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TITLE XXIX — DEFENSE BASE CLOSURES AND REALIGNMENTS

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DEFENSE BASE CLOSURE AND REALIGNMENT ACT OF 1990 AND RELATED PROVISIONS

(Title XXIX of P.L. 101-510, approved Nov. 5, 1990, 10 U.S.C. 2687 note, as amended through P.L. 103-337)

TITLE XXIX — DEFENSE BASE CLOSURES AND REALIGNMENTS

PART A — Defense Base Closure and Realignment Commission

10 USC 2687 note.

SEC. 2901. SHORT TITLE AND PURPOSE

(a) Short Title. — This part may be cited as the "Defense Base Closure and Realignment Act of 1990".

(b) Purpose. — The purpose of this part is to provide a fair process that will result in the timely closure and realignment of military installations inside the United States.

10 USC 2687 note.

SEC. 2902. THE COMMISSION

(a) Establishment. — There is established an independent commission to be known as the "Defense Base Closure and Realignment Commission".

(b) Duties. — The Commission shall carry out the duties specified for it in this part.

(c) Appointment. — (1)(A) The Commission shall be composed of eight members appointed by the President, by and with the advise and consent of the Senate.

President.

(B) The President shall transmit to the Senate the nominations for appointment to the Commission —

(i) by no later than January 3, 1991, in the case of members of the Commission whose terms will expire at the end of the first session of the 102nd Congress;

(ii) by no later than January 25, 1993, in the case of members of the Commission whose terms will expire at the end of the first session of the 103rd Congress; and

(iii) by no later than January 3, 1995, in the case of members of the Commission whose terms will expire at the end of the first session of the 104th Congress.

(C) If the President does not transmit to Congress the nominations for appointment to the Commission on or before the date specified for 1993 in clause (ii) of subparagraph (B) or for 1995 in clause (iii) of such subparagraph, the process by which military installations may be selected for closure or realignment under this part with respect to that year shall be terminated.

(2) In selecting individuals for nominations for appointments to the Commission, the President should consult with —

(A) the Speaker of the House of Representatives concerning the appointment of two members;

(B) the majority leader of the Senate concerning the appointment of two members;

pay payable for level III of the Executive Schedule under section 5314 of title 5, United States Code.

(2) Members shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

(h) Director of Staff. — (1) The Commission shall, without regard to section 5311(b) of title 5, United States Code, appoint a Director who has not served on active duty in the Armed Forces or as a civilian employee of the Department of Defense during the one-year period preceding the date of such appointment.

(2) The Director shall be paid at the rate of basic pay payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

(i) Staff. — (1) Subject to paragraphs (2) and (3), the Director, with the approval of the Commission, may appoint and fix the pay of additional personnel.

(2) The Director may make such appointments without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and any personnel so appointed may be paid without regard to the provisions of chapter 51 and subchapter III of chapter 53 of that title [sections 5101 et seq. and 5331 et seq., respectively, of Title 5] relating to classification and General Schedule pay rates, except that an individual so appointed may not receive pay in excess of the annual rate of basic pay payable for GS-18 of the General Schedule.

(3)(A) Not more than one-third of the personnel employed by or detailed to the Commission may be on detail from the Department of Defense.

(B)(i) Not more than one-fifth of the professional analysts of the Commission staff may be persons detailed from the Department of Defense to the Commission.

(ii) No person detailed from the Department of Defense to the Commission may be assigned as the lead professional analyst with respect to a military department or defense agency.

(C) A person may not be detailed from the Department of Defense to the Commission if, within 12 months before the detail is to begin, that person participated personally and substantially in any matter within the Department of Defense concerning the preparation of recommendations for closures or realignments of military installations.

(D) No member of the Armed Forces, and no officer or employee of the Department of Defense, may —

(i) prepare any report concerning the effectiveness, fitness, or efficiency of the performance on the staff of the Commission of any person detailed from the Department of Defense to that staff;

(ii) review the preparation of such a report; or

(iii) approve or disapprove such a report.

(4) Upon request of the Director, the head of any Federal department or agency may detail any of the personnel of that department or agency to the

(2) Such plan shall include, without any reference (directly or indirectly) to military installations inside the United States that may be closed or realigned under such plan —

(A) a description of the assessment referred to in paragraph (1);

(B) a description (i) of the anticipated force-structure during and at the end of each such period for each military department (with specifications of the number and type of units in the active and reserve forces of each such department), and (ii) of the units that will need to be forward based (with a justification thereof) during and at the end of each such period; and

(C) a description of the anticipated implementation of such force-structure plan.

(3) The Secretary shall also transmit a copy of each such force-structure plan to the Commission.

Federal Register, publication.

(b) Selection Criteria. — (1) The Secretary shall, by no later than, December 31, 1990, publish in the Federal Register and transmit to the congressional defense committees the criteria proposed to be used by the Department of Defense in making recommendations for the closure or realignment of military installations inside the United States under this part. The Secretary shall provide an opportunity for public comment on the proposed criteria for a period of at least 30 days and shall include notice of that opportunity in the publication required under the preceding sentence.

Federal Register, publication.

(2)(A) The Secretary shall, by no later than February 15, 1991, publish in the Federal Register and transmit to the congressional defense committees the final criteria to be used in making recommendations for the closure or realignment of military installations inside the United States under this part. Except as provided in subparagraph (B), such criteria shall be the final criteria to be used, along with the force-structure plan referred to in subsection (a), in making such recommendations unless disapproved by a joint resolution of Congress enacted on or before March 15, 1991.

