26. The 2002 IWP Work Schedule is final administrative action that is now subject to judicial review pursuant to the HWA, Section 74-4-14(A). Although Plaintiff chooses to have all

of the claims in the Complaint adjudicated by this Court, it plans to file a protective appeal challenging the 2002 IWP Work Schedule in the New Mexico Court of Appeals after filing this Complaint.

STATUTORY AND REGULATORY FRAMEWORK

27. The Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. §§ 6901, *et seq.*, governs the treatment, storage and disposal of hazardous waste in the United States. Pursuant to RCRA, the EPA has the authority to delegate to an individual state, upon meeting certain conditions, the administration of RCRA within its borders. EPA has approved NMED as the authorized agency to administer RCRA in the State of New Mexico.

28. The New Mexico legislature has adopted the HWA, which mirrors many RCRA provisions and governs the treatment, storage and disposal of hazardous waste in New Mexico. NMSA 1978, §§ 74-4-1 to 74-4-14 (2002). The HWA provides the New Mexico Environmental Improvement Board ("EIB") regulatory jurisdiction over "hazardous" wastes as defined in the HWA, NMSA 1978, § 74-4-4 (2002), and provides Defendant with authority to enforce the EIB's regulations and limited authority to issue orders and take judicial action to abate imminent and substantial endangerments from the treatment, storage, transportation or disposal of "hazardous waste" and "solid waste" as defined in the HWA, NMSA 1978, § 74-4-13(A) (2001).

29. RCRA and the HWA define "solid waste" as any garbage, refuse, sludge . . . and other discarded material . . . resulting from industrial, commercial, mining and agricultural operations, and from community activities," but excluding "solid or dissolved materials in domestic sewage or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear or byproduct material as defined by the federal Atomic Energy Act of 1954, as amended (68 Stat. 923)[.]" 42 U.S.C. § 6903(29); NMSA 1978, § 74-4-3(O) (2002).

30. The HWA further provides that "[n]othing in the Hazardous Waste Act shall be construed to apply to any activity or substance which is subject to the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 *et seq.*), the Safe Drinking Water Act, as amended, (42 U.S.C. 300f *et seq.*) or the Atomic Energy Act of 1954, as amended, (42 U.S.C. 2011 *et seq.*) except to the extent that such application or regulation is not inconsistent with the requirements of such acts[.]" NMSA 1978, § 74-4-3.1 (1981).

31. The HWA provides authority to Defendant, upon finding that a "release" of hazardous waste from a defined facility or site "may present a substantial hazard to health or the environment," to issue an "order" which requires the owner or operator to "conduct such monitoring, testing, analysis and reporting with respect to such facility or site as the director deems reasonable to ascertain the nature and extent of contamination." NMSA 1978, § 74-4-10.1 (1989). The Determination is solely and explicitly based on Section 74-4-10.1. However, contrary to the statutory requirement, Defendant makes no finding whatsoever in the Determination regarding any "substantial hazard" to health or the environment.

32. In order to reissue or undertake a major modification of LANL's existing RCRA Permit, Defendant is required to follow specified administrative procedures set forth in Section 74-4-4.2 of the HWA and 20.4.1.901 NMAC, which afford Plaintiff the opportunity for notice and public comment on any proposed reissuance or major permit modification, as well as the right to a public hearing at which Plaintiff could attend, examine witnesses and present oral argument. Defendant did not comply with these procedural requirements in issuing the Determination or the 2002 IWP Work Schedule.

DECLARATORY JUDGMENT AUTHORITY

33. The Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, authorizes the Court to declare the rights or other legal relations of any interested party seeking such a declaration.

Any necessary or proper relief based on a declaratory judgment may be granted against any adverse party whose rights have been determined by such judgment.

FIRST CLAIM FOR RELIEF

**(Federal Supremacy Clause — Preemption
Atomic Energy Act Activities And Radioactive Materials)**

34. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 33 of this Complaint.

35. Congress enacted the AEA in 1954 to promote the development of atomic energy for peaceful purposes under a program of federal regulation and licensing. The AEA comprehensively regulates radioactive materials. *See, e.g.,* 42 U.S.C. § 2014(e), (z), (aa). The AEA grants DOE and the Nuclear Regulatory Commission exclusive authority for regulating radioactive materials. *See, e.g.,* 42 U.S.C. § 2201(b), (i)(3). Pursuant to this authority, DOE has developed and implemented an extensive regulatory regime for managing radioactive materials.

36. The AEA provides DOE with the exclusive authority to regulate all pure radioactive waste and the radioactive portion of any waste mixtures.

37. RCRA directs EPA to identify and list those "solid wastes" that are "hazardous wastes." 42 U.S.C. § 6921. "Hazardous waste" is a subset of "solid waste." 42 U.S.C. § 6903(5). RCRA specifically provides that the term "solid waste" does not include source, special nuclear or byproduct material as defined by the AEA. 42 U.S.C. § 6903(27).

38. RCRA further provides that the Act does not "apply to (or authorize any State, interstate, or local authority to regulate) any activity or substance which is subject to . . . the Atomic Energy Act of 1954" except to the extent that such application or regulation is not inconsistent with the requirements of the Act. 42 U.S.C. § 6905. The HWA also contains this prohibition. NMSA 1978, § 74-4-3.1.

39. The HWA adopts RCRA's definition of "hazardous waste" as a subset of "solid waste." NMSA 1978, § 74-4-3(K) (2002). It also adopts RCRA's definition of "solid waste,"

thereby excepting from the definition of solid waste "source, special nuclear, or byproduct material." NMSA 1978, § 74-4-3(O).

40. Since the AEA occupies the field for regulation of radioactive materials, and since Defendant's purported regulation of radioactive materials otherwise conflicts with federal law, Defendant's Endangerment Finding in the Determination and Defendant's 2002 IWP Work Schedule, which are based on the regulation of radioactive materials, including the alleged presence, releases and potential dangers of radioactive materials, are preempted by the AEA pursuant to the Supremacy Clause of the United States Constitution, U.S. Const. Art. IV, cl.2.

41. An actual controversy has arisen and now exists between Plaintiff and Defendant regarding Defendant's authority to predicate the Determination and the 2002 IWP Work Schedule on the presence, alleged releases and potential dangers posed by radionuclides whether alone, in mixed waste or in the environment.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

SECOND CLAIM FOR RELIEF

(Federal Supremacy Clause - Preemption Other Activities And Substances)

42. Plaintiff realleges and incorporates herein by reference each and every allegation set forth in paragraphs 1 through 41 of the Complaint.

43. The Determination purports to base the Endangerment Finding, in part, on the alleged presence, releases and potential dangers of materials originating in discharges from point sources and such chemicals as polychlorinated biphenyls ("PCBs"). Moreover, Defendant includes conventional explosives, high explosive compounds including trinitrotoluene, dinitrotoluene, octahydro-1357-tetranitro-1357-tetrazocine and cyclonite, and munitions-related compounds such as perchlorate (collectively "military explosives and munitions-related compounds") in support of the Endangerment Finding.

44. Defendant's unilateral modifications in the 2002 IWP Work Schedule purport to impose RCRA/HWA permit jurisdiction over sites and units whose contamination originates from point source discharges subject to the FWPCA and from military-munitions related activities that do not produce "solid waste," or which constitutes PCBs not subject to RCRA/HWA.

45. The Federal Water Pollution Control Act ("FWPCA"), 33 U.S.C. §§ 1251-1387, is a comprehensive federal regulatory scheme for the protection of water quality in the United States.

46. The FWPCA prohibits the discharge of pollutants from a point source into waters of the United States unless a person has received a National Pollutant Discharge Elimination System ("NPDES") permit to do so under the FWPCA. 33 U.S.C. §§ 1311 & 1342. NPDES permits are issued by EPA, unless EPA has delegated such permit authority to an individual state. Since the State of New Mexico has not been granted such permit authority, EPA operates the NPDES permit program in New Mexico.

47. Section 1006(a) of RCRA and Section 74-4-3.1 of the HWA exclude from hazardous waste regulation any activity or substance which is subject to the FWPCA. In addition, both the federal and state regulations and the HWA exclude from the definition of "solid waste" any industrial wastewater discharges that are point source discharges subject to regulation under Section 402 of the FWPCA, as amended. 40 C.F.R. § 261.4, NMSA 1978, § 74-4-3 (O), and 20.4.1.200 NMAC. Moreover, the HWA and RCRA bar regulation of any activity or substance subject to the FWPCA if such regulation would be inconsistent with the FWPCA. NMSA 1978, § 74-4-3.1; 42 U.S.C. § 6905(a). Therefore, Defendant does not have the authority to regulate under the HWA any such activities or substances or any materials originating in LANL point source discharges.

48. The Toxic Substances Control Act ("TSCA"), 15 U.S.C. §§ 2601-2692, regulates certain aspects of chemical substances and mixtures, including PCBs. Section 1006(b) of RCRA

requires the integration of RCRA with other federal statutes, such as TSCA, to minimize overlapping and duplicative regulation. Any chemical substances or mixtures regulated by TSCA are thus exempt from regulation under RCRA or the HWA (whose regulation of hazardous and solid waste parallels RCRA). PCBs are regulated by EPA under TSCA. Therefore, Defendant does not have the legal authority under the HWA to regulate PCBs.

49. Section 3004(y) of RCRA directs EPA to promulgate regulations "identifying when military munitions become hazardous waste" for purposes of subchapter III of RCRA and providing for the safe transportation and storage of such waste. 42 U.S.C. § 6924(y)(1). Pursuant to this authority, the EPA promulgated the Military Munitions Rule ("MMR"). *See* 40 C.F.R. §§ 260.10, 261.2(a)(2)(iv), 266.200, *et seq*. The EIB adopted the provisions of the MMR as part of New Mexico's Hazardous Waste Management Regulations, *see* 20.4.1.100-900 NMAC, and, in any event, is prohibited from adopting more stringent rules than those adopted by EPA under RCRA. *See* NMSA 1978, § 74-4-4(A).

50. The MMR provides that "military munitions" do not constitute "solid waste" under RCRA when such munitions are used for their intended purpose including, among other things: (i) the use of the munitions in research, development, testing and evaluation of military weapons; (ii) the recovery, collection and on-range destruction of unexploded fragments during range clearances at active and inactive ranges; and (iii) the repair, reuse, recycling and reclamation of munitions or their components. 40 C.F.R. § 266.202(a). Pursuant to the MMR, "military munitions" include all types of conventional and chemical ammunition products and their components produced by or for the military for national defense and security, including those products and components under DOE control. *Id.* at § 260.10.

51. Plaintiff is informed and believes, and on that basis alleges, that other materials, substances and wastes beyond Defendant's authority form the basis of the Determination and the 2002 IWP Work Schedule.

52. The Determination and the 2002 IWP Work Schedule are invalid, in whole or in part, because they purport to regulate, through the alleged presence, releases and potential dangers of, materials discharged through point sources under the FWPCA, PCBs, military explosives and munitions-related compounds and other materials, substances and activities beyond Defendant's regulatory authority. Moreover, such regulation is preempted by the Federal Supremacy Clause because it is expressly preempted by and in conflict with federal law.

53. An actual controversy has arisen and now exists between Plaintiff and Defendant regarding Defendant's authority to predicate the Determination and the 2002 IWP Work Schedule on the alleged presence, releases and potential dangers of other activities and substances including, but not limited to, materials originating in discharges from LANL point sources, such chemicals as PCBs, and military explosives and munitions-related compounds.

WHEREFORE, Plaintiff prays for judgment as hereinafter set forth.

THIRD CLAIM FOR RELIEF

(Sovereign Immunity)

54. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 53 of this Complaint.

55. The federal government is immune from state regulation except to the extent that it waives such immunity. LANL is a federal facility owned by DOE, an agency of the federal government.

56. RCRA contains a limited waiver of sovereign immunity for federal facilities. 42 U.S.C. § 6961. It provides, among other things, that any executive agency having jurisdiction over any solid waste management facility or disposal site shall be subject to, and comply with, all Federal, State, interstate, and local "requirements," both substantive and procedural, respecting "control and abatement of solid waste or hazardous waste disposal, in the same manner and to the same extent, as any person is subject to such requirements . . . ." *Id.*

57. Neither the AEA nor any other federal law waives federal sovereign immunity from regulation of DOE facilities by states with respect to activities and materials covered by the AEA. Both RCRA and the HWA expressly exclude regulation of activities and materials covered by the AEA.

58. In addition, because the HWA imposes no "requirements" regulating radioactive materials, the Determination and the 2002 IWP Work Schedule exceed RCRA's limited waiver of sovereign immunity for federal facilities.

59. Any materials discharged under the authority of the FWPCA, any chemicals regulated by TSCA, such as PCBs, and military explosives and munitions-related compounds not subject to RCRA pursuant to the MMR are also outside the limited waiver of sovereign immunity in RCRA for federal facilities.

60. An actual controversy has arisen and now exists between Plaintiff and Defendant regarding whether the Determination and the 2002 IWP Work Schedule, in whole and in part, are invalid because they contravene the federal government's sovereign immunity.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

FOURTH CLAIM FOR RELIEF

(Fundamental Fairness)

61. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 60 of the Complaint.

62. The fundamental fairness doctrine requires that an administrative agency provide reasonable notice of its actions and otherwise conduct its administrative decision-making in full accordance with the procedures set forth in applicable federal and state laws and regulations.

63. In formulating and issuing the Determination, Defendant has exceeded his statutory authority and violated Plaintiff's procedural rights by, among other things:

(A) Disregarding the HWA by failing to base the Determination on the findings required by Section 74-4-10.1, which is the statute on which the Determination is explicitly based;

(B) Exceeding his statutory authority by attempting to issue and finalize the Determination separate and apart from any order authorized by Section 74-4-10.1 or any other section of the HWA;

(C) Taking the position that the Determination constitutes "final administrative action" under Section 74-4-14(A), when HWA and applicable principles of law do not authorize such a "final administrative action" finding;

(D) Issuing the Determination, which is, in essence, part of a disguised and/or corrective action compliance order, under the HWA, Section 74-4-10, without affording the procedural protections guaranteed to Plaintiff (including the right to a public hearing) under that Section;

(E) Issuing the Determination, that is tantamount to an HWA permit reissuance or major modification, while circumventing the procedural protections guaranteed to Plaintiff for HWA permit reissuance and major permit modifications; and

(F) Failing to otherwise provide Plaintiff with the procedural protections provided by federal and New Mexico law for any determinations such as the one Defendant purports to make here.

64. In formulating and issuing the 2002 IWP Work Schedule, Defendant has exceeded his statutory authority and violated Plaintiff's procedural rights by, among other things:

(A) Issuing the 2002 IWP Work Schedule, that is tantamount to an HWA major permit modification, while circumventing the procedural protections guaranteed to Plaintiff for HWA major permit modifications, including the right to a public hearing;

(B) Issuing the 2002 IWP Work Schedule without following the requirements of Section O of the LANL RCRA Permit, entitled "Modifications of this Module" and applicable to deadline changes;

(C) Failing to provide LANL with any stated or rational basis for the unilateral changes to the scope and schedule of LANL-proposed tasks, and for imposing new tasks such as interim actions; and

(D) Imposing new tasks that have never been described, mentioned or defined before and which are not defined in the NMED September 9, 2002 action, and whose meanings are thus vague and ambiguous, and deprive LANL of any fair notice.

65. Defendant's violation of Plaintiff's fundamental fairness rights invalidates Defendant's issuance of the Determination and the 2002 IWP Work Schedule.

66. An actual controversy has arisen and now exists between Plaintiff and Defendant regarding whether Defendant's issuances of the Determination and the 2002 IWP Work Schedule are invalid, in whole and in part, because they violate Plaintiff's procedural rights.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

FIFTH CLAIM FOR RELIEF

(Judicial Review of the ISE Determination)

67. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 66 of this Complaint.

68. In this Claim for Relief, Plaintiff requests that this Court undertake judicial review of the legal adequacy of the Determination pursuant to its supplemental jurisdiction set forth in 28 U.S.C. § 1367. This claim arises out of the same common nucleus of operative facts as the federal question jurisdiction claims set forth in this Complaint, and they are so closely related so as to form part of the same case or controversy.

69. New Mexico law provides for judicial review of the Determination, if it constitutes final administrative action, using three standards. Specifically, the Determination will be invalidated if it is arbitrary, capricious or an abuse of discretion, if it is not supported by substantial evidence, or if it is not in accordance with law. NMSA 1978, § 74-4-14(C).

70. The Determination issued by Defendant is arbitrary, capricious and an abuse of discretion because, among other things:

(A) It is not based on the "substantial hazard" finding prescribed by the HWA, Section 74-4-10.1;

(B) It is inconsistent with and contradictory to LANL's existing RCRA and other permits;

(C) The Determination was issued without appropriately notifying local agencies pursuant to the HWA, Section 74-4-13(C); and

(D) The Determination is otherwise deficient as set forth in this Complaint.

71. The Determination is not supported by substantial evidence in the administrative record.

72. The Determination is not in accordance with law for all of the reasons set forth in this Complaint.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

SIXTH CLAIM FOR RELIEF

(Judicial Review of the 2002 IWP Work Schedule)

73. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 66 of this Complaint.

74. In this Claim for Relief, Plaintiff requests that this Court undertake judicial review of the legal adequacy of the 2002 IWP Work Schedule pursuant to its supplemental jurisdiction set forth in 28 U.S.C. § 1367. This claim arises out of the same common nucleus of

operative facts as the federal question jurisdiction claims set forth in this Complaint, and they are so closely related so as to form part of the same case or controversy.

75. New Mexico law provides for judicial review of the Determination, if it constitutes final administrative action, using three standards. Specifically, the 2002 IWP Work Schedule will be invalidated if it is arbitrary, capricious or an abuse of discretion, if it is not supported by substantial evidence, or if it is not in accordance with law. NMSA 1978, § 74-4-14(C).

76. The 2002 IWP Work Schedule issued by Defendant is arbitrary, capricious and an abuse of discretion because, among other things:

(A) Defendant issued the 2002 IWP Work Schedule, which is tantamount to an HWA major permit modification, while circumventing the procedural protections guaranteed to Plaintiff for HWA major permit modifications, including the right to a public hearing;

(B) Defendant issued the 2002 IWP Work Schedule without following the requirements of Section O of the LANL RCRA Permit, entitled "Modifications of this Module" and applicable to limited deadline changes;

(C) Defendant failed to provide LANL with any stated or rational basis for the unilateral changes to the scope and schedule of LANL-proposed tasks, and for imposing new tasks such as interim actions;

(D) The 2002 IWP Work Schedule imposes new tasks that have never been described, mentioned or defined before and which are not defined in the NMED September 9, 2002 action, and whose meanings are thus vague and ambiguous, and deprive LANL of adequate notice; and

(E) The 2002 IWP Work Schedule is otherwise deficient as set forth in this Complaint.

77. The 2002 IWP Work Schedule is not supported by substantial evidence in the administrative record.

78. The 2002 IWP Work Schedule is not in accordance with law for all of the reasons set forth in this Complaint.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

SEVENTH CLAIM FOR RELIEF

(Declaratory Judgment – Defendant's Related Regulatory Actions)

79. Plaintiff realleges and incorporates herein by reference each and every allegation contained in paragraphs 1 through 66 of this Complaint.

80. The Declaratory Judgment Act provides that, in a case of actual controversy within its jurisdiction, the Court may "declare the rights and other legal relations of any interested party seeking such declaration whether or not further relief is or could be sought." 28 U.S.C. § 2201.

81. Prior and subsequent to Defendant's release of the Determination and the 2002 IWP Work Schedule, Defendant has engaged in a number of other related regulatory actions through which Defendant has also asserted regulatory jurisdiction over radionuclides, the radioactive components of hazardous wastes, materials in discharges from LANL point sources, PCBs, and military explosives and munitions-related compounds at LANL. These related regulatory actions include, but are not limited to, the following:

(A) On February 12, 2001, Defendant issued a Request for Information Pursuant to the New Mexico Hazardous Waste Act and the Resource Conservation and Recovery Act ("February 12, 2001 RFI") requiring LANL to provide detailed information regarding each "radionuclide waste or waste stream, including mixed and non-mixed wastes, that is currently or has been at any time generated, treated, stored, disposed of, otherwise managed at, or transported to the LANL facility." (February 12, 2001 RFI at 5, ¶¶ 1 & 2.) Although Plaintiff responded to the February 12, 2001 RFI in a series of lengthy and detailed responses, Plaintiff provided such information voluntarily and expressly noted that such materials are not subject to HWA/RCRA

regulation. A true and correct copy of the February 12, 2001 RFI is attached hereto as Exhibit "C."

(B) On August 5, 2002, Defendant issued a "Determination of Incompleteness" rejecting LANL's April 2002 Revised Closure/Post-Closure Plans and Compliance Demonstration for certain disposal units at TA-54 Areas G, L and H that received hazardous waste from 1980-85. Among other things, Defendant alleges that the Plans/Compliance Demonstration did not include information concerning "source, special nuclear, and by-product materials" from certain units within TA-54. (Determination of Incompleteness at 2.) As a result of Defendant's rejection of the Plans, based on its improper attempted exercise of HWA authority over radioactive materials, Defendant may significantly delay issuance of LANL's RCRA hazardous waste facility permit. A true and correct copy of the August 5, 2002 Determination of Incompleteness is attached hereto as Exhibit "D."

(C) On August 21, 2002, Defendant issued a Request for Information Regarding Accelerator Produced Radioactive Material Pursuant to the New Mexico Hazardous Waste Act and the Resource Conservation and Recovery Act ("August 21, 2002 RFI") requiring LANL to provide detailed information "regarding the source, composition, nature, and quantity of accelerator produced radioactive materials that are or have been generated, treated, stored, disposed of, or otherwise managed at, or transported to, the LANL facility. (August 21, 2002 RFI at 1, 5, 7.) Plaintiff responded to the August 21, 2002 RFI on September 23, 2002, while objecting to the jurisdictional basis, materials purportedly regulated and scope of the RFI. A true and correct copy of the August 21, 2002 RFI is attached hereto as Exhibit "E."

82. Since the AEA occupies the field for regulation of radioactive materials, and since Defendant's purported regulation of radioactive and radionuclide materials otherwise conflicts with federal law, Defendant's asserted jurisdiction over radioactive and radionuclide materials is preempted by the AEA pursuant to the Supremacy Clause of the United States Constitution, U.S. Const. Art. IV, cl.2. Defendant also lacks regulatory authority over radioactive and radionuclide

materials under the HWA, which, like RCRA, excludes from the definition of solid waste "source, special nuclear, or byproduct material" and other radioactive materials as defined by the AEA. NMSA 1978, § 74-4-3(O). Similarly, Defendant lacks regulatory authority over materials originating in LANL point source discharges regulated by the FWPCA, chemical substances and mixtures regulated by TSCA, and military explosives and munitions-related compounds subject to the MMR, as a result of the limits on Defendant's authority under the HWA, RCRA and the Federal Supremacy Clause.

83. In sum, a genuine controversy has arisen, in a variety of permitting, regulatory and enforcement contexts, regarding whether Defendant has the HWA power to regulate radioactive materials, materials discharged from LANL point sources, PCBs, and military explosives and munitions-related compounds. These issues arise under the Federal Supremacy Clause and in the context of the Federal sovereign immunity waiver, and they also constitute *ultra vires* acts beyond Defendant's regulatory authority. These controversies pervade the relationship between the parties and continue to arise on a regular basis in these contexts. Accordingly, there is an urgent need for a court adjudication of these issues.

84. An actual controversy has arisen and now exists between Plaintiff and Defendant on these issues. This controversy is one of sufficient immediacy to justify the issuance of declaratory relief.

85. Plaintiff seeks a declaratory judgment that:

(A) Defendant lacks authority under the HWA to regulate: (1) source, special nuclear or byproduct materials; (2) the radioactive component of mixed wastes; (3) the hazardous waste component of mixed wastes in any manner that would conflict with AEA regulation of the radioactive component; (4) accelerator-produced radioactive materials that are regulated by DOE at LANL under the AEA; (5) materials discharged from LANL point sources at any time; (6) military explosives and munitions-related compounds used for their intended purpose; and (7) PCBs;

(B) Defendant lacks authority to regulate any materials identified in subparagraph (A) herein during the process of considering or issuing any work plan schedules, closure determinations or any other permit-related decisions to LANL under the HWA; and

(C) Defendant lacks authority to seek information regarding any materials identified in subparagraph (A) herein under Section 74-4-4.3(A) of the HWA or Section 3007(a) of RCRA.

WHEREFORE, Plaintiff prays for relief as hereinafter set forth.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff The Regents of the University of California prays for judgment against Defendant John R. D'Antonio, Jr. as follows:

1. On its First Claim for Relief, for a declaratory judgment that: (A) Defendant does not have the legal authority to regulate activities or radioactive materials governed by the AEA; (B) the Determination and the 2002 IWP Work Schedule are based, in whole and in part, on the alleged presence, releases and potential dangers of radioactive materials; and (C) the Determination and the 2002 IWP Work Schedule are invalid, in whole and in part, because they constitute prohibited regulation of activities and radioactive materials governed by the AEA;

2. On its Second Claim for Relief, for a declaratory judgment that: (A) Defendant does not have the legal authority to regulate activities or substances subject to regulation under the FWPCA or material discharged from LANL point sources; (B) Defendant does not have the legal authority to regulate PCBs; (C) Defendant does not have the legal authority to regulate certain military explosives and munitions-related compounds that are not "solid waste" pursuant to RCRA and the MMR; (D) the Determination and the 2002 IWP Work Schedule are based, in whole or in part, on the alleged presence, releases and potential dangers of materials originating in LANL point sources discharges, of PCBs, of exempt military explosives and munitions-related compounds and of other materials beyond Defendant's regulatory authority; and (E) the

Determination and the 2002 IWP Work Schedule are invalid, in whole and in part, because they constitute prohibited regulation of such activities and materials.

3. On its Third Claim for Relief, for a declaratory judgment that the Determination and the 2002 IWP Work Schedule are invalid, in whole and in part, because they contravene the Federal government's sovereign immunity;

4. On its Fourth Claim for Relief, with regard to the Determination, for a declaratory judgment that: (A) Defendant has failed to properly base the Determination on the factual and legal findings required by the HWA, Section 74-4-10.1; (B) Defendant does not have the legal authority to release or issue the Determination separate and apart from the issuance of an order under Section 74-4-10.1 or any other section of the HWA; (C) the Determination does not constitute "final administrative action" under the HWA, Section 74-4-14(A); (D) the Determination is invalid because it is part of a disguised compliance and/or corrective action order under the HWA, Section 74-4-10, which has not been issued in conformance with the procedural requirements of that section; and (E) the Determination is invalid, in whole and in part, because it has been issued in violation of Plaintiff's procedural rights;

5. On its Fourth Claim for Relief, with regard to the 2002 IWP Work Schedule, for a declaratory judgment that: (A) Defendant failed to comply with the procedural protections guaranteed to Plaintiff for major permit modifications, including the right to a public hearing; (B) Defendant failed to follow the requirements of Section O of the LANL Permit; (C) Defendant failed to provide LANL any stated or rational basis for the unilateral changes to the scope and schedule of tasks imposed by the 2002 IWP Work Schedule; and (D) the 2002 IWP Work Schedule imposes new tasks that deprive LANL of fair notice in violation of Plaintiff's fundamental fairness rights.

6. On its Fifth Claim for Relief, for a declaratory judgment that the Determination is invalid, in whole and in part, because it is arbitrary, capricious and an abuse of discretion, it is

not supported by substantial evidence in the administrative record, and it is otherwise not in accordance with law;

7. On its Sixth Claim for Relief, for a declaratory judgment that the 2002 IWP Work Schedule is invalid, in whole and in part, because it is arbitrary, capricious and an abuse of discretion, it is not supported by substantial evidence in the administrative record, and it is otherwise not in accordance with law;

8. On its Seventh Claim for Relief, for a declaratory judgment that:

(A) Defendant lacks authority under the HWA to regulate: (1) source, special nuclear or byproduct materials; (2) the radioactive component of mixed wastes; (3) the hazardous waste component of mixed wastes in any manner that would conflict with AEA regulation of the radioactive component; (4) accelerator-produced radioactive materials that are regulated by DOE at LANL under the AEA; (5) materials discharged from LANL point sources at any time; (6) military explosives and munitions-related compounds; and (7) PCBs;

(B) Defendant lacks authority to regulate any materials identified in subparagraph (A) herein during the process of considering or issuing any permit to LANL under the HWA; and

(C) Defendant lacks authority to seek information regarding any materials identified in subparagraph (A) herein under Section 74-4-4.3(A) of the HWA or Section 3007 of RCRA.

9. On all Claims for Relief:

(A) For temporary, preliminary and permanent injunctive relief to enjoin Defendant from utilizing or taking action based upon the Determination and 2002 IWP Work Schedule until this Court has completed its judicial review;

(B) For temporary, preliminary and permanent injunctive relief against Defendant, and any person acting in concert with Defendant, to effectuate or enforce the Court's orders;

(C) For its costs in connection with this action;

(D) For its reasonable attorneys' fees, to the extent allowed by law; and

(E) For such other and further relief as may be just and proper.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

By _____

Sarah M. Singleton
Louis W. Rose
Post Office Box 2307
Santa Fe, New Mexico 87504-2307
(505) 982-3873

FARELLA, BRAUN & MARTEL, L.L.P.

Paul P. "Skip" Spaulding, III
Deborah J. Schmall
David J. Lazerwitz
Julie E. Grey
235 Montgomery Street
San Francisco, California 94104
(415) 954-4400

Attorneys for The Regents of the University of California

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

IN THE MATTER OF:	)
THE UNITED STATES DEPARTMENT OF	)
ENERGY AND THE UNIVERSITY OF	)
CALIFORNIA.	)
	)
LOS ALAMOS NATIONAL LABORATORY	)
LOS ALAMOS COUNTY, NEW MEXICO.	)

DETERMINATION OF AN IMMINENT AND SUBSTANTIAL ENDANGERMENT TO HEALTH AND THE ENVIRONMENT

Pursuant to the New Mexico Hazardous Waste Act ("HWA"), NMSA §§ 74-4-10.1, the Secretary of the New Mexico Environment Department (the "Department") is in receipt of evidence, and hereby determines, that the past or current handling, storage, treatment, or disposal of any solid waste or any hazardous waste may present an imminent and substantial endangerment to health or the environment. In support of this determination, the Secretary makes the following specific findings:

I. THE FACILITY

1. The Los Alamos National Laboratory (the "Facility") is a federal facility currently comprising approximately 43 square miles (27,500 acres) located on the Pajarito Plateau in Los Alamos County in north central New Mexico, approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. During its history, the Facility has comprised up to roughly 71 square miles (45,666 acres). The Facility is surrounded by the Pueblo of San Ildefonso, Los Alamos County, Bandelier National Monument, Santa Fe National Forest, and Bureau of Land Management lands. The Rio Grande and the tribal lands of the Pueblo of San Ildefonso border the Facility downgradient to the east. (LANL 1998e and 2001c).

2. Within the boundaries of the Facility, the Pajarito Plateau is dissected by eighteen major surface drainages, or canyons and their tributaries. The canyons run roughly east to west or southwest. From north to south, the most prominent canyons are Pueblo Canyon, Los Alamos Canyon, Sandia Canyon, Mortandad Canyon, Pajarito Canyon, Cañon de Valle and Water Canyon, Ancho Canyon, and Chaquehui Canyon. (LANL 1997a).

3. Hydrogeologic investigations have identified four discrete hydrogeologic zones beneath the Pajarito Plateau on which the Facility is located: (1) canyon alluvial systems; (2) intermediate perched water in the volcanic rocks (Tschicoma Formation and upper and lower members of the Tshirege Member of the Bandelier Tuff); (3) canyon-specific intermediate perched water within the Otowi Member of the Bandelier Tuff, Cerros del Rio basalt and sedimentary units of the Puye Formation; and (4) the regional aquifer. (LANL 1998e).

Exhibit A
to Amended Complaint
Civ. No. 02-637 MV/DJS

4. Habitat for several federally threatened and endangered species, including the bald eagle, the southwestern flycatcher, and the Mexican spotted owl have been identified on Facility property. Other species of concern, such as Jemez Mountains salamander, spotted bat, whooping crane and black-footed ferret, may occur on facility lands. The Mexican spotted owl, southwestern flycatcher, bald eagle and Jemez Mountains salamander have been recorded on Facility and Los Alamos County lands. (LANL 1998e).

II. FACILITY OPERATIONS

5. The Facility began operations in 1943 when the United States Army Manhattan Engineer District was established for the research and development of an atomic bomb. Current and historic operations have included nuclear weapons design and testing; high explosives research, development, fabrication, and testing; chemical and material science research; electrical research and development; laser design and development; and photographic processing. (LANL 1998e).

6. The Facility is currently owned and operated by the United Sates Department of Energy and operated by the University of California (the "Facility Operators").

7. The Facility has been divided into numerous Technical Areas, or "TA's." Currently, 49 TA's exist; however, many former TA's have ceased operations and have been abandoned, have been combined with other TA's, or were cancelled before becoming operational. (CDCP 2002).

8. *TA-2.* TA-2 is located in Los Alamos Canyon near the western boundary of the Facility. It currently houses the Omega West Reactor but has historically housed water boiler reactors and "Clementine," a mercury cooled plutonium fast reactor. The Omega West Reactor is scheduled for decontamination and decommissioning in 2006. Cooling tower outfalls discharged to Los Alamos Canyon. (DOE 1987; LANL 2001c; CDCP 2002).

9. *TA-3.* TA-3 is located at the western boundary of the Facility. It includes the Administration Complex and support facilities as well as chemical and materials science laboratories. The Chemical and Metallurgical Research building, a Van de Graaff Accelerator (Ion Beam Facility), technical shops, and cooling towers from a power plant are among the current and historic operations housed in this part of the Facility. (DOE 1987; LANL 2001c).

10. *TA-10.* Former TA-10 is located north of the Facility in Bayo Canyon, adjacent to TA-74. The Facility Operators conducted hydrodynamic tests using conventional explosives and radiochemical research at TA-10 from 1943 to 1961. In 1963, the TA structures were decontaminated and demolished. The land was then transferred to the County of Los Alamos, and is no longer part of the Facility. (LANL 1992a).

11. *TA-16.* TA-16 is located on the southwestern side of the Facility. TA-16 includes high explosive, plastic and adhesive research, development, testing, and production facilities. The operations include pressing, casting and milling of high explosives, plastic operations, photographic laboratories, cooling towers, surface disposal areas, and historic wastewater outfalls in addition to open burn and open detonation activities. (LANL 1993, 1998b, 1998c, and 2001c).

12. *TA-21.* TA-21 is located on DP Mesa on the northern side of the Facility. TA-21 was the plutonium processing area where the Facility Operators produced metal and alloys of plutonium and other transuranic elements from nitrate solution feedstock, processed polonium, and actinium, and produced initiators (a weapons component) from 1945 until 1978. TA-21 also housed treatment facilities for industrial wastewater from the plutonium processing facility. Chlorinated and non-chlorinated solvents, metals such as beryllium, cadmium, chromium, lead, mercury, and nickel, as well as other constituents were used at TA-21. (LANL 1991 and 2001c).

13. *TA-45.* Former TA-45 housed an industrial wastewater treatment plant located within the Los Alamos townsite that discharged to a small tributary of Acid Canyon. The industrial treatment plant operated from 1951 to 1964. The treatment plant served TA-3, TA-21, TA-43, and TA-48, as well as former TA-1. Prior to 1951, untreated industrial wastewater was discharged slightly upgradient from former TA-45. Discharge to the untreated industrial wastewater outfall originated from the former main technical area, TA-1. (LANL 1981).

14. *TA-49.* TA-49, the Frijoles Mesa Site, is approximately 1280 acres located on the southwestern boundary of the Facility. Since the mid-1940's, TA-49 has been used as a buffer zone for activities at adjacent firing sites. Between 1959 and 1961, underground hydronuclear and related experiments were conducted at TA-49. (LANL 1987 and 1998a).

15. *TA-50.* TA-50 is located in the center of the Facility, bounded by Mortandad Canyon to the north, Two Mile Canyon to the south, TA-55 to the west, and TA-63 to the east. TA-50 includes a waste reduction characterization facility, an industrial wastewater treatment plant, several container storage areas, and a 12-acre landfill comprised of pits and shafts. The industrial wastewater treatment plant has been in operation since 1963. The landfill was operated from 1948 until 1964. (LANL 1992b, 1997c, and 2001c).

16. *TA-54.* TA-54 is located at the eastern end of Mesita del Buey on the eastern side of the Facility. The Facility Operators have used TA-54 since the 1950's as the primary waste disposal area for the Facility. TA-54 includes a waste characterization area, container storage areas, a waste transfer facility, and numerous surface impoundments, pits, trenches, and shafts used for waste disposal. (LANL 1992d, 2000a, and 2001c).

17. Inventories of selected organic solvents indicate that during a 16 year period from the early 1970's to middle 1980's the Facility used the following quantities of solvents each year: 40,260 to 86,460 pounds of trichloroethane; 858 to 44,480 pounds of trichloroethylene; 14,817 to 41,360 pounds of acetone; 18,400 to 70,840 pounds of freons; 4.4 to 20,020 pounds of perchloroethylene; 1350 to 17,820 pounds of kerosene; 880 to 48,400 pounds of methyl ethyl ketone; 132 to 7260 pounds of toluene; 374 to 4840 pounds of methylene chloride; 352 to 1100 pounds of chloroform; 132 to 660 pounds of carbon tetrachloride; 26 to 398 pounds of benzene. Lesser amounts of hexane, xylene, tetrahydrofuran and dioxane were also utilized during this period although data is only available for a few years during this time frame. (CDCP 2002).

18. The Facility Operators have conducted dynamic testing at firing sites, which used a variety of high explosive compounds ("HE"), barium, beryllium, lead, mercury, and other metals. (DOE 1979).

III. WASTE MANAGEMENT

A. General

19. As a result of the Facility operations, from approximately 1943 to the present, the Facility Operators have generated, treated, stored, disposed of, and otherwise handled solid wastes, hazardous wastes, hazardous waste constituents, and hazardous wastes mixed with radioactive wastes at the Facility. (E.g., DOE 1987 and 2001; LANL 1998b, 1998c, 1998e, and 2000a).

20. The Facility Operators have disposed hazardous and solid wastes in septic systems, pits, surface impoundments, trenches, shafts, landfills, and waste piles throughout the Facility. The Facility Operators have also discharged industrial wastewater and other discharges from outfalls into many of the canyon systems at the Facility. (E.g., Rogers 1977; DOE 1987 and 2001; LANL 1991, 1992b, 1992c, 1993, 1994, 1995, and 1998e; CDCP 2002)

21. Hazardous wastes and hazardous constituents, other solid wastes, and radionuclides have been released into Los Alamos Canyon, Pueblo Canyon, Pajarito Canyon, Cañon de Valle, Water Canyon, and Sandia Canyon, as well as other canyons. (Purtymun 1975; DOE 1987; LANL 1981, 1997, 2000a, and 2001a; CDCP 2002).

22. As a result of the releases, the Facility has identified over 2100 solid waste management units ("SWMU's") and "areas of concern" ("AOC's") where hazardous and solid wastes have been disposed. (LANL 1998d).