(B) The Secretary may amend such criteria, but such amendments may not become effective until they have been published in the Federal Register, opened to public comment for at least 30 days, and then transmitted to the congressional defense committees in final form by no later than January 15 of the year concerned. Such amended criteria shall be the final criteria to be used, along with the force-structure plan referred to in subsection (a), in making such recommendations unless disapproved by a joint resolution of Congress enacted on or before February 15 of the year concerned.

Federal Register, publication.

(c) DoD Recommendations. — (1) The Secretary may, by no later than April 15, 1991, March 15, 1993 and *March 1, 1995*, publish in the Federal Register and transmit to the congressional defense committees and to the Commission a list of the military installations inside the United States that the Secretary recommends for closure or realignment on the basis of the force-structure plan and the final criteria referred to in subsection (b)(2) that are applicable to the year concerned.

which the Secretary of each military department shall prescribe for personnel within that military department, or regulations which the head of each Defense Agency shall prescribe for personnel within that Defense Agency.

(6) Any information provided to the Commission by a person described in paragraph (5)(B) shall also be submitted to the Senate and the House of Representatives to be made available to the Members of the House concerned in accordance with the rules of that House. The information shall be submitted to the Senate and the House of Representatives within 24 hours after the submission of the information to the Commission.

Public information.

(d) Review and Recommendations by the Commission. — (1) After receiving the recommendations from the Secretary pursuant to subsection (c) for any year, the Commission shall conduct public hearings on the recommendations. *All testimony before the Commission at a public hearing conducted under this paragraph shall be presented under oath.*

Reports.

(2)(A) The Commission shall, by no later than July 1 of each year in which the Secretary transmits recommendations to it pursuant to subsection (c), transmit to the President a report containing the Commission's findings and conclusions based on a review and analysis of the recommendations made by the Secretary, together with the Commission's recommendations for closures and realignments of military installations inside the United States.

(B) Subject to subparagraph (C), in making its recommendations, the Commission may make changes in any of the recommendations made by the Secretary if the Commission determines that the Secretary deviated substantially from the force-structure plan and final criteria referred to in subsection (c)(1) in making recommendations.

(C) In the case of a change described in subparagraph (D) in the recommendations made by the Secretary, the Commission may make the change only if the Commission —

(i) makes the determination required by subparagraph (B);

(ii) determines that the change is consistent with the force-structure plan and final criteria referred to in subsection (c)(1);

(iii) publishes a notice of the proposed change in the Federal Register not less than *45 days* before transmitting its recommendations to the President pursuant to paragraph (2); and

(iv) conducts public hearings on the proposed change.

(D) Subparagraph (C) shall apply to a change by the Commission in the Secretary's recommendations that would —

(i) add a military installation to the list of military installations recommended by the Secretary for closure;

(ii) add a military installation to the list of military installations recommended by the Secretary for realignment; or

(iii) increase the extent of a realignment of a particular military installation recommended by the Secretary.

(3) The Commission shall explain and justify in its report submitted to the President pursuant to paragraph (2) any recommendation made by the

10 USC 2687 note.

SEC. 2904. CLOSURE AND REALIGNMENT OF MILITARY INSTALLATIONS

(a) In General. — Subject to subsection (b), the Secretary shall —

(1) close all military installations recommended for closure by the Commission in each report transmitted to the Congress by the President pursuant to section 2903(e);

(2) realign all military installations recommended for realignment by such Commission in each such report;

(3) initiate all such closures and realignments no later than two years after the date on which the President transmits a report to the Congress pursuant to section 2903(e) containing the recommendations for such closures or realignments; and

(4) complete all such closures and realignments no later than the end of the six-year period beginning on the date on which the President transmits the report pursuant to section 2903(e) containing the recommendations for such closures or realignments.

(b) Congressional Disapproval. — (1) The Secretary may not carry out any closure or realignment recommended by the Commission in a report transmitted from the President pursuant to section 2903(e) if a joint resolution is enacted, in accordance with the provisions of section 2908, disapproving such recommendations of the Commission before the earlier of —

(A) the end of the 45-day period beginning on the date on which the President transmits such report; or

(B) the adjournment of Congress sine die for the session during which such report is transmitted.

(2) For purposes of paragraph (1) of this subsection and subsections (a) and (c) of section 2908, the days on which either House of Congress is not in session because of adjournment of more than three days to a day certain shall be excluded in the computation of a period.

10 USC 2687 note.

SEC. 2905. IMPLEMENTATION

(a) In General. — (1) In closing or realigning any military installation under this part, the Secretary may —

(A) take such actions as may be necessary to close or realign any military installation, including the acquisition of such land, the construction of such replacement facilities, the performance of such activities, and the conduct of such advance planning and design as may be required to transfer functions from a military installation being closed or realigned to another military installation, and may use for such purpose funds in the Account or funds appropriated to the Department of Defense for use in planning and design, minor construction, or operation and maintenance;

Community action programs.

(B) provide —

(i) economic adjustment assistance to any community located near a military installation being closed or realigned, and

disposal of surplus property under the Federal Property and Administrative Services Act of 1949; and

(ii) all regulations in effect on the date of the enactment of this Act governing the conveyance and disposal of property under section 13(g) of the Surplus Property Act of 1944 [50 U.S.C. App. 1622(g)].

(B) The Secretary, after consulting with the Administrator of General Services, may issue regulations that are necessary to carry out the delegation of authority required by paragraph (1).

(C) The authority required to be delegated by paragraph (1) to the Secretary by the Administrator of General Services shall not include the authority to prescribe general policies and methods for utilizing excess property and disposing of surplus property.

(D) The Secretary of Defense may transfer real property or facilities located at a military installation to be closed or realigned under this part, with or without reimbursement, to a military department or other entity (including a nonappropriated fund instrumentality) within the Department of Defense or the Coast Guard.