23. The Facility Operators have disposed of hazardous wastes, hazardous constituents, and other solid wastes at the Facility. These wastes include chlorinated and nonchlorinated solvents such as carbon tetrachloride, methylene chloride, trichloroethane, trichloroethylene, tetrachlorethylene, benzene, toluene, acetone, chloroform, and methyl ethyl ketone ("MEK"); high explosive compounds ("HE") such as trinitrotoluene ("TNT"), dinitrotoluene compounds, octahydro-1357-tetranitro-1357-tetrazocine ("HMX"), and cyclonite ("RDX"); corrosive and toxic gases; metals such as arsenic, barium, beryllium, cadmium, chromium (including chromium VI), copper, lead, mercury, molybdenum, silver, and zinc; cyanide; polychlorinated biphenyls ("PCB's"); pesticides such as 2,4-D; perchlorate; other inorganic contaminants such as nitrates, ammonia, and fluoride; various radionuclides such as tritium; and other wastes. (E.g., DOE 1979, 1987 and 2001; LANL 1981, 1998c, 1998e, 2000a, and 2001a; CDCP 2002).

24. The Facility Operators have disposed of radioactive wastes, some of which are also solid wastes, at the Facility. In some cases, the radioactive wastes were mixed with hazardous wastes and in other cases they were disposed of separately. These radioactive wastes include isotopes of plutonium and uranium as well as a variety of activation and mixed fission products including tritium, actinium-227, cobalt-60, strontium-90, cesium-137, technetium-99, americium-241. (DOE 1979, 1987 and 2001; LANL 1998c, 1998e, and 2000a; CDCP 2002).

25. Throughout the Facility, large quantities of solvents have been released at accelerator operations. Operational accelerators currently exist at TA-15 (PHERMEX) and TA-53 (LAMPF). Historically, several accelerators were utilized by the LANL facility. TA-1 and TA-3 housed

Van de Graaff accelerators, a cylcotron, a betatron, the Cockroft-Walton and the Short Tank accelerators. (CDCP 2002).

26. Some of the various waste disposal units at the Facility have been categorized into "Material Disposal Areas" or "MDA's" within many of the Technical Areas. (CDCP 2002). In addition, TA-49 also includes several designated "Areas" at which contaminants have been disposed as a result of various tests and experiments.

B. TA-21 Material Disposal Areas

1) MDA A

27. The Facility Operators disposed of solid and radioactive wastes in MDA A from 1945 to 1949 and again from 1969 to 1977. Waste streams included laboratory equipment, building construction debris, chemicals, and other solid wastes. In addition, corroded and leaking 55-gallon drums of iodide waste were stored on the eastern portion of MDA A in the 1950's, resulting in releases of contaminants to the ground surface. (Rogers 1977; DOE 1987; LANL 1991).

28. On the western portion of MDA A, a liquid solution containing plutonium-239/240 was disposed in two subsurface 50,000-gallon steel tanks. Liquid was later removed from the tanks, but an unknown volume of radioactive sludge and liquid remain in the tank bottoms. (Rogers 1977; DOE 1987; LANL 1991).

29. In 1969 a large pit was constructed in the center of MDA A. Contaminants placed into this pit include plutonium-239/240, plutonium-238, uranium-235, depleted uranium, other unspecified radionuclides, and asphalt. (Rogers 1977; DOE 1987; LANL 1991).

2) MDA B

30. The Facility Operators disposed of solid wastes in MDA B from 1945 until 1948. MDA B covers six acres and is comprised of at least five disposal pits. Wastes disposed in MDA B include organic chemicals, perchlorate, ethers, solvents, corrosive gases, and radionuclides. In addition, at least one truck contaminated with fission products from the Trinity test and other large pieces of debris were disposed in MDA B. (Rogers 1977; DOE 1987 and 2001; LANL 1991 and 1998b).

31. Wastes were placed in four or five pits at MDA B, one of which has estimated dimensions of 15 feet wide, 300 feet long, and about 12 feet deep. (Rogers 1977; DOE 1987 and 2001; LANL 1991 and 1998b).

3) MDA T

32. The Facility Operators disposed of solid, hazardous, and radioactive wastes containing hazardous constituents in MDA T from 1945 to 1983. MDA T covers approximately 2.21 acres containing four absorption beds used to dispose of industrial wastewater, a retrievable waste storage area, a

series of disposal shafts, an acid holding tank and acid sump, a caisson built in 1959, and two surface spill areas of americium-241 paste. (Rogers 1977; DOE 1987; LANL 1991 and 1997b).

33. The four absorption beds at MDA T measure 120 feet long, 20 feet wide, and 4 feet deep. Over 18 million gallons of industrial wastewater was discharged to the four absorption beds between 1945 and 1983. (Rogers 1977; DOE 1987; LANL 1991 and 1997b).

34. A satellite container storage area for alcohol, acetone, and freon is located at MDA T. The storage area has been inactive since 1990. (Rogers 1977; DOE 1987; LANL 1991 and 1997b).

35. Roughly 60 disposal shafts were constructed between the four absorption beds at MDA T. The shafts measured 8 feet in diameter and ranged from 18 to 68 feet deep. Some of the shafts were sealed in asphalt. Between 1968 and 1983, the disposal shafts were used to dispose of "cement pastes" of neutralized americium, "strip" reportedly containing ammonia as well as hazardous constituents such as chromium and nickel, and treatment sludge from processes throughout TA-21. Other wastes disposed in MDA T shafts include mixed wastes, treatment sludge, industrial wastewater, and bathyspheres filled with plutonium-239/240. The liquid effluent was mixed with cement prior to disposal, resulting in an estimated volume of 902,265 gallons, or 3418 cubic meters, of waste disposed in the shafts. (Rogers 1977; DOE 1987; LANL 1991 and 1997b).

4) MDA U

36. The Facility Operators disposed of wastewater and cooling tower effluent in MDA U from 1948 until sometime after 1976. MDA U is approximately 0.2 acres and consists of two absorption beds used for subsurface disposal of industrial wastewater and an associated sump located between the two beds. The primary contaminants disposed of at MDA U include polonium-210, actinium-227, tritium, uranium, and plutonium. (DOE 1987; LANL 1991).

5) MDA V

37. The Facility Operators discharged at least 40 million gallons of effluent into MDA V between 1945 and 1961. MDA V is approximately 0.88 acres and consists of three absorption beds and associated sumps used for the subsurface disposal of wastewater generated by a Facility laundry operation. Wastewater discharged to the pits contained barium and various radionuclides. In addition, soil samples collected in 1982 contained elevated levels of tritium. (DOE 1987; LANL 1991).

C. TA-49 Material Disposal Areas

1) MDA AB

38. The Facility Operators detonated HE and conducted 44 nuclear device safety and related tests in underground shafts at MDA AB, also known as Areas 2, 2A and 2B of TA-49. These operations used conventional explosives and small amounts of fissile material. The tests resulted in releases of HE, barium, uranium, plutonium-239, americium-241, tritium, lead, and beryllium in addition to other radioactive tracers used in the tests. The majority of the releases are in shafts at depths ranging from 50 to 120 feet below the ground surface. Estimates of some of the contaminants in

the subsurface include 90,000 kg of lead, 11 to 13 kg of beryllium, 93 kg of enriched uranium, 82 to 169 kg of depleted uranium, and 40 kg of plutonium. (LANL 1987, 1992c, and 1998a).

2) Areas 1, 3, and 4

39. The Facility Operators conducted various containment studies and downhole studies, and developed confinement and sample recovery techniques in underground shafts at Areas 1, 3, and 4 of TA-49. Chemicals used in these studies include uranium tracers, uranium-235 and 238, plutonium-239, and neptunium-239 tracers. (LANL 1987 and 1992c).

3) Area 11

40. The Facility Operators conducted radiochemical research and small-scale shot experiments using HE from 1959 to 1961 at Area 11 of TA-49. Area 11 consists of the former radiochemistry laboratory, associated leach field, and a small-scale shot area. The radiochemistry laboratory was demolished in 1971. (LANL 1992c).

4) Area 12

41. The Facility Operators used Area 12 of TA-49 for confinement experiments in 1960 and 1961, and later to support operations at the Cable Test Pull Facility. The confinement experiments consisted of HE detonations in sealed metal "bottles" that were placed in a 30-foot shaft located within the Bottle House structure. (LANL 1992c).

D. TA-50 Material Disposal Area

42. Only one Material Disposal Area, MDA C, is located within TA-50. The Facility Operators disposed of a large volume of hazardous, radioactive, and mixed waste in MDA C from 1948 until 1974. MDA C encompasses 11.8 acres and consists of seven disposal pits, a chemical disposal pit, and 108 shafts. High activities of radionuclides, including tritium, and high concentrations of volatile organic compounds have been released from MDA C to the vadose zone. (Rogers 1977; LANL 1992b; DOE 2001).

E. TA-54 Material Disposal Areas

1) MDA G

43. The Facility Operators have used MDA G for the disposal of a variety of Facility wastes from 1957 to the present, and continue to use it for waste storage and disposal. Since 1957, MDA G has been the Facility's primary radioactive and mixed waste disposal site. From 1957 until at least 1990, the Facility Operators disposed of solid, hazardous, mixed, and radioactive wastes at MDA G. Since 1990, the Facility Operators have reported to use MDA G only for the disposal of radioactive wastes. Some of the radioactive wastes disposed at MDA G since 1990 are also solid wastes. MDA G consists of hazardous and radioactive waste container storage areas, 47 disposal pits, four disposal trenches, and 218 disposal shafts. (Rogers 1977; DOE 1987; LANL 1992d and 2000a).

44. MDA G encompasses 100 acres. Hazardous, solid, mixed and radioactive wastes have been placed in unlined pits, trenches and shafts since 1957. Classified mixed waste was reportedly disposed at MDA G until 1985. There are more than 34 pits, 4 rectangular trenches, and 218 vertical shafts at MDA G. (Rogers 1977; DOE 1987; LANL 1992d and 2000a).

45. The pits at MDA G vary in size, but are typically 200 to 600 feet long, 60 to 100 feet wide, and 65 feet deep. When filled, roughly 4 feet of crushed volcanic tuff and 4 inches of topsoil are used to cover each pit. On average, 35% of each pit is estimated to be waste material and the rest is crushed volcanic tuff. (Rogers 1977; LANL 1992d and 2000a).

46. The four trenches at MDA G are 200 to 300 feet long, 13 feet wide, and 8 feet deep. Waste disposed of in these trenches is retrievable transuranic (TRU) waste and was reportedly packaged in 30-gallon drums inside concrete casks. (Rogers 1977; LANL 1992d and 2000a).

47. The shafts or "disposal wells" are typically 3 to 6 feet in diameter and 65 feet deep. Wastes disposed in the shafts required special packaging, special handling or segregation. Tritium, highly activated metals, PCB-contaminated waste, and hydrocarbon oil are among the wastes disposed in the shafts. (Rogers, 1977; LANL 1992d and 2000a).

2) MDA H

48. The Facility Operators disposed of hazardous and radioactive wastes, including HE, in nine shafts at MDA H from 1960 to 1989. (LANL 1992d and 2000a).

3) MDA L

49. The Facility Operators disposed of liquid hazardous and radioactive wastes at MDA L from 1959 to 1986. MDA L covers roughly 2.6 acres and consists of hazardous and radioactive waste container storage areas, one inactive subsurface disposal pit, three inactive surface impoundments, and 34 inactive disposal shafts. The area is covered by an asphalt pad and is presently used for permitted waste storage and treatment. (LANL 1992d and 2000a).

50. The dimensions of the surface impoundments at MDA L vary but range from 35 to 75 feet long, 12 to 18 feet wide, and 10 feet deep. The impoundments were used at various times from 1972 to 1986. The primary function of two of the impoundments was to evaporate treated salt solutions and liquid electroplating wastes. One of these impoundments was filled to 25% of its 2000 cubic foot capacity. The third impoundment was used to neutralize lithium hydride, a reactive waste. This impoundment was also used as secondary containment for oil storage for an unknown duration. (LANL 1992d and 2000a).

51. The dimensions of the 34 shafts or "disposal wells" at MDA L range from 3 to 8 feet in diameter and 15 to 65 feet deep. Most of the shafts are 60 feet in depth. Disposal in the shafts began in 1975 and lasted until 1985. (LANL 1992d and 2000a).

52. The disposal pit operated from 1964 to 1978. It is approximately 200 feet long, 15 feet wide, and 12 feet deep. The pit was used for the disposal and treatment of uncontained liquid waste and drums and is filled to an estimated 10% of its 28,800-cubic foot capacity. Ammonium

bifluoride, acid and caustic solutions, cyanide solutions, and chromium wastes were treated and disposed of at the pit. In 1992, the Facility acknowledged that the batch treatment of liquid waste "may have facilitated the downward migration of liquid contaminants along fractures within the tuff." (LANL 1992d).

III. RELEASES OF CONTAMINANTS

A. General

53. These waste disposal and other waste management activities at the Facility have resulted in the release of solid and hazardous wastes, hazardous waste constituents, mixed wastes, and radioactive wastes to the environment. (E.g., Purtymun 1975; DOE 1987 and 2001; LANL 1981, 2001a, and 2001c; CDCP 2002).

54. Contaminants that have been released into, and detected in, soils and sediments at the Facility include HE compounds; metals such as arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, molybdenum, silver, and zinc; PCB's; various radionuclides such as tritium; and other contaminants. (E.g., DOE 2001; LANL 1998b, 1998c, 2000a, 2001a, and 2001c; CDCP 2002).

55. Contaminants that have been released into, and detected in, groundwater beneath the Facility include HE compounds; volatile organic compounds such as trichloroethylene, dichloroethylene, and dichloroethane; metals such as molybdenum, manganese, beryllium, lead, cadmium, and mercury; perchlorate; other inorganic contaminants such as ammonia, nitrate, and fluoride; radionuclides such as tritium; and other contaminants. Contaminants have been detected beneath the Facility in all four groundwater zones. (E.g., Purtymun 1975; LANL 1981, 2001a, 2001c, and 2002; CDCP 2002).

56. HE compounds and metals have been detected in groundwater beneath the Facility at levels in excess of maximum contaminant levels ("MCLs") set by the EPA under the federal Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26. (EPA 2000; LANL 1981, 1998b, 1998c, and 2002; NMED 1996).

57. Nitrate and molybdenum have been detected in groundwater beneath the Facility at levels in excess of numerical standards set by the New Mexico Water Quality Control Commission ("WQCC"), at 20.6.2.3103 NMAC. (LANL 1981 and 2001c; NMED 1996).

58. Perchlorate has been detected in groundwater beneath the Facility at levels in excess of EPA's proposed drinking water equivalent level of 1 µ/L. (LANL 2001c and 2002).

59. Perchlorate, which is a byproduct of the processing of plutonium and is also used in high explosives (LANL 1999) and rocket fuel, is very soluble, mobile, and persistent in the environment. Therefore, perchlorate often precedes other less mobile contaminants.

B. Releases of Contaminants from TA-2

60. At various times, the Facility Operators operated nuclear reactors in TA-2. Various contaminants were released from reactor cooling towers at TA-2, including chromium (including chromium VI), mercury, solvents, and radionuclides. Chromium, other metals, and perchlorate have been detected in the alluvial groundwater system downgradient of the TA-2 reactor complex. (DOE 1987; CDCP 2002).

61. Loss of chromium VI from the TA-2 Omega West Reactor cooling tower was reportedly 0.05 pounds per hour in the form of potassium dichromate. (DOE 1987; CDCP 2002).

62. The chromium VI concentration in the discharge was reportedly 25 mg/L from the TA-2 Omega West Reactor. (CDCP 2002).

63. The cooling tower at the Water Boiler Reactor at TA-2 reportedly "rained" chromium from the sky. (CDCP 2002).

64. Mercury coolant was spilled from the Clementine Reactor at TA-2 in December 1948. (CDCP 2002).

C. Releases of Contaminants from TA-3

65. From the 1950's to the 1970's, the Facility Operators operated a power plant at TA-3. The TA-3 power plant discharged between 128,000 and 288,000 gallons per day of wastewater into Upper Sandia Canyon. The power plant used roughly 36 pounds per day of chromate phosphate-zinc corrosion inhibitors. Chromium levels in the discharged wastewater averaged up to 34 ppm, and chromium VI was estimated to be half that average. Chromate in discharged wastewater collected four miles down stream averaged 10 to 15 ppm. Chromium VI has been detected in surface water two miles down stream of the outfall. (DOE 1987).

66. Cadmium, beryllium, lead, and mercury were detected in surface water samples taken at two locations up to two miles downgradient of the sewage treatment plant and power plant outfalls.

D. Releases of Contaminants from TA-16

67. Since operations began in 1951, the Facility Operators have used Building 16-260 in TA-16 to machine high explosives. Contaminants released from Building 16-340 include high explosive compounds (e.g., HMX, RDX, and TNT), solvents, and natural uranium. (LASL 1971 and 1976; LANL 1993, 1998b and 1998c).

68. During the six month period from November 1970 to April 1971, the chemical inventory for Building 16-340 included 11 pounds of toluene; 750 pounds of methyl ethyl ketone; 72 pounds of methylene chloride; 110 pounds of methanol; 11 pounds of ethyl acetate; 55 pounds of 1,2-dichloroethane; 3 pounds of chloroform; 330 pounds of n-butyl acetate; 500 pounds of ammonium sulfate; and 700 pounds of acetone. (LANL 1993).

69. From 1951 until 1988, machine turnings and high explosive wastewater from Building 16-340 was discharged untreated to the 16-260 outfall, a small tributary to Cañon de Valle. In the early 1980's, a 250 foot weir-type green plastic air-stripper (the Fish Ladder) was fitted to the outfall to allow some aeration of solvents before final discharge to the drainage. In 1989, a distiller was installed in Building 16-340 to help trap solvents before discharge to the Fish Ladder. In November 1996, the wastewater was routed to 13 sumps located outside the building. (LANL 1993, 1998b, and 1998c).

70. Data from 1994 indicate that 2.5 million gallons of wastewater was discharged from the 16-260 outfall that year. (LANL 1993).

71. Investigations conducted during the 1990's detected RDX, TNT, HMX, dinitrotoluene (DNT), amino-DNT compounds, trinitrobenzene (TNB), dinitrobenzene, pentaerythritol tetranitrate (PETN), barium nitrate, tetryl, nitroguadine, triaminotrinitrobenzene (TATB), ammonium nitrate, various plastic binders, acetone, acetonitrile, chloromethane, dichloroethane, dichlorobenzene, isopropyltoluene, tetrachloroethene, trichloroethene, anthracene, bis(2-ethylhexyl)phthalate, diethylphthalate, butylbenzylphthalate, barium, beryllium, copper, cadmium, chromium, cobalt, lead, nickel, silver, vanadium, uranium, and zinc in addition to other constituents. (LASL 1971 and 1976; DOE 1987; LANL 1993, 1998b, and 1998c).

72. The TA-16 Building 16-260 outfall, pond and drainage channel was excavated in 2000, and the contaminated material was removed and disposed of. Prior to the excavation, soil in the area was contaminated with HE compounds at levels up to 20% by weight, and barium at up to 33,000 ppm. Today, RDX levels in surface water below the outfall are greater than 800 ppb and barium levels in sediments are approximately 40,000 ppm. During the drilling of R-25, HE compounds, such as RDX, were detected in the intermediate zone at levels above EPA health advisories. (LANL 1998b and 1998c; NMED 2000; EPA 2000 and 2002).

73. The EPA drinking water health advisory for RDX is 2 ppb, the NMED residential soil screening level for RDX is 44 ppm and the EPA residential screening level for barium is 5400 ppm in soil.

74. The Building 16-260 outfall is a primary source of water contamination observed in SWSC Spring, Burning Ground Spring, Martin Spring, surface and alluvial waters of Cañon de Valle, and in perched groundwater (approximately 740 feet below ground surface) observed during drilling of regional aquifer well R-25. (LANL 1998a and 1998d).

E. Releases of Contaminants from TA-21

75. From 1945 until 1978, the Facility Operators produced metal and alloys of plutonium and other transuranic elements at TA-21. TA-21 also housed treatment facilities for industrial wastewater from the plutonium processing facility. Chlorinated and non-chlorinated solvents and metals such as beryllium, cadmium, chromium, lead, mercury, and nickel were used at TA-21. (LANL 1991 and 2001c).