(E) Before any action may be taken with respect to the disposal of any surplus real property or facility located at any military installation to be closed or realigned under this part, the Secretary of Defense shall consult with the Governor of the State and the heads of the local governments concerned for the purpose of considering any plan for the use of such property by the local community concerned.

(3)(A) Not later than 6 months after the date of approval of the closure of a military installation under this part, the Secretary, in consultation with the redevelopment authority with respect to the installation, shall —

(i) inventory the personal property located at the installation; and

(ii) identify the items (or categories of items) of such personal property that the Secretary determines to be related to real property and anticipates will support the implementation of the redevelopment plan with respect to the installation.

(B) If no redevelopment authority referred to in subparagraph (A) exists with respect to an installation, the Secretary shall consult with —

(i) the local government in whose jurisdiction the installation is wholly located; or

(ii) a local government agency or State government agency designated for the purpose of such consultation by the chief executive officer of the State in which the installation is located.

(C)(i) Except as provided in subparagraphs (E) and (F), the Secretary may not carry out any of the activities referred to in clause (ii) with respect to an installation referred to in that clause until the earlier of —

(I) one week after the date on which the redevelopment plan for the installation is submitted to the Secretary;

(II) the date on which the redevelopment authority notifies the Secretary that it will not submit such a plan;

consideration may include consideration in kind (including goods and services), real property and improvements, or such other consideration as the Secretary considers appropriate. The Secretary shall determine the estimated fair market value of the property to be transferred under this subparagraph before carrying out such transfer.

(II) The Secretary shall prescribe regulations that set forth guidelines for determining the amount, if any, of consideration required for a transfer under this paragraph. Such regulations shall include a requirement that, in the case of each transfer under this paragraph for consideration below the estimated fair market value of the property transferred, the Secretary provide an explanation why the transfer is not for the estimated fair market value of the property transferred [including an explanation why the transfer cannot be carried out in accordance with the authority provided to the Secretary pursuant to paragraph (1) or (2)].

(ii) The transfer of property under subparagraph (A) shall be without consideration in the case of any installation located in a rural area whose closure under this part will have a substantial adverse impact (as determined by the Secretary) on the economy of the communities in the vicinity of the installation and on the prospect for the economic recovery of such communities from such closure. The Secretary shall prescribe in the regulations under clause (i)(II) the manner of determining whether communities are eligible for the transfer of property under this clause.

(iii) In the case of a transfer under subparagraph (A) for consideration below the fair market value of the property transferred, the Secretary may recoup from the transferee of such property such portion as the Secretary determines appropriate of the amount, if any, by which the sale or lease of such property by such transferee exceeds the amount of consideration paid to the Secretary for such property by such transferee. The Secretary shall prescribe regulations for determining the amount of recoupment under this clause.

(C)(i) The transfer of personal property under subparagraph (A) shall not be subject to the provisions of sections 202 and 203 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 483, 484) if the Secretary determines that the transfer of such property is necessary for the effective implementation of a redevelopment plan with respect to the installation at which such property is located.

(ii) The Secretary may, in lieu of the transfer of property referred to in subparagraph (A), transfer property similar to such property (including property not located at the installation) if the Secretary determines that the transfer of such similar property is in the interest of the United States.

(D) The provisions of section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. 9620 (h)] shall apply to any transfer of real property under this paragraph.

(iv) make available with respect to each building and property the information referred to in section 501(c)(1)(C) of such Act in accordance with such section 501(c)(1)(C).

(D) Any buildings and property included in a list published under subparagraph (C)(iii) shall be treated as property available for application for use to assist the homeless under section 501(d) of such Act.

(E) The Secretary of Defense shall make available in accordance with section 501(f) of such Act any buildings or property referred to in subparagraph (D) for which —

(i) a written notice of an intent to use such buildings or property to assist the homeless is received by the Secretary of Health and Human Services in accordance with section 501(d)(2) of such Act;

(ii) an application for use of such buildings or property for such purpose is submitted to the Secretary of Health and Human Services in accordance with section 501(e)(2) of such Act; and

(iii) the Secretary of Health and Human Services —

(I) completes all actions on the application in accordance with section 501(e)(3) of such Act; and

(II) approves the application under section 501(e) of such Act..

(F)(i) Subject to clause (ii), a redevelopment authority may express in writing an interest in using buildings and property referred to in subparagraph (D), or use such buildings and property, in accordance with the redevelopment plan with respect to the installation at which such buildings and property are located as follows:

(I) If no written notice of an intent to use such buildings or property to assist the homeless is received by the Secretary of Health and Human Services in accordance with section 501(d)(2) of such Act during the 60-day period beginning on the date of the publication of the buildings and property under subparagraph (C)(iii).

(II) In the case of buildings and property for which such notice is so received, if no completed application for use of the buildings or property for such purpose is received by the Secretary of Health and Human Services in accordance with section 501(e)(2) of such Act during the 90-day period beginning on the date of the receipt of such notice.

(III) In the case of building(s) and property for which such application is so received, if the Secretary of Health and Human Services rejects the application under section 501(e) of such Act.

(ii) Buildings and property shall be available only for the purpose of permitting a redevelopment authority to express in writing an interest in the use of such buildings and property, or to use such buildings and property, under clause (i) as follows:

(I) In the case of buildings and property referred to in clause (i)(I), during the one-year period beginning on the first day after the 60-day period referred to in that clause.

(B) In applying the provisions of the National Environmental Policy Act of 1969 to the processes referred to in subparagraph (A), the Secretary of Defense and the Secretary of the military departments concerned shall not have to consider —

(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission;

(ii) he need for transferring functions to any military installation which has been selected as the receiving installation; or

(iii) military installations alternative to those recommended or selected.

(3) A civil action for judicial review, with respect to any requirement of the National Environmental Policy Act of 1969 to the extent such Act is applicable under paragraph (2), of any act or failure to act by the Department of Defense during the closing, realigning, or relocating of functions referred to in clauses (i) and (ii) of paragraph (2)(A), may not be brought more than 60 days after the date of such act or failure to act.

(d) Waiver. — The Secretary of Defense may close or realign military installations under this part without regard to —

(1) any provision of law restricting the use of funds for closing or realigning military installations included in any appropriations or authorization Act; and

(2) sections 2662 and 2687 of title 10, United States Code.

(e) Transfer Authority in Connection with Payment of Environmental Remediation Costs. — *(1)(A) Subject to paragraph (2) of this subsection and section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. 9620(h)], the Secretary may enter into an agreement to transfer by deed real property or facilities referred to in subparagraph (B) with any person who agrees to perform all environmental restoration, waste management, and environmental compliance activities that are required for the property or facilities under Federal and State laws, administrative decisions, agreements (including schedules and milestones), and concurrences.*

(B) The real property and facilities referred to in subparagraph (A) are the real property and facilities located at an installation closed or to be closed under this part that are available exclusively for the use, or expression of an interest in a use, of a redevelopment authority under subsection (b)(6)(F) during the period provided for that use, or expression of interest in use, under that subsection.

(C) The Secretary may require any additional terms and conditions in connection with an agreement authorized by subparagraph (A) as the Secretary considers appropriate to protect the interests of the United States.

(2) A transfer of real property or facilities may be made under paragraph (1) only if the Secretary certifies to Congress that —

(A) the costs of all environmental restoration, waste management, and environmental compliance activities to be paid by the recipient of the property

(b) Use of Funds. — *(1) The Secretary may use the funds in the Account only for the purposes described in section 2905 or, after September 30, 1995, for environmental restoration and property management and disposal at installations closed or realigned under title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526: 10 U.S.C. 2687 note).*

(2) When a decision is made to use funds in the Account to carry out a construction project under section 2905(a) and the cost of the project will exceed the maximum amount authorized by law for a minor military construction project, the Secretary shall notify in writing the congressional defense committees of the nature of, and justification for, the project and the amount of expenditures for such project. Any such construction project may be carried out without regard to section 2802(a) of title 10, United States Code.

(c) Reports. — (1)*(A)* No later than 60 days after the end of each fiscal year in which the Secretary carries out activities under this part, the Secretary shall transmit a report to the congressional defense committees of the amount and nature of the deposits into, and the expenditures from, the Account during such fiscal year and of the amount and nature of other expenditures made pursuant to section 2905(a) during such fiscal year.

(B) The report for a fiscal year shall include the following:

(i) The obligations and expenditures from the Account during the fiscal year, identified by subaccount, for each military department and Defense Agency.

(ii) The fiscal year in which appropriations for such expenditures were made and the fiscal year in which funds were obligated for such expenditures.

(iii) Each military construction project for which such obligations and expenditures were made, identified by installation and project title.

(iv) A description and explanation of the extent, if any, to which expenditures for military construction projects for the fiscal year differed from proposals for projects and funding levels that were included in the justification transmitted to Congress under section 2907(1), or otherwise, for the funding proposals for the Account for such fiscal year, including an explanation of—

(I) any failure to carry out military construction projects that were so proposed; and

(II) any expenditures for military construction projects that were not so proposed.

(2) Unobligated funds which remain in the Account *after the termination of the authority of the Secretary to carry out a closure or realignment under this part* shall be held in the Account until transferred by law after the congressional defense committees receive the report transmitted under paragraph (3).

10 USC 2687 note.

SEC. 2907. REPORTS

As part of the budget request for fiscal year 1993 and for each fiscal year thereafter for the Department of Defense, the Secretary shall transmit to the congressional defense committees of Congress —

(1) a schedule of the closure and realignment actions to be carried out under this part in the fiscal year for which the request is made and an estimate of the total expenditures required and cost savings to be achieved by each such closure and realignment and of the time period in which these savings are to be achieved in each case, together with the Secretary's assessment of the environmental effects of such actions; and

(2) a description of the military installations, including those under construction and those planned for construction, to which functions are to be transferred as a result of such closures and realignments, together with the Secretary's assessment of the environmental effects of such transfers.

10 USC 2687 note.

SEC. 2908. CONGRESSIONAL CONSIDERATION OF COMMISSION REPORT

(a) Terms of the Resolution. — For purposes of section 2904(b), the term "joint resolution" means only a joint resolution which is introduced within the 10-day period beginning on the date on which the President transmits the report to the Congress under section 2903(e), and —

(1) which does not have a preamble;

(2) the matter after the resolving clause of which is as follows: "That Congress disapproves the recommendations of the Defense Base Closure and Realignment Commission as submitted by the President on ____", the blank space being filled in with the appropriate date; and

(3) the title of which is as follows: "Joint resolution disapproving the recommendations of the Defense Base Closure and Realignment Commission.".

(b) Referral. — A resolution described in subsection (a) that is introduced in the House of Representatives shall be referred to the Committee on Armed Services of the House of Representatives. A resolution described in subsection (a) introduced in the Senate shall be referred to the Committee on Armed Services of the Senate.

(c) Discharge. — If the committee to which a resolution described in subsection (a) is referred has not reported such a resolution (or an identical resolution) by the end of the 20-day period beginning on the date on which the President transmits the report to the Congress under section 2903(e), such committee shall be, at the end of such period, discharged from further consideration of such resolution, and such resolution shall be placed on the appropriate calendar of the House involved.