76. From 1945 to 1952, industrial wastewater effluents from TA-21 were disposed into the absorption beds at MDA T. In 1952, a wastewater treatment facility at Building 21-35 began

operation and discharged to the SWMU 21-011(k) outfall. Sludge and remaining wastes from the treatment process were reportedly disposed of in shafts at MDA T and other MDA's, presumably MDA's C and G. Treated wastewater from the plant was discharged to DP Canyon. The treatment facility at building 21-35 was replaced in 1967 by a larger capacity treatment facility, Building 21-257. (LANL 1981 and 1991).

77. From 1945 through 1952 an estimated 12.6 to 14 million gallons of untreated wastewater from Building TA-21-35 was discharged to the absorption beds. (DOE 1987; LANL 1991).

78. After the Building 21-35 industrial treatment facility became operational in 1952, an additional estimated 4.3 to 5.7 million gallons of wastewater was discharged to the absorption beds at MDA T. (Rogers 1977; LANL 1991).

79. From 1952 to 1975, an estimated 65 million gallons of treated industrial wastewater was discharged to outfall 21-011(k). In addition, an unknown volume of untreated industrial wastewater was discharged directly to the 21-011(k) outfall. (LANL 1981 and 1991).

80. In 1973, flow rates from the 21-011(k) Outfall were 143,000 gallons per month. (DOE 1987).

81. In 1973, the treated wastewater from the Building TA-21-257 treatment facility contained cadmium at levels from 1 to 500 μg/L; chromium VI at levels from <4 to 7 μg/L; total chromium at levels from <4 to 380 μg/L; copper at levels from <2 to 1500 μg/L; mercury at levels from <0.02 to 25 μg/L; lead at levels from <0.1 to 1300 μg/L; zinc at levels from <2 to 1120 μg/L; nitrate at levels from 31 to 1087 mg/L; and fluoride at levels from 3 to 149 mg/L. (LASL 1973).

82. In 1976, the treated wastewater from the Building 21-257 treatment facility contained cadmium, chromium (including chromium VI), copper, lead, mercury, zinc, nitrates, fluoride, and ammonia. (DOE 1979).

83. In 1971 and 1972, surface water in DP Canyon contained average cadmium at concentrations of 6.9 μ/L in solution and 0.43 μ/L in particulates; beryllium concentrations of 0.3 μ/L in solution and <0.25 μ/L in particulates; lead concentrations of 1.8 μ/L in solution and 2.8 μ/L in particulates; and mercury concentrations of 0.09 μ/L in solution and <0.02 μ/L in particulates. (DOE 1987; LANL 1981).

84. Cadmium, copper, lead, nickel, silver, and zinc exceed background concentrations in shallow (<18 inches) samples while TCE, silver, chromium, cyanide and some radionuclides have been detected to depths of 100 feet, the furthest extent of investigation thus far. (LANL 1991 and 1995).

F. Releases of Contaminants from Former TA-45

85. Industrial wastewater generated as a result of nuclear materials research at the original main Technical Area (TA-1) during the early years of the Facility was discharged to a small tributary of Acid Canyon, untreated, between 1943 and 1951. Roughly 30 million gallons of untreated industrial waste was discharged between 1943 and 1951. (LANL 1981).

86. The Facility Operators built an industrial wastewater treatment plant located at former TA-45, which went into operation in 1951. The plant operated until 1964, shortly after a new facility at TA-50 was built. (LANL 1981 and 1995).

87. The volume of treated wastewater effluent from the treatment plant at former TA–45 was 5.8 million gallons in 1951, and increased to 17 million gallons in 1962. (LANL 1981).

88. In 1964, the volume of treated effluent from the wastewater treatment plant at TA-50 was 235,000 gallons. (LANL 1981).

89. The estimated total volume of wastewater discharged from former TA-45 and the outfall is approximately 166 million gallons, 30 million of which was not treated. (LANL 1981).

90. During a recent investigation of the sediments found in the South Fork of Acid Canyon, the hazardous constituents detected included mercury, lead, silver, cadmium, chromium, as well as polychlorinated biphenyls (PCB's). Additionally, isotopic plutonium, strontium-90, cesium-137, and americium-241 were detected, indicating that hazardous constituents were discharged concurrently with radionuclides. (LANL 1981, 2000b and 2001a).

G. Releases of Contaminants from TA-50

91. In 1963, the Facility Operators moved the wastewater treatment operation from former TA-45 to TA-50, although discharges continued at TA-45 for one additional year. TA-50 houses the Radioactive Wastewater Treatment Facility that collects and treats wastewater effluent from throughout the Facility. (DOE 1987; LANL 1981).

92. Facility operations that generated wastewater sent to TA-50 included handling of heavy metals and beryllium, analytical chemistry laboratories, target preparation facilities, research facilities. Solvents and other organics (e.g., scintillation cocktails that contain benzene, toluene, and xylene) as well as heavy metals enter the treatment plant and remain in residual treatment sludge and effluent. (DOE 1987).

93. From 1963 to 1995, the volume of treated effluent from the wastewater treatment plant at TA-50 was roughly 341 million gallons. (DOE 1979 and 1987; LANL 1992b and 1997).

94. Sampling data collected over the past ten years at and downstream of the outfall show elevated levels of trace metals and organic compounds. Historic data from treated liquid effluent released to Mortandad Canyon, provided by the LANL facility, indicate that beginning in 1973 with no reporting in 1974 through 1977, the inorganic constituents cadmium, chromium (including chromium VI), copper, mercury, lead, zinc, cyanide, nitrate, ammonia, and fluoride were detected in the treated effluent. Annual average concentrations were often above current drinking water standards for individual contaminants. (DOE 1979 and 1987; LANL 1992b and 1997).

95. From 1963 to 1989, cadmium, chromium, cyanide, mercury, lead, and zinc were monitored in the effluent from the wastewater treatment plant at TA-50. Reported average concentrations of

these contaminants indicate that the concentrations were often above drinking water standards. (Purtymun 1975; LANL 1992b and 1997c).

96. In 1973, the treated wastewater from the wastewater treatment plant at TA-50 contained cadmium at levels from <1 to 560 µg/L; chromium VI at levels from <4 to 65 µg/L; total chromium at levels from <4 to 220 µg/L; copper at levels from <2 to 5280 µg/L; mercury at levels from 1 to 149 µg/L; lead at levels from <0.1 to 2600 µg/L; zinc at levels from <2 to 260 µg/L; and nitrate at levels from 27 to 2093 mg/L. (LASL 1973).

97. Between 1963 and 1972, the annual average concentration of nitrate as nitrate in treated wastewater from the wastewater treatment plant at TA-50 was 217 mg/L, with a maximum of 766 mg/L in 1972. (Purtymun 1975).

98. In 2001, monthly composite samples from the wastewater treatment plant atTA-50 contained perchlorate at levels from 3 to 950 µg/L. (LANL 2002).

99. Analytical results from 1971, 1972, and 1997 indicate cadmium, beryllium, lead, and mercury were detected in alluvial wells down gradient (2844 m) of the TA-50 outfall. (Purtymun 1975, LANL 1997c and 2001c).

100. Plutonium, a strongly sorbing element, was detected in shallow alluvial aquifer well MCO-7.5 (2844 m down gradient of the outfall) within a couple of years after operations at TA-50 began, and plutonium continues to be detected. (Purtymun 1975; LANL 1997c and 2001c).

101. Available documentation indicates that perchlorate analyses were first performed on alluvial ground water in 1999 and, since then, levels have been detected as high as 440 µg/L. (LANL 2002). Perchlorate has also been detected at 4.19 µg/L, above the Environmental Protection Agency provisional drinking water equivalent level of 1 µg/L, in regional aquifer well R-15 downgradient of the outfall. (LANL, 2002). Perchlorate, nitrate, and tritium have been detected at levels from 12 to 145 µg/L in intermediate groundwater zones beneath Mortandad Canyon at MCOBT-4.4 and R-15. (LANL 2002).

102. Cadmium, lead, mercury, nitrates, fluoride, tritium, strontium-90, and plutonium (a strongly sorbing constituent), among others contaminants, were detected in surface water, alluvial groundwater, perched groundwater and springs in Pueblo and lower Los Alamos Canyons between 1946 and 2000. (Purtymun 1975; LANL 1981 and 2001a).

103. The waste disposed at MDA C at TA-50 includes arsenic, antimony, barium, beryllium, cerium, cesium, copper, cyanides, lead, mercury, silver, thallium, tantalum, zinc, pyrophoric metals, compressed gas cylinders, and acid solutions. In addition, acetone, benzene, high explosives (e.g., TNT), trichloroethylene and other solvents, waste oil, and radioactive organic solutions have been disposed of at this site. Plutonium contaminated sodium loops from a reactor were also disposed at MDA C. Mercury coolant from the TA-2 Clementine reactor was disposed at MDA C. Sludge, which was contaminated with hazardous constituents and radionuclides, from various treatment plants located at the Facility were also disposed at MDA C during its operation. (Rogers 1977; DOE 1987; LANL 1992b).

104. A variety of chemicals such as pyrophoric metals, hydrides, compressed gases, nickel carbonyl cylinders (lecture bottles about 1 pound), and carboys of di- or triethylbenzene were disposed of at Pit 6, the chemical disposal pit at MDA C. (DOE 1987).

G. Releases of Contaminants from TA-54

105. The Facility Operators have used TA-54 since the 1950's as the primary waste disposal area for the Facility. TA-54 includes a waste characterization area, container storage areas, a waste transfer facility, and numerous surface impoundments, pits, trenches, and shafts used for waste disposal. (LANL 1992d, 2000a, and 2001c).

106. More than 6500 cubic feet (approximately 48,000 gallons) of organic liquid waste, 1680 cubic feet (approximately 12,500 gallons) of inorganic liquid waste, and at least 53 cubic feet (approximately 396 gallons) of 1,1,1 trichloroethane were disposed of at MDA L in TA-54. In addition, at least another 9500 cubic feet (approximately 71,000 gallons) of unspecified waste was disposed of at MDA L, but not classifiable due to incomplete description in logbook entries. (LANL 1992d).

107. At least 114.68 cubic feet (approximately 858 gallons) of 1,1,1-trichloroethane, in addition to other wastes, was disposed of in three of the shafts at MDA L, Shafts 17, 24, and 33. (LANL 1992d).

108. A plume of organic contaminant vapor has been identified from MDA L, although not fully characterized. Monitoring of subsurface pore gas concentrations in 1999 detected trichloroethane, trichloroethylene, trichlorotrifluoroethane, methylene chloride, chloroform, toluene, 1,1-dichloroethane, and 1,1-dichloroethene, among other solvents. (LANL 2000a).

109. A plume of organic vapor and a plume of tritium vapor plume have been identified beneath MDA G at TA-54 (LANL 2000a).

H. Other Releases of Contaminants

110. Dynamic testing at firing sites in 1976 released an estimated 26 kg of beryllium, 19 kg of lead, 36 kg of mercury, and 1020 kg of depleted uranium. As reported in 1979, an estimate of the total amount of depleted and natural uranium used in dynamic testing was 100,000 kg. (DOE 1979).

111. Fractures and higher permeability units (e.g., surge beds and the "Cerro Toledo interval") facilitate contaminant migration in the subsurface at the Facility. (Rogers 1977; LANL 1991, 1998a, 1998d and 2001b).

IV. POTENTIAL FOR EXPOSURE TO CONTAMINANTS

112. Los Alamos County operates seven public water supply wells within the Facility boundary and an additional five public water supply wells within three miles to the north of the Facility. The wells draw water from the regional aquifer. Contamination has been detected in two of the County wells north of the Facility, wells G-1 and G-1A. The contaminant detected is strontium-90. (LANL 2001c).

113. The public water supply well for the City of White Rock, PM-1, is located on the east side of the Facility in Sandia Canyon. The well draws water from the regional aquifer. (LANL 2001c)

114. Tritium, nitrate, and perchlorate have been detected in Los Alamos County water supply wells. (LANL 2001c).

115. The Pueblo of San Ildefonso operates water supply wells to the east and downgradient of the Facility. The wells draw water from the regional and alluvial aquifers. (LANL 2001c).

116. Wildlife and livestock access habitat on and downgradient from the Facility. Wildlife and livestock also make use of surface water flowing in the canyons, seeps, and springs that discharge to the surface. (LANL 1998e).

117. Concurrent with TA-21 industrial wastewater treatment plant releases, the Facility reports that in 1971, kidneys from rodents living in DP Canyon were analyzed for mercury and concentrations ranged from 0.1 to 0.7 micrograms per gram for wet tissue, compared to 0.02 to 0.1 micrograms per gram for wet tissue at a control site. Activities for plutonium and tritium in rodents were reported to have had a similar correlation. (DOE 1987).

118. Perchlorate has been detected in a municipal water supply well (Otowi-1) for Los Alamos County and located in Pueblo Canyon, approximately 5 miles downgradient of the South Fork of Acid Canyon. Detected concentrations of less than 6 µg/L are near the Environmental Protection Agency proposed drinking water equivalent of 1 µg/L. (LANL 2001c and 2002).

119. Tritium has been detected in the Otowi-1 municipal water supply well at 38 picocuries/liter. This data indicates that communication between effluent discharges and the deep regional aquifer has occurred during the last 59 years. (LANL 2001c)

V. TOXICITY OF CONTAMINANTS

120. *Barium*. Subchronic and chronic studies on rats and mice have shown kidney damage in response to oral doses of barium. Hypertension has been observed in humans who ingested high doses of barium under occupational exposure conditions. Ingestion of high levels of barium compounds over the short term has resulted in difficulties in breathing, increased blood pressure, changes in heart rhythm, stomach irritation, brain swelling, muscle weakness, damage to the liver, kidney, heart, and spleen. (EPA 2002a, ATSDR 2002).

121. *Beryllium*. Inhalation of beryllium can cause chronic beryllium disease, an inflammatory reaction to low levels of beryllium, and it may cause lung cancer. Ingestion of beryllium has not been reported to cause effects in humans because very little beryllium can move from the stomach and intestines into the bloodstream. Beryllium contact with scraped or cut skin can cause rashes or ulcers. (EPA 1998a; ATSDR 2002).

122. *Cadmium*. Cadmium can cause kidney damage through both ingestion and inhalation exposures. Cadmium has been linked with damage to the intestinal tract through ingestion and with damage to the lungs through inhalation. Cadmium is also considered to be a probable (class B) human carcinogen. Long-term exposure to lower levels of cadmium in air,

food, or water leads to a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones. (EPA 2002a; ATSDR 2002).

123. *Chromium (III)*. Chromium III has a much lower bioavailability than chromium (VI) and is therefore much less toxic than Chromium (VI). Chromium (III) caused reduced liver and spleen weights in animals and allergic contact dermatitis in exposed workers. (EPA 1998b).

124. *Chromium (IV)*. Inhaled chromium (VI) is a carcinogen that acts as a mutagen on DNA. Breathing high levels of chromium (VI) can cause irritation to the nose, such as nosebleeds, and ulcers and holes in the nasal septum. Ingesting large amounts of chromium (VI) can cause stomach upsets and ulcers, convulsions, kidney and liver damage, and even death. Skin contact with certain chromium (VI) compounds can cause skin ulcers. (EPA 1998c; ATSDR 2002).

125. *Cyanide*. Oral ingestion of cyanide salts (sodium cyanide and potassium cyanide) is linked in animal studies with weight loss, thyroid effects, and myelin degeneration. Exposure to lower levels of cyanide for a long time may result in breathing difficulties, heart pains, vomiting, blood changes, headaches, and enlargement of the thyroid gland. People with high blood cyanide levels have also shown harmful effects such as weakness of the fingers and toes, difficulty walking, dimness of vision, deafness, and decreased thyroid gland function. Skin contact with cyanide can produce irritation and sores. (EPA 2002a; ATSDR 2002).

126. *High Melting Explosive (HMX)*. HMX, or Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine, causes lesions in the liver, primarily in males. (EPA 2002a).

127. *Lead*. Lead has been shown to adversely affect children's neurobehavioral development by affecting the central nervous system. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed. At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can also damage the male reproductive system. (EPA 2002a; ATSDR 2002).

128. *Mercury*. Inorganic and methylated mercury adversely affects primarily the nervous system. Methylmercury and metallic mercury vapors are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. (EPA 2002a; ATSDR 2002).

129. *Methyl Ethyl Ketone (MEK)*. MEK, or 2-butanone, caused decreased fetal birth weight in animals through both the ingestion and inhalation pathways. Inhalation of MEK can cause irritation of the nose, throat, skin, and eyes. If MEK is inhaled along with other chemicals that damage health, it can increase the amount of damage that occurs. Exposure of animals to high levels of MEK resulted in birth defects, loss of consciousness, and death. (EPA 2002a; ATSDR 2002).

130. *Nickel*. Exposure of animals to soluble nickel salts results in decreased body weight gain, increased heart-to-body weight ratios and decreased liver-to-body weight ratios. Once a person is sensitized to nickel, further contact with it will produce a reaction. The most common reaction is a skin rash at the site of contact. Ingestion and inhalation of nickel has been reported to cause lung disease in dogs and rats and to affect the stomach, blood, liver, kidneys, immune system, and reproduction and development in rats and mice. (EPA 2002a; ATSDR 2002).

131. *Nitrate*. Exposure to nitrate has been shown to cause methemoglobinemia resulting in cyanosis ("blue baby syndrome") in infants under 3 months of age. (EPA 2002a; ATSDR 2002).

132. *Perchlorate*. Perchlorate interferes with iodide uptake into the thyroid gland. Because iodide is an essential component of thyroid hormones, perchlorate disrupts the function of the thyroid. Changes in thyroid hormone levels may also result in thyroid gland tumors. Impairment of thyroid function in expectant mothers may impact the fetus and newborn and result in effects including changes in behavior, delayed development and decreased learning capability. (EPA 2002b).

133. *Polychlorinated Biphenyls (PCB's)*. PCB mixtures consist of a number of different Aroclor compounds. These aroclors can cause liver cancer. Aroclor 154 affects eye and immune system function. Aroclor 1216 reduces birth weights and affects reproduction in primates. Animals that ingested PCB's over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects of PCB's in animals include changes in the immune system, behavioral alterations, and impaired reproduction. (EPA 2002a; ATSDR 2002).

134. *Radionuclides*. Radionuclides are considered carcinogens based on their property of emitting ionizing radiation and on the extensive weight of evidence provided by epidemiological studies of radiogenic cancers in humans. All radionuclides are classified as known (Class A) human carcinogens by the EPA. (EPA 2001).

135. *Royal Detonating Explosive (RDX)*. RDX, also known as Cyclonite or Hexahydro-1,3,5-trinitro-1,3,5-triazine, causes inflammation of the prostate. Dosing with RDX also resulted in toxicity to and increased organ weight in kidneys. Exposure to large amounts of RDX can cause seizures. (EPA 2002a; ATSDR 2002).

136. *Tetrachloroethylene (perchloroethylene or PCE)*. Tetrachloroethylene is toxic to the liver and kidney by both oral and inhalation exposure, and the central nervous system by inhalation exposure. Chronic exposure causes respiratory tract irritation, headache, nausea, sleeplessness, abdominal pains, constipation, cirrhosis of the liver, hepatitis, and nephritis in humans; and microscopic changes in renal tubular cells, squamous metaplasia of the nasal epithelium, necrosis of the liver, and congestion of the lungs in animals. The oral reference dose level set by EPA is based on toxic effects on the liver. (EPA 2002a; ATSDR 2002).

137. *Trichloroethylene (TCE).* Human and animal data indicate that exposure to TCE can result in toxic effects on a number of organs and systems, including the liver, kidney, blood, skin, immune system, reproductive system, nervous system, and cardiovascular system. Inhalation may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Inhalation for long periods may cause nerve, kidney, and liver damage. (EPA 2002a; ATSDR 2002).

138. *2,4,6-trinitrotoluene (TNT).* TNT has been shown to cause liver damage as a result of ingestion. TNT is a possible (class C) human carcinogen. (EPA 2002a).