(d) Consideration. — (1) On or after the third day after the date on which the committee to which such a resolution is referred has reported, or has been

(ii) the vote on final passage shall be on the resolution of the other House.

(2) Upon disposition of the resolution received from the other House, it shall no longer be in order to consider the resolution that originated in the receiving House.

(f) Rules of the Senate and House. — This section is enacted by Congress —

(1) as an exercise of the rulemaking power of the Senate and House of Representatives, respectively, and as such it is deemed a part of the rules of each House, respectively, but applicable only with respect to the procedure to be followed in that House in the case of a resolution described in subsection (a), and it supersedes other rules only to the extent that it its inconsistent with such rules; and

(2) with full recognition of the constitutional right of either House to change the rules (so far as relating to the procedure of that House) at any time, in the same manner, and to the same extent as in the case of any other rule of that House.

10 USC 2687 note.

SEC. 2909. RESTRICTION ON OTHER BASE CLOSURE AUTHORITY

(a) In General. — Except as provided in subsection (c), during the period beginning on the date of the enactment of this Act [Nov. 5, 1990] and ending on December 31, 1995, this part shall be the exclusive authority for selecting for closure or realignment, or for carrying out any closure or realignment of, a military installation inside the United States.

(b) Restriction. — Except as provided in subsection (c), none of the funds available to the Department of Defense may be used, other than under this part, during the period specified in subsection (a) —

(1) to identify, through any transmittal to the Congress or through any other public announcement or notification, any military installation inside the United States as an installation to be closed or realigned or as an installation under consideration for closure or realignment; or

(2) to carry out any closure or realignment of a military installation inside the United States.

(c) Exception. — Nothing in this part affects the authority of the Secretary to carry out —

(1) closures and realignments under title II of Public Law 100-526; and

(2) closures and realignments to which section 2687 of title 10, United States Code, is not applicable, including closures and realignments carried out for reasons of national security or a military emergency referred to in subsection (c) of such section.

PART B — Other Provisions Relating to Defense Base Closures and Realignments

10 USC 2687 note.

SEC. 2921. CLOSURE OF FOREIGN MILITARY INSTALLATIONS

(a) Sense of Congress. — It is the sense of the Congress that —

(1) the termination of military operations by the United States at military installations outside the United States should be accomplished at the discretion of the Secretary of Defense at the earliest opportunity;

(2) in providing for such termination, the Secretary of Defense should take steps to ensure that the United States receives, through direct payment or otherwise, consideration equal to the fair market value of the improvements made by the United States at facilities that will be released to host countries;

(3) the Secretary of Defense, acting through the military component commands or the sub-unified commands to the combatant commands, should be the lead official in negotiations relating to determining and receiving such consideration; and

(4) the determination of the fair market value of such improvements released to host countries in whole or in part by the United States should be handled on a facility-by-facility basis.

(b) Residual Value. — (1) For each installation outside the United States at which military operations were being carried out by the United States on October 1, 1990, the Secretary of Defense shall transmit, by no later than June 1, 1991, an estimate of the fair market value, as of January 1, 1991, of the improvements made by the United States at facilities at each such installation.

(2) For purposes of this section:

(A) The term "fair market value of the improvements" means the value of improvements determined by the Secretary on the basis of their highest use.

(B) The term "improvements" includes new construction of facilities and all additions, improvements, modifications, or renovations made to existing facilities or to real property, without regard to whether they were carried out with appropriated or nonappropriated funds.

(c) Establishment of Special Account. — (1) There is established on the books of the Treasury a special account to be known as the "Department of Defense Overseas Military Facility Investment Recovery Account". Except as provided in subsection (d), amounts paid to the United States, pursuant to any treaty, status of forces agreement, or other international agreement to which the United States is a party, for the residual value of real property or improvements to real property used by civilian or military personnel of the Department of Defense shall be deposited into such account.

(2) Money deposited in the Department of Defense Overseas Military Facility Investment Recovery Account shall be available to the Secretary of

Account during the preceding fiscal year and proposed uses of funds in the special account during the next fiscal year. The report shall include the following:

(1) The amount of each deposit in the account during the preceding fiscal year, and the source of the amount.

(2) The balance in the account at the end of that fiscal year.

(3) The amounts expended from the account by each military department during that fiscal year.

(4) With respect to each military installation for which money was deposited in the account as a result of the release of real property or improvements of the installation to a host country during that fiscal year —

(A) the total amount of the investment of the United States in the installation, expressed in terms of constant dollars of that fiscal year;

(B) the depreciated value (as determined by the Secretary of a military department under regulations to be prescribed by the Secretary of Defense) of the real property and improvements that were released; and

(C) the explanation of the Secretary for any difference between the benefits received by the United States for the real property and improvements and the depreciated value (as so determined) of that real property and improvements.

(5) A list identifying all military installations outside the United States for which the Secretary proposes to make expenditures from the Department of Defense Overseas Facility Investment Recovery Account under subsection (c)(2)(B) during the next fiscal year and specifying the amount of the proposed expenditures for each identified military installation.

(6) A description of the purposes for which the expenditures proposed under paragraph (5) will be made and the need for such expenditures.