139. *Toluene.* Toluene adversely affects liver and kidney function through the ingestion pathway by causing significant increases in the weights of these organs. Inhalation of toluene results in adverse neurological effects in humans. Exposure to low to moderate levels can cause tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, loss of appetite, and hearing and color vision loss. Toluene has been linked to birth defects in children of exposed mothers. (EPA 2002a; ATSDR 2002).

140. *Tritium.* Tritium is considered a carcinogen based on its property of emitting ionizing radiation. Tritium is classified as a known (Class A) human carcinogen by the EPA. (EPA 2001).

Date: May 2, 2002

Peter Maggiore

PETER MAGGIORE
Cabinet Secretary
New Mexico Environment Department

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State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

GARY E. JOHNSON
GOVERNOR

JOHN R. D'ANTONIO, Jr.
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 9, 2002

Dr. John Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

Mr. Ralph Erickson, Area Manager
Department of Energy-Los Alamos Area Office
528 35th Street, Mail Stop A316
Los Alamos, New Mexico 87544

SUBJECT: FINALIZATION OF INSTALLATION WORK PLAN AND HYDROGEOLOGIC WORKPLAN SCHEDULES LOS ALAMOS NATIONAL LABORATORY NM0890010515

Dear Dr. Browne and Mr. Erickson:

This letter finalizes the Installation Work Plan and incorporates the Hydrogeologic Workplan schedules for Fiscal Years 2001 through 2005 submitted by the Department of Energy and the Los Alamos National Laboratory (collectively the Permittees). The specific documents that the Permittees submitted are *"Schedule of Groundwater Characterization Program Activities for FY 2001 and 2002"* referenced by ESH-18/WQ&H:01-315 and *"Supplement to Installation Work Plan for Environmental Restoration (ER), Revision 8: Annual Work Schedule for 2001 through 2005"* referenced by ER2001-0277. In accordance with Special Condition D, Corrective Action for Continuing Releases, of the Permittees Hazardous and Solid Waste Amendments module (Module VIII) of the Permittees Hazardous Waste Facility Permit (No. NM0890010515).

After review of the proposed schedules, the New Mexico Environment Department (NMED) modified many of the projected actions as proposed, particularly with respect to the priorities and the timeliness of the environmental corrective action activities. As a result, NMED developed a revised schedule that addresses these concerns. At the agency's discretion, NMED provided a thirty-day comment period to give the public an opportunity to comment on our proposed schedule. Comments were accepted from December 21, 2001 to January 21, 2002. Attached are NMED's final schedule (Attachment 1) and summaries of all written comments received and NMED's responses to the comments (Attachment 2).

Exhibit B
to Amended Complaint
Civ. No. 02-637 MV/DJS

The attached final revised schedule incorporates revisions that address: 1) the timeliness of groundwater characterization, both under the Hydrogeologic Workplan and site-or-canyon-specific work plans; 2) interim site stabilization of solid waste management units (SWMUs) and areas of concern (AOCs); 3) development of investigation work plans for long-term projects such as material disposal area (MDA) G; 4) site- or canyon-specific subsurface characterization requirements; 5) reporting of results from previously implemented work plans; and 6) investigation and remediation of high priority SWMUs/AOCs and high priority aggregates located within individual watersheds (e.g., Middle Mortandad/Ten-Site, Cañon de Valle and DP Site aggregates).

NMED also requires the Permittees to submit a plan that addresses assessment of SWMUs and AOCs for possible contaminant migration and, through prioritization, implements interim stabilization measures at the sites (e.g., source removal, disconnection of piping, and best management practices). The plan should include storm water monitoring and provide a maintenance and inspection plan for the best management practices at sites that require stabilization.

Site-specific investigation requirements will be discussed with the Permittees as the investigation work plans are developed. Many of these requirements as well as the work schedule are included in the draft corrective action order that NMED released for public comment earlier this year.

Should you have any questions regarding this schedule please contact John Young of my staff at (505) 428-2538.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:jry

cc: G. Lewis, NMED WWMD
D. Cobrain, NMED HWB
J. Kieling, NMED HWB
J. Young, NMED HWB
C. Will, NMED HWB
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB
J. Davis, NMED SWQB
M. Leavitt, NMED GWQB
C. de Saillan, NMED OGC
L. King, EPA 6PD-N
J. Vozella, DOE OLASO, MS A316
E. Trollinger, DOE OLASO, MS A316
G. Turner, DOE OLASO, MS A316
B. Ramsey, LANL RRES-DO, MS J591
D. McInroy, LANL RRES-ER, MS M992
W. Neff, LANL RRES-ER, MS M992
M. Kirsch, LANL RRES-ER, MS M992
D. Stavert, LANL RRES-WQH, MS K491
J. Ellvinger, LANL RRES-SWRC, MS K490
G. Bacigalupa, LANL RRES-SWRC, MS K490

File: Reading and LANL Permit (IWP and HWP)

Attachment 1
Los Alamos National Laboratory Work Schedule
Calendar Years 2002-2006

SITE	DELIVERABLE	DUE DATE
	CY 02	
TA-35 (Middle Mortandad/Ten Site Aggregate)	Integrated Sampling and Analysis Plan	3/31/2002
21-011(k)	Voluntary Corrective Measures Plan	4/30/2002
Airport Landfill - Drainages (73-001(a))	Interim Measures Plan	7/31/2002
260 Outfall (16-021(c), 16-003(k))	Interim Measures Report	7/31/2002
MDA H (54-004)	Investigation Report Addendum	9/30/2002
Airport Landfill - Mesa Top (73-001(a-d), 73-004(d))	Phase I Investigation Work Plan	9/30/2002
South Fork of Acid Canyon(1-002, 45-001)	Interim Action Report	10/31/2002
260 Outfall (16-021(c), 16-003(k))	Investigation Work Plan[1]	12/31/2002
3-010(a)	Geophysical Investigation Report (if needed)	12/31/2002
8 Regional Wells (CY02)	Well Completion Report	Four months after well construction is completed.
	CY03	
MDA C (50-009)	Investigation Work Plan[1]	1/31/2003
MDA P (16-018), TA-16-387	Closure Report	1/31/2003
MDA H (54-004)	Corrective Measures Study Report	3/31/2003
21-024(i)	Voluntary Corrective Action Report	3/31/2003
MDA G (54-013(b), 54-014(b-d), 54-015(k), 54-017, 54-018, 54-019, 54-020)	Investigation Work Plan[1]	4/30/2003
3-010(a)	Groundwater Investigation Work Plan[1]	4/30/2003
MDA L (54-006)	Investigation Work Plan[1]	5/31/2003
Site-Wide	Stabilization Plan	5/31/2003
MDA T (21-001, 21-010(a-h), 21-011(a, c-j), 21-016(a-c), 21-028(a), C-21-009, and C-21-012)	Investigation Work Plan[1]	5/31/2003
Mortandad Canyon	Groundwater Investigation Work Plan	6/30/2003
Airport Landfill - Drainages (73-001(a))	Interim Measures Report	6/30/2003
Water Canyon/Cañon de Valle	Investigation Work Plan[1]	6/30/2003

Attachment 1
Los Alamos National Laboratory Work Schedule
Calendar Years 2002-2006

SITE	DELIVERABLE	DUE DATE
260 Outfall (16-021(c), 16-003(k))	Corrective Measures Study Report for Surface/Alluvial Water	7/31/2003
260 Outfall (16-021(c), 16-003(k))	Phase III RCRA Facility Investigation Report	7/31/2003
TA-53 Surface Impoundments (53-002(a,b))	Investigation Report	7/31/2003
Los Alamos/Pueblo Canyons	Investigation Work Plan Addendum	8/31/2003
TA-35	Integrated Sampling and Analysis Plan Addendum	9/30/2003
MDA G (54-013(b), 54-014(b-d), 54-015(k), 54-017, 54-018, 54-019, 54-020)	Investigation Report	10/31/2003
MDA L (54-006)	Investigation Report	12/31/2003
6 Regional Wells (CY03)	Well Completion Report	Four months after well construction is completed.
CY 04		
Site-Wide	Stabilization Report	1/31/2004
16-008(a) (90s Line Pond)	Investigation Work Plan[1]	3/31/2004
16-003(o) (Fish Ladder)	Investigation Work Plan[1]	3/31/2004
MDA H (54-004)	Corrective Measures Implementation Work Plan	3/31/2004
MDA G (54-013(b), 54-014(b-d), 54-015(k), 54-017, 54-018, 54-019, 54-020)	Corrective Measures Study Work Plan	4/30/2004
Airport Landfill - Mesa Top (73-001(a-d), 73-004(d))	Phase II Investigation Work Plan	4/30/2004
MDA C (50-009)	Investigation Report	5/31/2004
3-010(a)	Groundwater Investigation Report	5/31/2004
Bayo Canyon (10-002(a, b), 10-003(a-o), 10-004(b), 10-007)	Investigation Work Plan[1]	6/30/2004
21-011(k)	Voluntary Corrective Measures Report	6/30/2004
Site-Wide	Stabilization Report	7/31/2004
Pueblo Canyon Aggregate Area	Investigation Work Plan[1]	8/31/2004
MDA T (21-001, 21-010(a-h), 21-011(a, c-j), 21-016(a-c), 21-028(a), C-21-009, and C-21-012)	Investigation Report	8/31/2004
Los Alamos/Pueblo Canyons	Investigation Report	10/31/2004

Attachment 1
Los Alamos National Laboratory Work Schedule
Calendar Years 2002-2006

SITE	DELIVERABLE	DUE DATE
MDA L (54-006)	Corrective Measures Study Work Plan	10/31/2004
260 Outfall (16-021(c), 16-003(k))	Corrective Measures Implementation Work Plan for Surface Water/Alluvial Groundwater	10/31/2004
MDA U (21-017(a-c), 21-022(f))	Investigation Work Plan[1]	11/30/2004
16-008(a) (90s Line Pond)	Investigation Report	11/30/2004
MDA P (16-018), TA-16-387	Storm Water Monitoring Plan	11/30/2004
MDA G (54-013(b), 54-014(b-d), 54-015(k), 54-017, 54-018, 54-019, 54-020)	Corrective Measures Study Report	12/31/2004
MDA B (21-015)	Investigation Work Plan[1]	12/31/2004
5 Regional Wells (CY04)	Well Completion Report	Four months after well construction is completed.
CY 05		
Cañon de Valle Watershed Aggregate	Investigation Work Plan[1]	1/31/2005
Mortandad Canyon	Investigation Report	1/31/2005
Site-Wide	Stabilization Report	1/31/2005
Cañon de Valle Watershed Aggregate	Investigation Work Plan[1]	1/31/2005
TA-35	Investigation Report	2/28/2005
Water Canyon/Cañon de Valle	Investigation Report	2/28/2005
DP Site Aggregate	Investigation Work Plan[1]	4/30/2005
260 Outfall (16-021(c), 16-003(k))	Investigation Report for Intermediate and Regional Groundwater	4/30/2005
Pajarito Canyon	Investigation Report	6/30/2005
Site-Wide	Stabilization Report	7/31/2005
16-003(o) (Fish Ladder)	Investigation Report	8/31/2005
73-002	Investigation Work Plan[1]	8/31/2005
Sandia Canyon/Cañada del Buey	Investigation Report	8/31/2005
Bayo Canyon (10-002(a, b), 10-003(a-o), 10-004(b), 10-007)	Investigation Report	9/30/2005

Attachment 1
Los Alamos National Laboratory Work Schedule
Calendar Years 2002-2006

SITE	DELIVERABLE	DUE DATE
Ancho/Chaquehui/Indio Canyons	Investigation Work Plan[1]	9/30/2005
MDA L (54-006)	Corrective Measures Study Report	10/31/2005
Potrillo/Fence Canyons	Investigation Work Plan[1]	10/31/2005
MDA B (21-015)	Investigation Report	12/31/2005
4 Regional Wells (CY05)	Well Completion Report	Four months after well construction is completed.
CY 06		
Site-Wide	Stabilization Report	1/31/2006
MDA U (21-017(a-c), 21-022(f))	Investigation Report	2/28/2006
MDA V (21-013(b,g), 21-018(a,b))	Investigation Work Plan[1]	3/31/2006
260 Outfall (16-021(c), 16-003(k))	Corrective Measures Study Report for Intermediate and Regional Groundwater	3/31/2006
Bayo Canyon Aggregate	Investigation Work Plan[1]	4/30/2006
73-002	Investigation Report	5/31/2006
MDA A (21-014)	Investigation Work Plan[1]	5/31/2006
TA-49 (MDA AB, Areas 1, 3, 4, 11, and 12)	Investigation Work Plan[1]	7/31/2006
Site-Wide	Stabilization Report	7/31/2006
Upper Los Alamos Canyon Aggregate	Investigation Work Plan[1]	10/31/2006
Airport Landfill - Mesa Top (73-001(a-d), 73-004(d))	Investigation Report	12/31/2006

1. Investigation work plans may include historical data reviews, existing data compilation, site structures assessment, voluntary corrective actions, voluntary corrective measures, RCRA facility investigations, interim actions, interim measures or other types of investigations.

Attachment 2
Installation Work Plan Schedule 2001-2005
Response to Public Notice No. 01-10

	Sender	Comment	Response
1	LANL/ER Project	In some instances, deliverables specified in the NMED Proposed Revised Schedule, or their due dates, appear unwarranted based on LANL's and NMED's existing knowledge of the site and its known or suspected contribution to human-health or ecological risk. Additionally, a number of NMED's proposed actions conflict directly with ER Project actions and approaches that NMED has already approved. Some examples of apparent conflicts include:	Based on NMED's site prioritization and existing data from LANL, NMED believes the proposed revised schedule reflects warranted work.
1a		Clean closure of Material Disposal Area (MDA) P is nearly complete; however, the monitoring requirements outlined in the NMED Proposed Revised Schedule conflict with clean closure requirements	NMED has not determined that MDA P can be clean closed because sampling data has not been submitted.
1b		Much of the work proposed for MDAs, particularly in FY02 and FY03, represents entirely new work of a significant deviation from current schedules.	When prioritizing the MDAs, NMED sought LANL's input and approval. LANL, however, did not provide input. Had LANL been a part of the prioritization process, it would have been aware of NMED's priorities before issuance of the revised schedule.
1c		NMED proposes an investigation work plan be prepared for MDA C by March 31, 2002, although an RFI report is already being prepared in accordance with an RFI work plan previously approved by NMED.	Based on investigation data, the extent of contamination found at depths has not been determined. Additional sampling needs to be performed.
1d		The NMED Proposed Revised Schedule requires an investigation report be prepared by January 31, 2002 for MDA H. An RFI report was submitted in 2001, and an RFI addendum and CMS report are being prepared for submittal in FY02 in accordance with an approved high performing team (HPT) schedule.	The revised schedule will be changed to have the MDA H Investigation Report Addendum due on September 30, 2002.
1e		In response to discussions on prioritization with NMED during the spring of 2001, LANL accelerated work at MDAs A, B, and U to begin in FY02; significant FY02 resources were assigned to meet these NMED priorities. This work is well under way. However, the NMED Proposed Revised Schedule postpones this work until 2004-2005 and proposes instead the acceleration of work at MDA T, which would redirect resources from these investigations which are nearly completed.	NMED will consider revising the schedule to reflect the accelerated work at MDAs A, B, and U that began in FY02.
1f		The NMED Proposed Revised Schedule requires a number of new deliverables that represent a substantial amount of work to be completed during FY02 and FY03. This new work was never presented to or discussed with LANL as a priority; therefore, LANL has not requested funding for these projects.	NMED is aware that the amount of work that can be performed is partly based on available funding. However, NMED believes that the deliverables outlined in the revised schedule for FY 02 and FY 03 represent warranted investigations in the near future. It is the Permittee's responsibility to ensure that necessary funding is available.

Attachment 2
Installation Work Plan Schedule 2001-2005
Response to Public Notice No. 01-10

	Sender	Comment	Response
1g		The NMED Proposed Revised Schedule requires investigation work plans and reports for MDAs G, H, and L to delineate the nature, rate and extent of subsurface contamination, stating that this determination is incomplete for these MDAs. These proposed requirements take no account of and would duplicate the ongoing RFI investigations being performed in accordance with an NMED-approved RFI work plan. Additionally, the proposed requirements appear to conflict with the December 21, 2001 letter form James Bearzi to John Browne and David Gurule denying the completeness of the closure and post-closure care plans for these MDAs.	Characterization data for MDAs G, H, and L are not adequate to delineate the extent of the contaminant releases or to determine the threat to human health and the environment from direct exposures and from contaminant migration to groundwater. Without sufficient data, closure and post-closure care cannot be addressed. Additionally, MDA G is currently being used for the disposal of low-level radioactive waste in pits and storage of mixed and transuranic waste.
2	LANL/ER Project	The NMED Proposed Revised Schedule, as drafted, would negatively impact the progress of cleanup and completion at many LANL ER Project sites. Since 1999, the ER Project has executed its work based on the watershed approach developed in conjunction with the Department of Energy (DOE) and NMED. This well-reasoned and technically sound approach set priorities for how quickly sites needed to be addressed based on their risks to human health and the environment. It also incorporated all NMED recommendations concerning watershed and aggregate prioritization (see *HRMB Recommendations Concerning the Proposed Watershed and Aggregate Prioritization, Los Alamos National Laboratory, NM 0890010515,* S. Dinwiddie to T. Taylor and J. Browne, dated March 24, 1999) and has been used thereafter as the basis for scheduling work in the ER Project Baseline.	There are other factors, besides the watershed approach, that must be considered to determine the ER Project's priorities for investigation and cleanup (for example, land transfer). NMED does not believe that its revised work schedule would negatively impact progress at any high priority site because ongoing investigations were considered when developing the schedule.
		The work in the ER Project baseline over the next few years focuses principally on the Mortandad and Los Alamos/Pueblo watersheds. However, the NMED Proposed Revised Schedule redirects much FY02 and FY03 work to watersheds and sites outside the two highest-priority watersheds. These changes would significantly impact the schedule for completing ER Project work in the key-priority watersheds. Further, it departs from the carefully constructed logic on which the current watershed approach was based, as agreed upon by the NMED and ER Project three years ago. We request NMED assess very carefully the impact of changing the sequence of events mid-stream, as any change will have a domino effect resulting in loss of a great deal of work done to date.	Although there are higher priority watersheds that need addressing more quickly than lower priority watersheds, there are high priority sites and aggregates within those lower priority watesheds that need immediate attention. In addition, much of the work scheduled for CY 02 and CY 03 was either ongoing work that should continue or work that was previously agreed upon by HPTs or other entities. In addition, work done to date will not be "lost" unless LANL intends to delete the accumulated data from their database.
3	LANL/ER Project	Some deliverables listed in the NMED Proposed Revised Schedule are difficult to comment on because the intent behind the deliverable is unclear. For example:	

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3a		The NMED Proposed Revised Schedule requires that a groundwater investigation work plan for Mortandad Canyon be prepared by 8/31/02. Groundwater investigations were required as part of the existing Mortandad Canyon Work Plan and the Hydrogeologic Work Plan (HWP) submitted to NMED on 9/25/97 and 6/14/93 respectively. In accordance with these two work plans, the ER Project has completed intermediate wells and 2 deep wells in Mortandad Canyon. Alluvial wells are currently scheduled for installation and sampling in FY03. Under current regulatory process for review and approval of documents and the scope of work within, if NMED believes groundwater in Mortandad Canyon would not be sufficiently characterized by executing these plans as written, the Laboratory would expect to receive written direction to revise these plans, rather than a mandate to develop an entirely new investigation work plan.	NMED believes that groundwater in Mortandad Canyon is not sufficiently characterized by the Mortandad Canyon Work Plan and the HWP. Several additional alluvial, intermediate, and regional wells are required as part of the revised schedule. NMED will require a work plan for installation of all wells. Written direction for this additional investigation is expected to be provided by September 30, 2002.
3b		Three deliverables listed on the NMED Proposed Revised Schedule for Cañon de Valle are consistent with currently planned work in that watershed; however, a fourth deliverable, the Investigation Work Plan for Cañon de Valle watershed aggregate, due 3/31/03, appears somewhat duplicative of the other three and places Cañon de Valle watershed work ahead of the higher-priority Mortandad and LA/Pueblo watershed work.	The NMED does not consider the Investigation Work Plan for Cañon de Valle aggregate to be duplicative. It will describe the investigation for the remaining SWMUs and AOCs in the watershed. Although the Mortandad and LA/Pueblo watersheds are higher priority than the Cañon de Valle watershed, high priority aggregates within watersheds need to be addressed more quickly than low priority aggregates in high priority watersheds.
3c		Numerous deep wells are specified for completion in FY02 and FY03 in the NMED Proposed Revised Schedule. LANL proposed two deep wells in its March 30, 2001 proposed IWP schedule, and several other additional deep wells to be constructed under the HWP, based on budgetary constraints and discussions with the NMED. Some of the many wells NMED listed for FY02 completion are characterization wells associated with the HWP. They are associated with regional characterization of the LANL subsurface environment for purposes of determining an appropriate detection monitoring system for RCRA permitted operating units. Only wells associated with characterization of releases are appropriate for inclusion in the IWP schedule (although not on the timetable proposed by NMED). The requirements for regional characterization wells (implemented under the HWP, not the IWP) are not appropriate for inclusion in this proposed work schedule.	All wells to be drilled were included as a matter of completeness for the schedule. Some wells serve a dual purpose, for both regional characterization and characterization of releases.
3d		The content of a well completion report continues to remain unclear for both parties; therefore, it is difficult to comment on the reasonableness of a four-month turn-around time for these reports.	The well completion report format currrently being used is complete, thorough, and is acceptable to NMED.