SEC. 2922. MODIFICATION OF THE CONTENT OF BIANNUAL REPORT OF THE COMMISSION ON ALTERNATIVE UTILIZATION OF MILITARY FACILITIES

(a) Uses of Facilities. — Section 2819(b) of the National Defense Authorization Act, Fiscal Year 1989 (Public Law 100-456; 102 Stat. 2119; 10 U.S.C. 2391 note) is amended —

(1) in paragraph (2), by striking out "minimum security facilities for nonviolent prisoners" and inserting in lieu thereof "Federal confinement or correctional facilities including shock incarceration facilities";

(2) by striking out "and" at the end of paragraph (3);

(3) by redesignating paragraph (4) as paragraph (5); and

(4) by inserting after paragraph (3) the following new paragraph (4):

(2) There is hereby established an environmental response task force to make the findings and recommendations, and to prepare the report, required by paragraph (1). The task force shall consist of the following (or their designees):

(A) The Secretary of Defense, who shall be chairman of the task force.

(B) The Attorney General.

(C) The Administrator of the General Services Administration.

(D) The Administrator of the Environmental Protection Agency.

(E) The Chief of Engineers, Department of the Army.

(F) A representative of a State environmental protection agency, appointed by the head of the National Governors Association.

(G) A representative of a State Attorney general's office, appointed by the head of the National Association of Attorney Generals.

(H) A representative of a public-interest environmental organization, appointed by the Speaker of the House of Representatives.

10 USC 2687 note.

SEC. 2924. COMMUNITY PREFERENCE CONSIDERATION IN CLOSURE AND REALIGNMENT OF MILITARY INSTALLATIONS

In any process of selecting any military installation inside the United States for closure or realignment, the Secretary of Defense shall take such steps as are necessary to assure that special consideration and emphasis is given to any official statement from a unit of general local government adjacent to or within a military installation requesting the closure or realignment of such installation.

SEC. 2925. RECOMMENDATIONS OF THE BASE CLOSURE COMMISSION

(a) Norton Air Force Base. — (1) Consistent with the recommendations of the Commission on Base Realignment and Closure, the Secretary of the Air Force may not relocate, until after September 30, 1995, any of the functions that were being carried out at the ballistics missile office at Norton Air Force Base, California, on the date on which the Secretary of Defense transmitted a report to the Committees on Armed Services of the Senate and House of Representatives as described in section 202(a)(1) of Public Law 100-526.

(2) This subsection shall take effect as of the date on which the report referred to in subsection (a) was transmitted to such Committees.

(b) General Directive. — Consistent with the requirements of section 201 of Public Law 100-526, the Secretary of Defense shall direct each of the Secretaries of the military departments to take all actions necessary to carry out the recommendations of the Commission on Base Realignment and Closure and to take no action that is inconsistent with such recommendations.

authorizations or approvals of the response action by appropriate Federal, State, or local agencies.

(B) To the maximum extent possible, provisions offered by single prime contractors to perform all phases of the response action, using performance specifications supplied by the Secretary of Defense and including any safeguards the Secretary deems essential to avoid conflict of interest.

(4) Evaluate bids on the basis of price and other evaluation criteria.

(5) Subject to the availability of authorized and appropriated funds to the Department of Defense, make contract awards for response action within 120 days after the solicitation of proposals pursuant to paragraph (3) for the response action, or within 120 days after receipt of the necessary authorizations or approvals of the response action by appropriate Federal, State, or local agencies, whichever is later.

(e) Application of Section 120 of CERCLA. — Activities of the model program shall be carried out subject to, and in a manner consistent with, section 120 (relating to Federal facilities) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620).

(f) Expedited Agreements. — The Secretary shall, with the concurrence of the Administrator of the Environmental Protection Agency, assure compliance with all applicable Federal statutes and regulations and, in addition, take all reasonable and appropriate measures to expedite all necessary administrative decisions, agreements, and concurrences.

(g) Report. — The Secretary of Defense shall include a description of the progress made during the preceding fiscal year in implementing and accomplishing the goals of this section within the annual report to Congress required by section 2706 of title 10, United States Code.

(h) Applicability of Existing Law. — Nothing in this section affects or modifies, in any way, the obligations or liability of any person under other Federal or State law, including common law, with respect to the disposal or release of hazardous substances or pollutants or contaminants as defined under section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601).

Section 2687, Title 10, United States Code

§ 2687. Base closures and realignments

(a) Not withstanding any other provisions of law, no action may be taken to effect or implement—

(1) the closure of any military installation at which at least 300 civilian personnel are authorized to be employed;

(2) any realignment with respect to any installation referred to in paragraph (1) involving a reduction by more than 1,000, or by more than 50 percent, in the number of civilian personnel authorized to be employed at such military installation at the time the Secretary of Defense or the Secretary of the military department concerned notifies the Congress under subsection (b) of the Secretary's plan to close or realign such installation; or

(3) any construction, conversion, or rehabilitation at any military facility other than a military installation referred to in clause (1) or (2) which will or may be required as a result of the relocation of civilian personnel to such facility by reason of any closure or realignment to which clause (1) or (2) applies,

unless and until the provisions of subsection (b) are complied with.

(b) No action described in subsection (a) with respect to the closure of, or a realignment with respect to, any military installation referred to in such subsection may be taken unless and until—

(1) the Secretary of Defense or the Secretary of the military department concerned notifies the Committees on Armed Services of the Senate and House of Representatives, as part of an annual request for authorization of appropriations to such Committees, of the proposed closing or realignment and submits with the notification an evaluation of the fiscal, local economic, budgetary, environmental, strategic, and operational consequences of such closure or realignment; and

(2) a period of 30 legislative days or 60 calendar days, whichever is longer, expires following the day on which the notice and evaluation referred to in clause (1) have been submitted to such committees, during which period no irrevocable action may be taken to effect or implement the decision.

(c) This section shall not apply to the closure of a military installation, or a realignment with respect to a military installation, if the President certifies to the Congress that such closure or realignment must be implemented for reasons of national security or a military emergency.