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4	LANL/ER Project	In numerous instances, the NMED Proposed Revised Schedule requires an investigation report be completed one year after the work plan has been submitted to the agency. Past experience has shown repeatedly that review of LANL deliverables (either work plans or reports) has taken NMED several months to a few years, forcing LANL to either execute work based on unapproved plans or delay the work pending regulatory agency approval. Therefore, the ER Project recommends eliminating all deliverable due dates for reports listed in a work plan that has not been approved by NMED. LANL recommends instead that due dates for investigation or study reports be specified on a case-by-case basis when the work plan is approved. Requiring a 12-month cycle of completing the report after work plan submittal does not account for variations in site complexity, the extent of the required investigation, or delays in work plan approval by the agency.	The revised schedule was designed with regard to NMED resources; however, NMED recognizes that there are circumstances that will cause changes in the schedule (for example, site conditions, acts of nature, work plan quality). NMED may grant extensions on document submittals to compensate for these circumstances. NMED also recognizes that there are issues regarding lengthy review times and will implement mechanisms to ensure timely reviews.
5	LANL/ER Project	The NMED Proposed Revised Schedule requires a January 2002 deadline. It is unclear as to how NMED would enforce this deliverable when that date will have passed by the time a new work schedule is issued.	NMED's revised schedule includes deliverable dates that were previously agreed upon prior to the development of the revised schedule, therefore, where applicable, the dates have not been changed.

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6	LANL/ER Project	The NMED Proposed Revised Schedule would exceed what is possible given the reductions under the Bush FY02 budget. NMED has proposed a significant amount of new work, including requirements to drill numerous deep wells and submit completion reports, and additional work in canyons, MDAs, and high explosive production sites. NMED has demonstrated neither imminent and substantial endangerment nor other conditions warranting interim measures as defined in the current Module VIII. Therefore, no driver is evident that requires the extensive suite of new or accelerated actions in the NMED Proposed Revised Schedule to be completed in FY02 and FY03. Given both parties' knowledge of site conditions, NMED has presented neither the rationale for its departure from the ageed-upon site prioritization and schedule nor the justification for the additional out-year actions (or schedule acceleration for expected future activities). As NMED is aware, the Federal budget process cannot accommodate changes of this magnitude to a current fiscal year budget, especially in mid-year.	NMED's position is that additional work is necessary to adequately characterize and reduce risk at high priority SWMUs, AOCs, and aggregates in order to adequately protect human health and the environment. NMED does not have to demonstrate imminent and substantial endangerment to warrant interim measures. Permit Module VIII states the following factors may be considered when determining the need for interim measure: actual and potential exposure to receptors; actual and potential contamination of drinking water supplies and ecosystems; potential for further degradation of the medium absent interim measures; and presence and concentration of hazardous waste, including hazardous constituents in soil that have the potential to migrate to surface water and groundwater. Also, Module II, Section N, states that the permittee shall take corrective action, as required by Section 74-4-4.2B NMSA 1978 (as amended 1989), for all releases of hazardous wastes or constituents from any solid waste management unit at [t]his facility.
			It is NMED's position that the revised schedule does not represent a significant deviation from the agreed-upon approach (for example, high priority sites are included).
7	Ms. Jerilyn Bowen	NMED provides no information on what is being done through the IWP schedule or how it is being revised. "Since that makes it impossible for me to comment, I would simply like to go on record as being adamently opposed to the dumping and storage of radioactive materials at LANL, in the Jemez Mtns, or anywhere in NM where public health is at risk. For way too long "national security" has been interpreted as a rationale for endangering the health and well-being of human beings who live in this state - not to mention other living beings and the environment. Please do your job and protect the people of this state, not the U.S. government, the military, and the corporations who profit from their contracts with LANL."	The NMED revised schedule can be found at the Hazardous Waste Bureau's office at 2905 Rodeo Park Drive East or at the NMED website at www.nmenv.state.nm.us/hwb/publicnotice.html. The schedule includes the sites under investigation, the investigations being required, the key components of the investigations, and deliverable due dates.

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8	Global Resource Action Center for the Environment	Stop all production of new radioactive waste.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
9	Global Resource Action Center for the Environment	Do a technology review to evaluate what works for the safe storage of radioactive materials.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
10	Global Resource Action Center for the Environment	Consider the many proposals from entrepreneurs and small businessess for new, safer ways of containing the waste, filtering it from the soil and water, and storing it safely.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
11	Global Resource Action Center for the Environment	Stop relying on the usual big contractors and their flawed plans.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
12	Global Resource Action Center for the Environment	All plans should contain provisions for keeping the waste as close as is safely possible to the site where it was generated.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
13	Global Resource Action Center for the Environment	Do not plan to ship nuclear waste to be dumped in an unsatisfactory storage facility, Yucca Mountain in Nevada.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
14	Global Resource Action Center for the Environment	Do not endanger communities along a transportation route or leave us open to terrorist sabotage.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
15	Global Resource Action Center for the Environment	Make plans for adequate guns, gates, and guards to keep nuclear material where it is stored and to prevent theft.	This comment is beyond the scope of the revised schedule and is not the topic of this public notice.
16	Nuclear Watch of New Mexico	We strongly urge that the NMED not only consider all comments received from the public, but also provide written response to those comments. In our experience, public comment periods have a beneficial impact upon the proposed work and therefore agencies should do their utmost to encourage participation.	NMED is responding to all comments received.
17	Nuclear Watch of New Mexico	NWNM believes that Revision 8 of the Installation Work Plan (IWP) constitutes a major modification to Module VIII of the Los Alamos National Laboratory (LANL) Hazardous and Solid Waste Act (HSWA) Permit and is therefore subject to the rules and regulations promulgated under 40 CFR §270.42 and 20.4.1.900 NMAC.	The LANL IWP (including its annual revision, updating, and approval) is a requirement of LANL's HSWA Permit and not a modification and, therefore, is not subject to 40 CFR §270.42 and 20.4.1.900 NMAC. Module VIII of LANL's Permit, Section Q, states that "the Permittee shall prepare a single installation-wide work plan, which shall be updated annually."

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18	Nuclear Watch of New Mexico	NWNM would like to compliment NMED on its forward thinking in its proposed list of deliverables from LANL up to FY 05 in its draft Work Schedule. This foresight is conspicuously lacking on LANL's part. Nevertheless, NWNM finds that NMED's description of those deliverables and scheduled dates are often vague or completely lacking. This is of particular concern as there is a substantial lack of supporting data and documentation for the deliverables NMED requests from LANL. Both LANL and NMED are responsible for this, and this oversight seriously impedes educated public participation.	The revised schedule was developed based on existing data and documentation that can be found at the Hazardous Waste Bureau's office at 2905 Rodeo Park Drive East. The intentionally brief descriptions of the deliverables were appropriate for NMED's reponse to LANL's submittal. The revised schedule was not intended to include supporting information.
19	Nuclear Watch of New Mexico	The NMED has denied access to draft corrective action plans, and despite a number of requests NMED has failed to publicly release a list of known Resource Conservation and Recovery Act (RCRA) violations at LANL. Furthermore, LANL has closed much of its Environmental Restoration web site's virtual library. This library was the only electronic source for documents such as RCRA Facility Investigations (RFIs) and Canyon Reach Reports, all of which have direct relevance to the IWP and LANL RCRA permit renewal process. NWNM requests both NMED and LANL to expedite the release (or re-release) of these documents to the public.	The documents submitted to NMED by LANL are available for review at the Hazardous Waste Bureau office located at 2905 Rodeo Park Drive East, builing , in Santa Fe.
20	Nuclear Watch of New Mexico	NWNM also requests that NMED provide a more detailed description to its "Key Components to Investigation" in its draft Work Schedule, including but not limited to justification for requesting those key components. Without such a justification, it is unclear why NMED has prioritized its requested deliverables in the manner that it does. NMED has requested public comment on its IWP Work Schedule. Yet that proposed Work Schedule will likely be largely superceded by NMED's corrective action plans, which have not been released to the public. As a result, public comment on NMED's LANL IWP schedule is rendered nearly meaningless.	NMED agrees that the information provided in the revised schedule is not detailed. However, the terms used were meant to provide a brief description of the sites and the deliverables that were due, and not be inclusive of all the details and background information used to create the schedule. Background information is available at the Hazardous Waste Bureau's office at 2905 Rodeo Park Drive East, Building 1. The schedule outlined in the IWP and the final Order will reflect the revised schedule.

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21	Nuclear Watch of New Mexico	NWNM is concerned that the deliverables in NMED's Work Schedule are only "process" requests in that they request much data but mandate little (if any) actual cleanup. Process requests are, without doubt, valuable in identifying the nature and volume of contaminants located at LANL facilities. NMED, however, must by now have substantive data to support real environmental restoration at a number of LANL facilities. NMED, however, should have had, beginning decades ago, enough substantive data to support mandating real environmental restoration. It is under NMED's jurisdiction to order cleanup at LANL facilities, and such orders should be included in the NMED Work Schedule list of deliverables. Anything short of this would be negligent on the part of NMED, particularly when, for example, the National Nuclear Security Agency admits that there is a "Future potential risk due to proximity to [the] local water supply well field" as Los Alamos.	In the recent past, NMED has mandated cleanup at many sites (for example, Acid Canyon and MDA P) where existing data supported such corrective actions. Several sites (for example, the TA-16-260 Outfall, MDA G, and MDA H) are either beginning or are in the process of performing corrective measures studies. However, many sites at LANL have not yet been adequately characterized and investigated. These are sites where NMED and LANL lack adequate supporting information to make risk-based, corrective action decisions. Information on extent of surface and subsurface contamination and rates of contaminant migration are key components to these decisions. Additional groundwater characterization is needed to determine if there is a risk to the local water supply from activities at LANL.
21a		Declining Department of Energy cleanup budgets jeopardize efforts that will address such "potential risk[s]." All of this is amplified by the residual effects of the Cerro Grande Fire. NMED bears the responsibility to prioritize cleanup efforts at LANL, mandate cleanup programs, and enforce those mandates if necessary. An aggressively mandated cleanup schedule, backed by NMED's authority to enforce, will force the Deprtment of Energy to allocate more funds for LANL cleanup.	NMED believes that the IWP schedule adequately prioritizes site investigations and the identified cleanup actions. The results of the scheduled site investigations will identify the needs for further corrective actions which will be added to the schedule.

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22	Nuclear Watch of New Mexico	In a letter to NMED, LANL asserts that "budget uncetainties made it impossible to provide realistic drilling targets last spring" for the test wells drilled in support of the Hydrogeologic Workplan (HWP). The letter goes on to state that "budget uncertainties still persist." NMED has failed to mandate an aggressive drilling schedule for the test wells that support the HWP. NMED must do so, and if LANL is not capable of meeting the NMED drilling schedule, it is within NMED's authority to enforce that schedule. In a word, LANL's claim that "budget uncertainties" dictate the rate of drilling is ridiculous. Because of NMED's jurisdiction over this process, NMED can directly influence monetary appropriations to LANL for this project by issuing compliance orders to LANL to complete this project by the target date. At the current rate of drilling, LANL will fail to meet the target date. Again, NMED would be negligent if it allowed LANL to fail. NMED demonstrates too much leniency in its Work Plan when it fails to mandate specific dates for Well Completion Reports.	Annually, NMED and LANL discuss which HWP wells will be drilled in the upcoming fiscal year. Due to use of the Data Quality Objectives review process described in the HWP, the precise well locations and the order in which the wells will be drilled and installed are reviewed and subject to change. Currently, NMED has mandated in its revised schedule eight wells for calendar year 2002, six wells for 2003, five wells for 2004, and four wells for 2005. LANL has committed to completing all of the HWP wells. Updates are provided at the Quarterly meetings. NMED has determined that four months is an appropriate length of time once a well has been installed to complete a well completion report.
22a		NMED must specify due dates for these Well Completion Reports, and thereby provide LANL with a mandated prioritized schedule for the completion of those test wells 4 months prior to the release of the Well Completion Reports. NMED must also be prepared to enforce that schedule if LANL does not comply.	
23	Nuclear Watch of New Mexico	NMED has failed to vigorously mandate the completion of RFIs for LANL. This seriously compromises both NMED's ability to prioritize cleanup efforts at LANL as well as LANL's ability to adequately mitigate contaminants at its facilities. In LANL's own words, "the scope of the RCRA corrective action process include[s] performing a RCRA facility investigation (RFI), followed by a corrective measures study (CMS), if applicable, and a corrective measures implementation (CMI)." NMED must mandate a rigorous plan to complete the remaining RFIs, and be prepared to take action to enforce that plan if LANL does not maintain it. If past history is any indication, there is a good probability of LANL's failure to formulate RFIs in a timely manner. This failure will block real cleanup at LANL.	The revised schedule does not impede the already mandated (see LANL's HSWA Module VIII in the RCRA Permit) completion of RFIs at LANL. The RFI process includes providing a description of current site conditions, submitting a work plan, performing the investigation, analyzing the data, and submitting a report. All of these steps are encompassed within the deliverables on the revised schedule.

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24	Nuclear Watch of New Mexico	The Work Plan is also deficient because it does not mandate closure plans for material disposal areas (MDAs) G and L at Technical Area 54. As NMED is aware, closure plans are required for MDAs when no active RCRA permit exists. Such is currently the case with LANL. NMED must demand closure plans for these MDAs, and be prepared to enforce such a request if LANL does not expedite the development of those plans. Closure plans are particularly important in light of statements made by LANL that "MDA G will be operated as an active waste management site under institutional control. Eventually, institutional control will be transferred to Bandelier National Monument." Without doubt, mitigation of MDA G will be extensive as the site contains "reactor control rods and PCB soil." This confirmed contamination only heightens the need to create closure plans for a facility that will at some point become public land. Furthermore, because MDAs G and L have not had an active permit since 1985, they are required to close under 40 CFR §§ 265.112(d)(3) and 265.113(b).	The revised schedule only addresses corrective action requirements as limited by LANL's operating permit. The reissuance of the permit will address any closure/post-closure requirements. Additionally, MDA G is currently being used for the disposal of low-level radioactive waste in pits and storage of mixed and transuranic waste.
25	Nuclear Watch of New Mexico	The Defense Nuclear Facilities Safety Board (DNFSB) recently released a report citing construction flaws and structural integrity uncertainties regarding the Pajarito Dam. As of yet, LANL has not completed a reach report for Pajarito Canyon. In its Work Schedule, NMED must request that that study be completed so that a clear understanding of the environmental risks posed by contaminants in the Pajarito Canyon Reach system is understood. That reach report should now include analysis of the status of the dam. Following the completion of that reach report, NMED must be prepared to order LANL to begin mitigation of those contaminants.	LANL has submitted the Pajarito Canyon Work Plan, which will address the alluvial system upgradient and downgradient of the dam. The investigation report, due in March 2005, will summarize the surface and subsurface contamination, including any contamination which is associated with the dam. LANL has prepared a Predecisional Draft Environmental Assessment that addresses future disposition of sediments eroded by the conditions resulting from the Cerro Grande Fire . NMED has provided comments on the draft, which are available from NMED's Office of the Secretary.
26	Nuclear Watch of New Mexico	There has been recent evidence that perchlorates may have found their way into springs and stream systems leading to the Rio Grande. NMED must mandate LANL to expeditiously identify possible sources and do the necessary remediation to eliminate potential contamination.	Perchlorate is a high priority contaminant and will be included in the investigation work plans mandated under the revised schedule.
27	Nuclear Watch of New Mexico	Furthermore, NWNM feels that TA-21, the 260 Outfall, and Mortandad Canyon all require special attention and rigorous investigations in the near future, leading to substantial cleanup.	All of these sites are scheduled for further investigation.

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28	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	We are concerned at the failure to mention any field activities. Without going into detail, we suggest that field sampling at any location now scheduled, and any corrective measures, be incorporated into the schedule. Furthermore, work under the Hydrogeologic Workplan is central to environmental restoration at Los Alamos. The drilling and completion of boreholes scheduled for FY 2002 should be included in the schedule as well as well reports for any wells on which such reports have not been published.	The revised schedule addresses deliverables only and does not include the field activities associated with these deliverables. Field activities are implied between work plans and report submittal. In addition, all HWP wells and well completion reports are included in the revised schedule. The wells identified in the schedule are acting as place holders for the number of wells to be drilled each year.
29	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	Sampling and Analysis Plans should also be scheduled in the IWP amendment (TA-53, underground tanks; TA-0, hospital waste lines; TA-21, soil contamination area, container storage, septic system, MDAs B, T, and V; TA-22, misc. sites; TA-35, misc.sites, integrated SAP; TA-15, misc. sites; TA-26, misc. sites; TA-50, misc. sites; TA-00, mortar impact areas; TA-3, 48, 50, 60 integrated SAP; TA-4, 52 integrated SAP; TA-3, 32, 41, 43 integrated SAP; TA-5 integrated SAP;TA-46 integrated SAP; TA-4, 5, 52, 63, integrated SAP; and TA-42, 55, integrated SAP).	The work included in the aforementioned SAPs will be presented in aggregate submittals outlined in the revised schedule. Depending on NMED prioritization some of these submittals will occur sooner than others.
30	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	The FY 2001-05 schedule should specify the due dates for RFI reports, to the extent not yet filed and should include the following: TA-21, MDAs B, U, V (also A, T?); TA-11, misc. sites; TA-54, MDAs G, L; TA-49, MDA AB shafts; TA-50, MDA C; TA-53, impoundments; TA-15, detonation ground and MDA N; TA-20, landfill; TA-5, firing site; TA-4, firing site; TA-16, 260 outfall).	The work included in the aforementioned RFIs will be presented in aggregate submittals outlined in the revised schedule. Depending on NMED prioritization some of these submittals will occur sooner than others.
31	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	Corrective Measures Study Plans and Report should be scheduled in the IWP amendment for: TA-54, MDA G disposal areas; TA-16, 260 outfall; TA-54, MDAs H and L; other potential release sites, such as MDAs in TA-21 and MDA C.	Since the revised schedule only addresses work activities through calendar year 2006, all the corrective measure plans/reports are not shown. In addition, depending on the results of the investigations, the CMS process may or may not be necessary.
32	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	Include the schedule for the canyons investigations. The IWP schedule should include work through the completion of CMS reports. This includes plans for Mortandad Canyon, Pajarito, Twomile, and Threemile Canyons, Cañon de Valle, Water Canyon, Ancho Canyon, Chaquehui Canyon, Sandia Canyon, Cañada del Buey, Guaje Canyon, Rendija Canyon, Barrancas Canyon, Bayo Canyon, Potrillo Canyon, and Fence Canyon.	Since the revised schedule only addresses work activities through calendar year 2006, all the canyons work plans are not shown depending on NMED prioritization. In addition, depending on the results of the investigations, the CMS process may or may not be necessary.

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33	NM Attorney General's Office/Lindsay Lovejoy (April 25, 2001)	Individual PRSs should have specific dates when final cleanup is to be accomplished as well as intermediate dates. Failure to meet these dates should have a built-in penalty structure.	The revised schedule includes dates for submittal of investigation work plans and reports. The penalty for noncompliance is described in 40 CFR 270.30 which states that the permittee must comply with all conditions of the permit and any permit noncompliance constitutes a violation of the appropriate Act and is grounds for enforcement, permit termination, permit revocation and reissuance, permit modification, or denial of a permit renewal application.
34	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1071: Concerning the Los Alamos airport landfill sites, PRSs 73-001(a-d) and 73-004(d). The AGO recommends that sufficient planning, risk assessment, and field work, including a CMS and interim measures to reduce the public hazards in FY 02.	All of the SWMUs, AOCs, and other sites at LANL will be characterized and remediated individually, as part of an aggregate, or as part of a canyon system. The revised schedule includes work plans and reports associated with each individual site, aggregate, or canyon. If further data collection is required, a CMS has not been scheduled. However, several of the sites listed in the comment are undergoing some type of remediation or other corrective action. The dates listed in the revised schedule for plans and reports are based on available data, NMED's prioritization of the site, aggregate, or canyon, and on the suspected or known amount of work that needs to be performed.
35	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1078: LANL should be required to submit a proposal to delete PRSs in OU-1078 from the permit or, alternatively, to conduct a CMS and complete a CMS report on such PRSs (for example, Hillside 138).	
36	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1079: NMED should direct the completion of whatever sampling needs to be done in these PRSs (for example, those at TA-10 and Bayo Canyon) and, as appropriate, the submission of CMS work plans and the carrying out of such plans in FY 02. NMED should direct that any needed additional sampling be completed at TA-32 and that RFI report supplementation be completed in FY 02.	
37	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1082: At the 260 outfall, the AGO strongly suggests that a schedule be set that includes such wells penetrating the regional aquifer as are called for to measure the extent of the contamination and that a deadline be established for the completion of investigations and preparation of a CMS report.	
38	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1086: List for completion the TA-15 firing site RFIs in FY 02 that have already been started.	
39	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1093: For the criticality test area at TA-18, schedule the completion of the SAP, field work pursuant to the SAP, and CMS report in FY 02.	
40	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1100: For the TA-53 surface impoundments, schedule any sampling, analysis, and submission of an RFI report for FY 02.	

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41	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1106: Require LANL to complete all planned sampling and finish investigatory reports for MDAs T, U, B, A, and V and schedule any approved interim action in connection with outfalls 21-024(i) and 21-011(k) in FY02.	
42	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU 1114: For PRS 3-010(a), schedule the completion of further characterization of groundwater impacts and report submittal in FY 02.	
43	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1122: For TA-33 firing sites and MDAs, schedule additional sampling to determine radiological contamination extent and potential risks of contaminant migration to springs, and report submittal in FY 02.	
44	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1129: Complete Phase II sampling at TA-35. Perform additional sampling at outfalls connected to the TA-48 radiochemistry site in FY 02 (EPA advised NMED in 1998 that outfall sampling was inadequate).	
45	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1130: File and complete SAP for TA-36 firing sites and surface disposal areas in FY 02.	
46	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1132: Complete RFI report for TA-39 in FY 02.	
47	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1144: Complete RFI report for MDA AB, PRSs 49-001(a-g) in FY 02.	
48	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU- 1147: Complete RFI report and submit recommendation for further action for MDA C, PRS 50-009.	
49	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1148: NMED should require submission and execution of RCRA closure plans for MDAs G, H, and L. RFI reports should be completed and a CMS should be conducted and reported in FY 02.	
50	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	OU-1157: Complete investigations and submit RFI reports for MDAs M and Q in TA-8 and TA-9 in FY 02.	
51	NM Attorney General's Office/Lindsay Lovejoy (September 27, 2001)	Canyons: NMED should require submission of any incomplete canyon work plans in mid-FY 02 and completion of reach reports for Mortendad, Sandia, and Pajarito Canyons in FY 02.	

Attachment 2
Installation Work Plan Schedule 2001-2005
Response to Public Notice No. 01-10

	Sender	Comment	Response
52	NM Attorney General's Office/Lindsay Lovejoy (January 22, 2002)	The AGO believes the proposed schedule constitutes a permit modification and that the public processes for permit modifications apply here and should be followed....Submitted and approved ongoing reports and schedules, direction for corrective measures, changes such as a no-further-action determination, and adoption of a different task (such as interim corrective measures) should all be processed as major modifications, if appropriate, annually. Modification to the Corrective Action Schedule of Compliance in Module VIII is also subject to public processes....It seems clear that the permit modification procedures of 40 CFR § 270.41 or § 270.42 apply here.	The LANL IWP (including its annual revision, updating, and approval) is a requirement of LANL's HSWA Permit and not a modification and, thus, is not subject to 40 CFR § 270.41 or § 270.42. Module VIII of LANL's Permit, Section Q, states that "the Permittee shall prepare a single installation-wide work plan, which shall be updated annually".
53	NM Attorney General's Office/Lindsay Lovejoy (January 22, 2002)	The proposed LANL Work Schedule is almost unintelligible, except to one who has assiduously and continuously studied corrective action at Los Alamos. References to "21-011(k)", "260 Outfall", and "R-13" lack meaning without an explanation of the origins of the contamination and the progress of remediation. Even more troublesome is the use of cryptic terms such as "Investigation Work Plan" and the listing of "key components" such as "delineate nature, rate, and extent of subsurface contamination..." The stated requirements are so cursory that the public cannot tell what is being demanded. The rules require more than this. NMED is required to prepare a Fact Sheet which would explain the role to be played by each of the scheduled submittals and actions in the corrective action process, according to 20 NMAC 4.1.901.D(1).	NMED agrees that the information provided in the revised schedule is not detailed. However, the terms used were meant to provide a brief description of the sites and the deliverables that were due, and not be inclusive of all the details and background information used to create the schedule. Background information is available at the Hazardous Waste Bureau's office at 2905 Rodeo Park Drive. Since this is not a permit modification, 20 NMAC 4.1.901.D(1) does not apply to this revised schedule.
54	NM Attorney General's Office/Lindsay Lovejoy (January 22, 2002)	NMED needs to state how it will use the collected data to eliminate risk. It needs to articulate the methodology it has chosen to govern decision-making as to final corrective action. The public cannot adequately comment upon a program of further drilling and data-gathering without this information. The public should be allowed to comment on the specifics of NMED's planning, based on an explanation of the design of the overall plan.	The NMED does not use data to eliminate risk. Data is used by LANL to determine risk. NMED, in turn, uses this assessment to determine the need for the appropriate corrective action(s). The public is asked to comment on the corrective action process if NMED requires a CMS. The public also has the opportunity to comment during the permit modification process for no further action determinations.

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2044 A Galisteo Street
Santa Fe, New Mexico 87505
Telephone (505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

PAUL R. RITZMA
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

February 12, 2001

Dr. John Browne, Director
Los Alamos National Laboratory
c/o University of California
Post Office Box 1663, MS A100
Los Alamos, New Mexico 87545

Mr. David A. Gurule, Area Manager
Los Alamos Area Office
Department of Energy
528 35th Street, MS A316
Los Alamos, New Mexico 87544

RE: REQUEST FOR INFORMATION PURSUANT TO THE NEW MEXICO HAZARDOUS WASTE ACT AND THE RESOURCE CONSERVATION AND RECOVERY ACT
LOS ALAMOS NATIONAL LABORATORY
EPA ID NO. 0890010515

Dear Dr. Browne and Mr. Gurule:

The New Mexico Environment Department ("NMED") Hazardous Waste Bureau ("HWB") is preparing corrective action requirements for the Los Alamos National Laboratory facility ("LANL Facility") in Los Alamos, New Mexico pursuant to the New Mexico Hazardous Waste Act ("HWA"), NMSA 1978, §§ 74-4-1 through 74-4-14, and the federal Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6901 through 6992k, in conjunction with reissuance of the RCRA hazardous waste management Permit ("Permit") for the LANL Facility. The corrective action will address releases of hazardous wastes and hazardous constituents into the environment from the LANL Facility. Preparation of these requirements necessitates inquiry into the identification, nature, and quantity of waste materials that are or have been generated, treated, stored, disposed of, or otherwise managed at, or transported to, the LANL Facility. Inquiry into the nature, size, and location of waste disposal areas at the LANL Facility, and the release or potential for release of hazardous waste or hazardous constituents from such disposal areas, is also necessary.

Exhibit C
to Amended Complaint
Civ. No. 02-637 MV/DJS

Los Alamos National Laboratory ("LANL") is a national laboratory owned and operated by the United States Department of Energy ("DOE"), and DOE is an agency of the United States. LANL is also operated by the University of California ("UC"). Each of these entities, DOE and UC, is a person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes within the meaning of the HWA and RCRA. NMSA 1978, § 74-4-3.K; 42 U.S.C. § 6903(15).

Section 74-4-4.3.A(1) of the HWA provides that "For the purposes of taking any corrective action or enforcing the provisions of the [HWA], . . . upon request of [NMED] any person who generates, stores, treats, transports, disposes of or otherwise handles or has handled hazardous wastes shall furnish information relating to such hazardous wastes." Likewise, section 3007(a) of RCRA provides that "For purposes of enforcing the provisions of [RCRA], any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of . . . any duly designated officer, employee, or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes." 42 U.S.C. § 6927(a).

In accordance with these provisions, compliance with this information request by you is mandatory. Failure to respond fully and truthfully to this information request within the time specified herein, or adequately justify such failure to respond, may result in an enforcement action by NMED pursuant to section 74-4-10 of the HWA, or section 7002(a)(1)(A) of RCRA, 42 U.S.C. § 6972(a)(1)(A), or both. Both the HWA and RCRA provide for the imposition of civil penalties for noncompliance. Section 74-4-12 of the HWA provides that any person who violates any provision of the HWA "may be assessed a civil penalty not to exceed ten thousand dollars ($10,000) for each day during any portion of which a violation occurs." *See also* NMSA 1978, § 74-4-10.A and B. Section 3008(g) of RCRA provides that any person who violates any requirement of RCRA shall be liable for a civil penalty not to exceed $27,500[1] for each such violation. 42 U.S.C. § 6928(g). Both the HWA and RCRA also provide for criminal fines and imprisonment for knowingly omitting material information or making a false statement or representation in any document used for compliance with the HWA or RCRA. NMSA 1978, § 74-4-11.A(3); 42 U.S.C. § 6928(d)(3).

INSTRUCTIONS

The following instructions shall apply to your response to these information requests:

---

1 Although this provision of RCRA on its face provides for a civil penalty not to exceed $25,000, the maximum penalty has been increased to $27,500 to account for inflation pursuant to the Debt Collection Improvement Act of 1996, 31 U.S.C. § 3107 note. 40 C.F.R. § 19.4, Table 1.

1. Provide a separate narrative response to each information request, and to each subpart.

2. Precede each response with the number of the information request to which it responds.

3. In responding to these information requests, every source of information to which DOE or UC has access shall be consulted, regardless of whether the source is in the immediate possession or control of DOE or UC. All documents or other information in the possession of experts, consultants, attorneys, or agents shall be consulted.

4. If any information request cannot be fully responded to, as full a response as is possible shall be provided. The response shall state the reason for the inability to respond fully, and provide any available information, knowledge, or belief regarding the portion not responded to.

5. If information that is not known or not available as of the date of the submission of a response to these information requests subsequently becomes known or available, the response must be supplemented to include such newly found or available information. Moreover, if any information in a response is subsequently found to be false or inaccurate, the response must be supplemented to correct the falsity or inaccuracy.

6. If information requested herein has already been supplied to NMED, for example, in response to the November 20, 2000 "Request for Additional Information" attached to the administrative completeness determination, your response may reference that submission in lieu of a duplicative submission, provided that the referenced submission satisfies these instructions.

7. The information requested in Requests #1 through #17, inclusive, shall be submitted to NMED within sixty (60) days of your receipt of this letter. The information requested in #18, #19, #22, and #23 shall be submitted within fifteen (15) days of your receipt of this letter. The identification of persons and documents requested in Requests #20 and #21 shall be submitted with the corresponding responses to the other requests.

8. Responses shall be submitted to:

Carl Will
LANL Permits Project Leader
New Mexico Environment Department
Hazardous Waste Bureau
2044-A Galisteo Street
Santa Fe, New Mexico 87505

DEFINITIONS

Terms used in these information requests shall have the following definitions:

1. Except as otherwise specifically provided herein, any terms defined in section 74-4-3 of the HWA, section 1004 of RCRA, 42 U.S.C. § 6903, or the hazardous waste regulations at 40 C.F.R. § 260.10, have the meanings provided therein.

2. The term "document" means any object that records, stores, or presents information, and includes writings, memoranda, records, charts, tables, computer printouts, data, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory, or storage device, or in hard copy, including any form or format of these.

3. The term "hazardous waste" has the meaning provided in section 1004(5) of RCRA, 42 U.S.C. § 6903(5).

4. The term "Site" means any solid waste management unit, area of concern, "potential release site," or other place or area where hazardous wastes or hazardous constituents have come to be located as specifically listed in Attachment 1 hereto.

5. The terms "and" and "or" shall be construed either disjunctively or conjunctively as necessary to make the request inclusive rather than exclusive.

6. Words in the singular shall be construed in the plural, and vice versa as necessary to make the request inclusive rather than exclusive.

INFORMATION REQUESTS

NMED hereby requests that DOE and UC jointly furnish to NMED the following information relating to the LANL Facility:

1. Please identify each radionuclide waste or waste stream, including mixed and non-mixed wastes, that is currently or has been at any time generated, treated, stored, disposed of, otherwise managed at, or transported to the LANL Facility, and that meets the statutory definition of "hazardous waste" in section 1004(5) of RCRA, 42 U.S.C. § 6903(5). (Please note that the statutory definition is broader than the regulatory definition.)

2. Please identify each radionuclide waste or waste stream, including mixed and non-mixed wastes, that is currently or has been at any time generated, treated, stored, disposed of, otherwise managed at, or transported to the LANL Facility, and that meets the following criteria: **a)** LANL claims the waste to be exempt from regulation as a solid waste under section 1004(27) of RCRA, 42 U.S.C. § 6903(27), because such waste meets the definition of source, special nuclear, or by-product material as defined by the Atomic Energy Act, 42 U.S.C. §§ 2011 *et seq.*; and **b)** the waste would meet the statutory definition of "hazardous waste" in section 1004(5) of RCRA, 42 U.S.C. § 6903(5), but for such exemption.

3. For each waste and waste stream identified in response to Request #1 and #2, please provide a detailed description of the radioactive, chemical, and physical properties of the waste. Include in your response a description of all radionuclides, all radioactive decay chains, and the half-lives of both the radionuclides and their daughter products.

4. For each waste and waste stream identified in response to Request #1 and #2, please state whether or not the waste exhibits any of the characteristics of a hazardous waste under 40 C.F.R. pt. 261, subpt. C:

   a. Ignitability under 40 C.F.R. § 261.21;

   b. Corrosivity under 40 C.F.R. § 261.22;

   c. Reactivity under 40 C.F.R. § 261.23;

   d. Toxicity under 40 C.F.R. § 261.24.

5. For each waste and waste stream identified in response to Request #1 and #2, please state whether or not the waste contains any hazardous constituents listed under 40 C.F.R. pt. 261, Appendix VIII and name the specific constituent or constituents.

6. For each waste and waste stream identified in response to Request #1 and #2, please provide a detailed description of the generation of the waste, including the location of its generation, the date of its generation, the process or processes by which it was generated, and the volume of waste that was generated.

7. For each waste and waste stream identified in response to Request #1 and #2 that was transported to the LANL Facility from elsewhere, please state the origin of the waste, the volume of the waste transported to the LANL Facility, broken down by shipment if possible, and the date or dates the waste was received at the LANL Facility.

8. For each waste and waste stream identified in response to Request #1 and #2 that was treated at the LANL Facility, please provide a detailed description of the treatment, including the method or process of treatment, the effectiveness of the treatment in reducing the hazardous properties of the waste, and the volume of waste treated.

9. For each waste and waste stream identified in response to Request #1 and #2 that was stored at the LANL Facility, please state the location of such storage at the LANL Facility, the method of storage, the volume of waste stored, and the dates during which each volume of such waste was stored at each such location.

10. For each waste and waste stream identified in response to Request #1 and #2 that was disposed of at the LANL Facility, please provide a detailed description of the disposal, including the method of disposal, the location of disposal, the dates of disposal, and the volume of waste disposed of at each such location.

11. For each waste and waste stream identified in response to Request #2, please state the basis for LANL's claim that the waste is exempt from regulation as a solid waste under RCRA because such waste is source, special nuclear, or by-product material as defined by the Atomic Energy Act.

12. For each Site listed in Part 1 of Attachment A, please identify each waste or waste stream that is currently or has been at any time disposed of at the Site.

13. For each waste and waste stream identified in response to Request #12, please provide a detailed description of the radioactive, chemical, and physical properties of the waste. Include in your response a description of all radionuclides, all radioactive decay chains, and the half-lives of both the radionuclides and their daughter products.

14. For each waste and waste stream identified in response to Request #12, please state whether or not the waste is a listed hazardous waste under 40 C.F.R. pt. 261, subpt. D and indicate the specific listing or listings.

15. For each waste and waste stream identified in response to Request #12, please state whether or not the waste meets any of the characteristics of a hazardous waste under 40 C.F.R. pt. 261, subpt. C:

    a. Ignitability under 40 C.F.R. § 261.21;

    b. Corrosivity under 40 C.F.R. § 261.22;

    c. Reactivity under 40 C.F.R. § 261.23;

    d. Toxicity under 40 C.F.R. § 261.24.

16. For each waste and waste stream identified in response to Request #12, please state whether or not the waste contains any hazardous constituents listed under 40 C.F.R. pt. 261, Appendix VIII and name the specific constituent or constituents.

17. For each waste and waste stream identified in response to Request #12, please provide a detailed description of the disposal, including the method of disposal, the location of disposal, the dates of disposal, and the volume of waste disposed of at each such location.

18. For each Site listed in Part 1 of Attachment A, please submit all analytical data in LANL's possession that has not been previously submitted to NMED. Include data that was obtained under a RCRA Facility Investigation for the Site and for which an RFI Report has not been submitted to NMED. Submit the data in compliance with the format and content requirements set forth in Part 2 of Attachment A.

19. Please submit a detailed description of Material Disposal Area "S" (MDA-S), a Site listed in Part 1 of Attachment A. Include in the Site description the following information:

    a. The purpose for which the Site was created;

    b. A description of Site operations;

    c. The dates of operation of the Site;

d. A list of all materials, including solid waste, disposed of or otherwise placed at the Site, both above and below the ground surface, and their quantities and locations;

e. A list of all high explosives ("HE") disposed of or otherwise placed at the Site, both above and below the ground surface, stating the type of HE, the original quantity of HE, the number of tubes containing HE, the volume of each tube, and the quantity of HE originally in each tube;

f. The frequency of inspection of the Site, including the inspection of HE tubes;

g. The results of each inspection, including reports on the integrity of HE tubes;

h. A statement or conclusion as to whether water can infiltrate the hardware cloth tops of the HE tubes, and the basis of such statement or conclusion;

i. An identification of each and every person responsible for operation of the Site, by name, title or job description, employer, and current or last known address;

j. A description of any known or suspected release of hazardous waste or hazardous constituents from the Site, including releases from mesh screen bottoms;

k. Any other present or future threats to human health or the environment posed by the Site;

l. Any and all data collected since the beginning of the Site study.