(d)(1) After the expiration of the period of time provided for in subsection (b)(2) with respect to the closure or realignment of a military installation, funds which would otherwise be available to the Secretary to effect the closure or realignment of that installation may be used by him for such purpose.

(2) Nothing in this section restricts the authority of the Secretary to obtain architectural and engineering services under section 2807 of this title.

(e) In this section:

(1) The term "military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Department of Defense, including any leased facility, which is located within any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, or Guam. Such term does not include any facility used primarily for civil works, rivers and harbors projects, or flood control projects.

(2) The term "civilian personnel" means direct-hire, permanent civilian employees of the Department of Defense.

(3) The term "realignment" includes any action which both reduces and relocates functions and civilian personnel positions, but does not include a reduction in force resulting from workload adjustments, reduced personnel or funding levels, skill imbalances, or other similar causes.

(4) The term "legislative day" means a day on which either House of Congress is in session.

(As amended Pub.L. 98-525, Title XIV, § 1405(41), Oct. 19, 1984, 98 Stat. 2624; Pub.L. 99-145, Title XII, § 1202(a), Nov. 8, 1985, 99 Stat. 717; Pub.L. 100-180, Div. A, Title XII, § 1231(17), Dec. 4, 1987, 101 Stat. 1161; Pub.L. 101-510, Div. A, Title XXIX, § 2911, Nov. 5, 1990, 104 Stat. 1819.)

Document Separator

Defense Base Closure and Realignment Act of 1990
(P.L. 101-510)

Enacted November 5, 1990

As amended by the National Defense Authorization Acts for Fiscal Years 1992/1993 (P.L. 102-311), 1993 (P.L. 102-484), 1994 (P.L. 103-160), and 1995 (P.L. 103-337), and the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (P.L. 103-421)

[The last two sets of amendments are indicated by revision marks.]

TITLE XXIX—DEFENSE BASE CLOSURES AND REALIGNMENTS

PART A—DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

SEC. 2901. SHORT TITLE AND PURPOSE

(a) SHORT TITLE.—This part may be cited as the "Defense Base Closure and Realignment Act of 1990".

(b) PURPOSE.—The purpose of this part is to provide a fair process that will result in the timely closure and realignment of military installations inside the United States.

SEC. 2902. THE COMMISSION

(a) ESTABLISHMENT.—There is established an independent commission to be known as the "Defense Base Closure and Realignment Commission".

(b) DUTIES.—The Commission shall carry out the duties specified for it in this part.

(c) APPOINTMENT.—(1)(A) The Commission shall be composed of eight members appointed by the President, by and with the advise and consent of the Senate.

(B) The President shall transmit to the Senate the nominations for appointment to the Commission—

(i) by no later than January 3, 1991, in the case of members of the Commission whose terms will expire at the end of the first session of the 102nd Congress;

(ii) by no later than January 25, 1993, in the case of members of the Commission whose terms will expire at the end of the first session of the 103rd Congress; and

(iii) by no later than January 3, 1995, in the case of members of the Commission whose terms will expire at the end of the first session of the 104th Congress.

(C) If the President does not transmit to Congress the nominations for appointment to the Commission on or before the date specified for 1993 in clause (ii) of subparagraph (B) or for 1995 in clause (iii) of such subparagraph, the process by which military installations may be selected for closure or realignment under this part with respect to that year shall be terminated.

(2) In selecting individuals for nominations for appointments to the Commission, the President should consult with—

(A) the Speaker of the House of Representatives concerning the appointment of two members;

(B) the majority leader of the Senate concerning the appointment of two members;

(C) the minority leader of the House of Representatives concerning the appointment of one member; and

(D) the minority leader of the Senate concerning the appointment of one member.

(3) At the time the President nominates individuals for appointment to the Commission for each session of Congress referred to in paragraph (1)(B), the President shall designate one such individual who shall serve as Chairman of the Commission.

(d) TERMS.—(1) Except as provided in paragraph (2), each member of the Commission shall serve until the adjournment of Congress sine die for the session during which the member was appointed to the Commission.

(2) The Chairman of the Commission shall serve until the confirmation of a successor.

(e) MEETINGS.—(1) The Commission shall meet only during calendar years 1991, 1993, and 1995.

(2)(A) Each meeting of the Commission, other than meetings in which classified information is to be discussed, shall be open to the public.

(B) All the proceedings, information, and deliberations of the Commission shall be open, upon request, to the following:

(i) The Chairman and the ranking minority party member of the Subcommittee on Readiness, Sustainability, and Support of the Committee on Armed Services of the Senate, or such other members of the Subcommittee designated by such Chairman or ranking minority party member.

(ii) The Chairman and the ranking minority party member of the Subcommittee on Military Installations and Facilities of the Committee on Armed Services of the House of Representatives, or such other members of the Subcommittee designated by such Chairman or ranking minority party member.

(iii) The Chairmen and ranking minority party members of the Subcommittees on Military Construction of the Committees on Appropriations of the Senate and of the House of Representatives, or such other members of the Subcommittees designated by such Chairmen or ranking minority party members.

(f) VACANCIES.—A vacancy in the Commission shall be filled in the same manner as the original appointment, but the individual appointed to fill the vacancy shall serve only for the unexpired portion of the term for which the individual's predecessor was appointed.

(g) PAY AND TRAVEL EXPENSES.—(1)(A) Each member, other than the Chairman, shall be paid at a rate equal to the daily equivalent of the minimum annual rate of basic pay payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code, for each day (including travel time) during which the member is engaged in the actual performance of duties vested in the Commission.