20. For each Request #1 through #19, inclusive, identify each and every person who provided information that was used to prepare the response. Identify each such person by name, title or job description, employer, and current or last known address.

21. For each Request #1 through #19, inclusive, identify each and every document that provided information that was used to prepare your response. Identify each such document by type of document, title or description, author, and date.

22. Please submit the document in which the MDA-S experiment is described, entitled "Effect of Soil and Weather on the Decomposition of Explosives," LASL Report, LA-4943.

23. Please submit the schedule of Environmental Restoration activities contained in the "FY2000 Environmental Restoration (ER) Project Lifecycle Baseline Requirements Document."

Thank you for your cooperation in this matter. If you have any questions please contact Carl Will of my staff at 505-827-1557, extension 1031.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: G. Lewis, NMED W&WMD
J. Kieling, NMED HWB
J. Young, NMED HWB
C. Will, NMED HWB
P. Allen, NMED HWB
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB
J. Davis, NMED SWQB
M. Leavitt, NMED GWQB
C. de Saillan, NMED OGC
D. Neleigh, EPA 6PD-N
J. Vozella, DOE LAAO, MS A316
G. Turner, DOE LAAO, MS A316
J. Canepa, LANL EM/ER, MS M992
M. Kirsch, LANL EM/ER, MS M992
D. McInroy, LANL EM/ER, MS M992
D. Erickson, LANL ESH-DO, MS K491
J. Ellvinger, LANL ESH-19, MS K490
G. Bacigalupa, LANL, ESH-19, MS K490

Tracking: Reading, Red File 2000

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 5, 2002

Dr. John C. Browne
Director
Los Alamos National Laboratory
P. O. Box 1663, MS A100
Los Alamos, NM 87545

Mr. Ralph Erickson
Area Manager
Office of Los Alamos Site Operations
Department of Energy
528 35th Street, MS A316
Los Alamos, NM 87544

SUBJECT: DETERMINATION OF INCOMPLETENESS FOR:

1) **CLOSURE/POST-CLOSURE PLAN FOR TA 54-AREA G LANDFILL (PIT 29 AND SHAFT 124), APRIL 2002;**
2) **CLOSURE/POST-CLOSURE PLAN FOR THE TECHNICAL AREA 54 AREA L LANDFILL (SHAFTS 1, 13-17, AND 19-34 AND IMPOUNDMENTS B AND D), APRIL 2002;**
3) **COMPLIANCE DEMONSTRATION WITH 40 CFR, SUBPARTS F AND G UNDER CORRECTIVE ACTION PROCEDURES FOR MATERIAL DISPOSAL AREA H AT TECHNICAL AREA 54, APRIL 2002**

LOS ALAMOS NATIONAL LABORATORY EPA ID# NM0890010515
HWB-LANL-99-050

Dear Dr. Browne and Mr. Erickson:

The New Mexico Environment Department (NMED) has reviewed the above-referenced Closure and Post-Closure Plans (April 2002 Plans) submitted to NMED on April 26, 2002, by Los Alamos National Laboratory and the U.S. Department of Energy (Permittees) and has determined that the Plans are incomplete.

Exhibit D
to Amended Complaint
Civ. No. 02-637 MV/DJS

By letter dated December 21, 2001, NMED notified Permittees that previously submitted Closure Plans and Post-Closure Plans for Technical Area (TA) 54 are also incomplete. The December 21 letter specified that the earlier Plans' deficiencies include: 1) their coverage of only portions of MDA's G, H, and L; and 2) their failure to demonstrate compliance with groundwater monitoring requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100). NMED requested that Permittees submit closure and post-closure plans addressing these deficiencies.

The April 2002 Plans, submitted in response to NMED's December 21 letter, are unresponsive to NMED's request and do not address the deficiencies identified in the December 21 letter.

In the December 21 letter, NMED requested that Permittees submit closure and post-closure plans covering each of MDA's G, H, and L as a whole. The April 2002 Plans address only 35 out of the approximately 316 disposal shafts, pits, and trenches at MDA's G, H, and L. As explained in the December 21 letter, the 316 shafts, pits, and trenches are not separate landfills. Releases of hazardous constituents and source, special nuclear, and by-product materials from individual shafts, pits, and trenches cannot be investigated and remediated separately. Installation of Resource Conservation and Recovery Act (RCRA) covers on only 35 out of the 316 shafts, pits, and trenches, as proposed in the April 2002 Plans, would not be protective of human health and the environment.

Because MDA's G, H, and L are each one landfill, MDA's G, H, and L are each one regulated unit, as defined at 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.90(a)(2)), and are not commingled solid waste management units (SWMU's) and regulated units. NMED does not approve the application of alternative standards under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)) to MDA's G, H, and L. As stated in the December 21 letter, all closure and post-closure requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G) must be complied with at MDA's G, H, and L. Additionally, Corrective Measures Study (CMS) Reports and Corrective Measures Implementation Reports are not enforceable documents allowed in lieu of closure and post-closure plans, under 20.4.1.900 NMAC (incorporating 40 C.F.R. §§ 270.1(c)(7)), as Permittees assert in the April 2002 Plans.

Also as explained in the December 21 letter, hazardous waste was disposed of at MDA's G, H, and L after July 26, 1982, and therefore each MDA is subject to the specific groundwater monitoring requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100). Groundwater monitoring in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100) for MDA's G, H, and L is mandatory.

For MDA H only, because of a prior agreement outlined in a letter from NMED to Permittees, dated December 27, 2000, NMED specified in its December 21 letter that compliance with 40

C.F.R. Part 264, Subparts F and G, requirements may be demonstrated under 40 C.F.R. § 264.101 corrective action procedures, such as RCRA Facility Investigation Reports and CMS Reports. Closure and post-closure plans for MDA H must demonstrate that the substantive requirements of Subparts F and G are met.

Compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100 and Subpart G) closure, post-closure, and groundwater monitoring requirements at MDA's G, H, and L is mandatory. The April 2002 Plans describe compliance as a possible future alternative. Groundwater monitoring is proposed by Permittees as an alternative to be implemented in the future if appropriate. The sampling well locations, sampling frequency, hazardous constituents, and concentration limits, all required under 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100) are not specified. The compliance point is said to be "the boundary of [an unspecified] Aggregate 2." Based on maps submitted previously by Permittees, Aggregate 2 does not include MDA H and therefore does not encompass the whole TA-54 waste management area.

For these reasons and the reasons explained in the December 21 letter regarding the earlier Plans, the April 2002 Plans fail to demonstrate that all closure, post-closure, and groundwater monitoring requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.91 through 100 and Part 264, Subpart G) will be met for MDA's G, H, and L. The April 2002 Plans are therefore incomplete.

The RCRA hazardous waste management permit for Los Alamos National Laboratory cannot be issued without complete closure and post-closure plans for TA-54. Failure on the part of Permittees to submit adequate plans may significantly delay issuance of the permit and may result in enforcement action by NMED for violations, including but not limited to, failure by Permittees to submit a complete RCRA permit application.

If you have any questions or need additional information please contact Carl Will of my staff at 505-428-2542.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc:	G. Lewis, NMED W&WMD	P. Allen, NMED HWB
	J. Kieling, NMED HWB	C. de Saillan, NMED OGC
	D. Cobrain, NMED HWB	A. Ortiz, NMED OGC
	J. Young, NMED HWB	L. King, EPA Region 6 (6PD-N)
	C. Will, NMED HWB	J. Ellvinger, LANL ESH-19, MS K490
	L. Winn, NMED HWB	G. Bacigalupa, LANL ESH-19, MS K490
	S. Gabaldon, NMED HWB	G. Turner, DOE LAAO, MS A316

file: LANL Permit

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

GARY E. JOHNSON
GOVERNOR

JOHN R. D'ANTONIO, JR.
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 21, 2002

Dr. John Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

Mr. Ralph Erickson, Area Manager
Department of Energy-Los Alamos Area Office
528 35th Street, Mail Stop A316
Los Alamos, New Mexico 87544

RE: REQUEST FOR INFORMATION REGARDING ACCELERATOR PRODUCED RADIOACTIVE MATERIAL PURSUANT TO THE NEW MEXICO HAZARDOUS WASTE ACT AND THE RESOURCE CONSERVATION AND RECOVERY ACT
LOS ALAMOS NATIONAL LABORATORY, NM0890010515

Dear Dr. Browne and Mr. Erickson:

The New Mexico Environment Department ("NMED") is in the process of renewing the RCRA hazardous waste management Permit ("Permit"), including corrective action requirements, for the Los Alamos National Laboratory facility ("LANL Facility") pursuant to the New Mexico Hazardous Waste Act ("HWA"), NMSA 1978, §§ 74-4-1 to 74-4-14, and the federal Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6901 to 6992k. NMED requests information regarding the source, composition, nature, and quantity of accelerator produced radioactive materials that are or have been generated, treated, stored, disposed of, or otherwise managed at, or transported to, the LANL Facility. Inquiry into the nature, origin, estimated volumes and locations of the final disposition of the wastes at the LANL Facility will facilitate NMED's evaluation of permit renewal, appropriate corrective action measures, and compliance with the permit.

Los Alamos National Laboratory ("LANL") is a national laboratory owned and operated by the United States Department of Energy ("DOE"), and DOE is an agency of the United States. LANL is also operated by the University of California ("UC"). Each of these entities, DOE and

Exhibit E
to Amended Complaint
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UC (collectively the permittees), is a person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes within the meaning of the HWA and RCRA. NMSA 1978, § 74-4-3.K; 42 U.S.C. § 6903(15).

Section 74-4-4.3.A(1) of the HWA provides that "[f]or the purposes of taking any corrective action or enforcing the provisions of the [HWA], . . . upon request of [NMED] any person who generates, stores, treats, transports, disposes of or otherwise handles or has handled hazardous wastes shall furnish information relating to such hazardous wastes." Likewise, section 3007(a) of RCRA provides that "[f]or purposes of enforcing the provisions of [RCRA], any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of . . . any duly designated officer, employee, or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes." 42 U.S.C. § 6927(a).

Furthermore, Condition I.D.7 of the Hazardous Waste Facility Permit for LANL (No. NM0890010515), as modified, provides that LANL must furnish to NMED "any relevant information which NMED may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit."

In accordance with these provisions, compliance with this information request by the permittees is mandatory. Failure to respond fully and truthfully to this information request within the time specified herein, or adequately justify such failure to respond, may result in an enforcement action by NMED pursuant to section 74-4-10 of the HWA, or section 7002(a)(1)(A) of RCRA, 42 U.S.C. § 6972(a)(1)(A), or both. Both the HWA and RCRA provide for the imposition of civil penalties for noncompliance. Section 74-4-12 of the HWA provides that any person who violates any provision of the HWA "may be assessed a civil penalty not to exceed ten thousand dollars ($10,000) for each day during any portion of which a violation occurs." *See also* NMSA 1978, § 74-4-10.A and B. Section 3008(g) of RCRA provides that any person who violates any requirement of RCRA shall be liable for a civil penalty not to exceed $27,500 per day for each such violation. 42 U.S.C. § 6928(g). Both the HWA and RCRA also provide for criminal fines and imprisonment for knowingly omitting material information or making a false statement or representation in any document used for compliance with the HWA or RCRA. NMSA 1978, § 74-4-11.A(3); 42 U.S.C. § 6928(d)(3).

INSTRUCTIONS

The following instructions shall apply to your response to these information requests:

1. Provide a separate narrative response to each information request, and to each subpart.

2. Precede each response to an information request with the number of the information request to which it responds. Precede each response to a subpart of an information request with the letter of the subpart to which it responds.

3. In responding to the information requests, every source of information to which DOE or UC has access shall be consulted, regardless of whether the source is in the immediate possession or control of DOE or UC. All documents or other information in the possession of experts, consultants, attorneys, or agents shall be consulted.

4. If any information request cannot be fully responded to, as full a response as is possible shall be provided. The response shall state the reason for the inability to respond fully, and provide any available information, knowledge, or belief regarding the portion not responded to.

5. If information that is not known or not available as of the date of the submission of a response to these information requests subsequently becomes known or available, the response must be supplemented to include such newly found or available information. Moreover, if any information in a response is subsequently found to be false or inaccurate, the response must be supplemented to correct the falsity or inaccuracy.

6. If information requested herein has already been supplied to NMED your response may reference that submission in lieu of a duplicative submission, provided that the referenced submission satisfies these instructions.

7. Unless otherwise specified, these information requests cover the period from 1943 until the present.

8. The information requested in Requests #1 through #15, inclusive, shall be submitted to NMED no later than September 23, 2002.

9. Responses shall be submitted to:

   James Bearzi
   Chief
   New Mexico Environment Department
   Hazardous Waste Bureau
   2905 Rodeo Park Drive East
   Building 1
   Santa Fe, New Mexico 87505-6303

DEFINITIONS

Terms used in these information requests shall have the following definitions:

1. Except as otherwise specifically provided herein, any terms defined in section 74-4-3 of the HWA, section 1004 of RCRA, 42 U.S.C. § 6903, or the hazardous waste regulations at 40 C.F.R. § 260.10, have the meanings provided therein.

2. The term "accelerator produced radioactive material" means any material made radioactive by exposing the material to the radiation from a particle accelerator (e.g., Cockcroft-Walton, Betatron, Cylcotron, or other accelerator types).

3. The term "document" means any object that records, stores, or presents information, and includes without limitation all writings, letters, memoranda, electronic mail (email), records, charts, tables, computer printouts, data, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory, or storage device, or in hard copy, including any form or format of these.

4. The term "hazardous waste" has the meaning provided in section 1004(5) of RCRA, 42 U.S.C. § 6903(5), and section 74-4-3.I of the HWA.

5. The term "mixed waste" means waste that contains both hazardous waste and source, special nuclear, or by-product material regulated under the Atomic Energy Act of 1954.

6. The term "site" means any solid waste management unit, area of concern, area of contamination, "potential release site," or other place or area where wastes or hazardous constituents have come to be located.

7. The terms "and" and "or" shall be construed either disjunctively or conjunctively as necessary to make the request inclusive rather than exclusive.

8. Words in the singular shall be construed in the plural, and vice versa as necessary to make the request inclusive rather than exclusive.

INFORMATION REQUESTS

NMED hereby requests that DOE and UC jointly furnish to NMED the following information relating to the LANL Facility:

1. Identify and describe each particle accelerator that has operated or is currently in operation at the LANL Facility. Include in your response, at a minimum, the following information:

   a) A description of the accelerator, including the type of accelerator, its manufacturer, model number, and rating;

   b) All building designation (i.e., structure identifiers);

   b) The dates during which the accelerator was operated;

   c) The location at which the accelerator operated; and a Facility map(s) depicting such locations.

2. For each particle accelerator identified in response to Request #1, please describe the chemical composition of each target used at that accelerator.

3. For each target described in response to Request #2, please provide a description of all radionuclides produced from the irradiation of the target by the particle accelerator. Include in your response the half-lives and daughter products of each such radionuclide.

4. For each particle accelerator identified in response to Request #1, please provide a detailed description of each solid or hazardous waste, hazardous waste constituent, mixed waste, or radioactive waste generated by or associated with the operation of the accelerator, including targets that have been discarded. Include in your response, at a minimum, the following information:

   a) A description of the radioactive, chemical, and physical properties of each such waste;

   b) An identification of any hazardous waste characteristics in each such waste, *i.e.*, ignitability under 40 C.F.R. § 261.21; corrosivity under 40 C.F.R. § 261.22; reactivity under 40 C.F.R. § 261.23; or toxicity under 40 C.F.R. § 261.24;

   c) An identification of any hazardous constituents in each such waste;

   d) A description of all radionuclides in each such waste, including the radioactive decay chains of the radionuclides, and the half-lives of both the radionuclides and their daughter products;

   e) The dates during which each such waste was generated; and

   f) The quantity of each such waste generated.

5. Except to the extent already described in response to Request #4, please provide a detailed description of each solid or hazardous waste, hazardous waste constituent, mixed waste, or radioactive waste that is "accelerator produced radioactive material," as defined herein, and has been transported to or managed at the LANL Facility. Include in your response, at a minimum, the information requested in Request #4(a) through (f).

6. For each waste identified in response to Request #4 or #5, please describe the generation, treatment, storage, and disposal of such wastes. Include in your response, at a minimum, the following information:

   a) The quantity of each such waste;

   b) A description of the methods used to store each such waste prior to disposal;

c) The location at which each such waste was stored prior to disposal, and provide a Facility map(s) depicting such location(s);

d) A description of any method used to treat each such waste prior to disposal;

e) A description of the methods used to dispose of each such waste, including the disposal of treatment residues; and

f) The location at which such waste was disposed, including an identification of any solid waste management unit, area of concern, area of contamination, or "potential release site," and provide a Facility map(s) depicting such location(s).

7. For each waste or waste stream identified in response to Request #4 or #5 that was or has been discharged through an outfall, please provide the following information:

a) A description of the radioactive, chemical, and physical properties of each such discharge;

b) The volume of each such discharge;

c) The dates during which each such discharge occurred;

d) An identification of any treatment plant(s) and/or treatment processes;

e) The location of each such discharge, including an identification of any designated outfall, and provide a Facility map(s) depicting such location(s); and

f) The method and location of the disposal of any treatment residue, and provide a Facility map(s) depicting such location(s).

8. For each particle accelerator identified in response to Request #1, please identify all permits associated with the accelerator or with wastes generated by or in association with the operation of the accelerator. Include in your response, at a minimum, the following information:

a) The permit number;

b) The program or statute under which the permit was issued; and

c) The dates the permit was in effect.

9. For each particle accelerator identified in response to Request #1, please provide copies of all results of analysis of environmental samples associated with the accelerator, or of wastes generated by or in association with operation of the accelerator, including air, surface water, ground water, soil, sediment, rock, waste, wastewater, influent, effluent, or

treatment residue. Provide a map depicting all environmental sampling locations. Include environmental samples collected down gradient of associated outfalls and disposal areas.

10. Please provide a detailed description and status of the proposed accelerator transmutation of waste project.

11. Please provide a detailed description of each waste proposed for treatment under the accelerator transmutation of waste project. Include in your response, at a minimum, the following information:

    a) A description of the radioactive, chemical, and physical properties of each such waste;

    b) An identification of any hazardous waste characteristics in each such waste, *i.e.*, ignitability under 40 C.F.R. § 261.21; corrosivity under 40 C.F.R. § 261.22; reactivity under 40 C.F.R. § 261.23; or toxicity under 40 C.F.R. § 261.24;

    c) An identification of any hazardous constituents in each such waste;

    d) A description of all radionuclides in each such waste, including the radioactive decay chains of the radionuclides, and the half-lives of both the radionuclides and their daughter products;

    e) The source of each such waste, including whether the radionuclides were reactor produced or accelerator produced;

    f) The quantity of each such waste to be treated;

    g) A list of potential byproduct hazardous, solid, mixed and/or radioactive wastes and residues produced during the treatment process;

    h) The quantity of the resulting waste streams produced as a residue or byproduct of the treatment process; and

    i) The proposed locations of disposal of all waste (including discarded targets) generated by this project.

12. Please identify each person who provided information used in responding to these requests. Provide each person's full name, title, and business address. Indicate the request that the person provided information in response to.

Thank you for your cooperation in this matter. If you have any questions please contact John Young of my staff at (505) 428-2538.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: G. Lewis, NMED W&WMD
D. Cobrain, NMED HWB
J. Kieling, NMED HWB
J. Young, NMED HWB
C. Will, NMED HWB
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB
J. Davis, NMED SWQB
M. Leavitt, NMED GWQB
C. de Saillan, NMED OGC
L. King, EPA 6PD-N
J. Vozella, DOE OLASO, MS A316
E. Trollinger, DOE OLASO, MS A316
G. Turner, DOE OLASO, MS A316
B. Ramsey, LANL RRES-DO, MS J591
D. McInroy, LANL RRES-ER, MS M992
M. Kirsch, LANL RRES-ER, MS M992
D. Erickson, LANL RRES-WQH, MS K491
[redacted]
G. Bacigalupa, LANL RRES-SWRC, MS K490

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