(B) The Chairman shall be paid for each day referred to in subparagraph (A) at a rate equal to the daily equivalent of the minimum annual rate of basic pay payable for level III of the Executive Schedule under section 5314, of title 5, United States Code.

(2) Members shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

(h) DIRECTOR OF STAFF.—(1) The Commission shall, without regard to section 5311(b) of title 5, United States Code, appoint a Director who has not served on active duty in the Armed Forces or as a civilian employee of the Department of Defense during the one-year period preceding the date of such appointment.

(2) The Director shall be paid at the rate of basic pay payable for level IV of the Executive Schedule under section 5315 of title 5, United States Code.

(i) STAFF.—(1) Subject to paragraphs (2) and (3), the Director, with the approval of the Commission, may appoint and fix the pay of additional personnel.

(2) The Director may make such appointments without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and any personnel so appointed may be paid without regard to the provisions of chapter 51 and subchapter III of chapter 53 of that title relating to classification and General Schedule pay rates, except that an individual so appointed may not receive pay in excess of the annual rate of basic pay payable for GS-18 of the General Schedule.

(3)(A) Not more than one-third of the personnel employed by or detailed to the Commission may be on detail from the Department of Defense.

(B)(i) Not more than one-fifth of the professional analysts of the Commission staff may be persons detailed from the Department of Defense to the Commission.

(ii) No person detailed from the Department of Defense to the Commission may be assigned as the lead professional analyst with respect to a military department or defense agency.

(C) A person may not be detailed from the Department of Defense to the Commission if, within 12 months before the detail is to begin, that person participated personally and substantially in any matter within the Department of Defense concerning the preparation of recommendations for closures or realignments of military installations.

(D) No member of the Armed Forces, and no officer or employee of the Department of Defense, may—

(i) prepare any report concerning the effectiveness, fitness, or efficiency of the performance on the staff of the Commission of any person detailed from the Department of Defense to that staff;

(ii) review the preparation of such a report; or

(iii) approve or disapprove such a report.

(4) Upon request of the Director, the head of any Federal department or agency may detail any of the personnel of that department or agency to the Commission to assist the Commission in carrying out its duties under this part.

(5) The Comptroller General of the United States shall provide assistance, including the detailing of employees, to the Commission in accordance with an agreement entered into with the Commission.

(6) The following restrictions relating to the personnel of the Commission shall apply during 1992 and 1994:

(A) There may not be more than 15 persons on the staff at any one time.

(B) The staff may perform only such functions as are necessary to prepare for the transition to new membership on the Commission in the following year.

(C) No member of the Armed Forces and no employee of the Department of Defense may serve on the staff.

(j) OTHER AUTHORITY.—(1) The Commission may procure by contract, to the extent funds are available, the temporary or intermittent services of experts or consultants pursuant to section 3109 of title 5, United States Code.

(2) The Commission may lease space and acquire personal property to the extent funds are available.

(k) FUNDING.—(1) There are authorized to be appropriated to the Commission such funds as are necessary to carry out its duties under this part. Such funds shall remain available until expended.

(2) If no funds are appropriated to the Commission by the end of the second session of the 101st Congress, the Secretary of Defense may transfer, for fiscal year 1991, to the Commission funds from the Department of Defense Base Closure Account established by section 207 of Public Law 100-526. Such funds shall remain available until expended.

(l) TERMINATION.—The Commission shall terminate on December 31, 1995.

(m) PROHIBITION AGAINST RESTRICTING COMMUNICATIONS.—Section 1034 of title 10, United States Code, shall apply with respect to communications with the Commission.

SEC. 2903. PROCEDURE FOR MAKING RECOMMENDATIONS FOR BASE CLOSURES AND REALIGNMENTS

(a) FORCE-STRUCTURE PLAN.—(1) As part of the budget justification documents submitted to Congress in support of the budget for the Department of Defense for each of the fiscal years 1992, 1994, and 1996, the Secretary shall include a force-structure plan for

the Armed Forces based on an assessment by the Secretary of the probable threats to the national security during the six-year period beginning with the fiscal year for which the budget request is made and of the anticipated levels of funding that will be available for national defense purposes during such period.

(2) Such plan shall include, without any reference (directly or indirectly) to military installations inside the United States that may be closed or realigned under such plan—

(A) a description of the assessment referred to in paragraph (1);

(B) a description (i) of the anticipated force structure during and at the end of such period for each military department (with specifications of the number and type of units in the active and reserve forces of each such department), and (ii) of the units that will need to be forward based (with a justification thereof) during and at the end of each such period; and

(C) a description of the anticipated implementation of such force-structure plan.

(3) The Secretary shall also transmit a copy of each such force-structure plan to the Commission.

(b) SELECTION CRITERIA.—(1) The Secretary shall, by no later than December 31, 1990, publish in the *Federal Register* and transmit to the congressional defense committees the criteria proposed to be used by the Department of Defense in making recommendations for the closure or realignment of military installations inside the United States under this part. The Secretary shall provide an opportunity for public comment on the proposed criteria for a period of at least 30 days and shall include notice of that opportunity in the publication required under the preceding sentence.

(2)(A) The Secretary shall, by no later than February 15, 1991, publish in the *Federal Register* and transmit to the congressional defense committees the final criteria to be used in making recommendations for the closure or realignment of military installations inside the United States under this part. Except as provided in subparagraph (B), such criteria shall be the final criteria to be used, making such recommendations unless disapproved by a joint resolution of Congress enacted on or before March 1991.

(B) The Secretary may amend such criteria, but such amendments may not become effective until they have been published in the *Federal Register*, opened to public comment for at least 30 days, and then transmitted to the congressional defense committees in final form by no later than January 15 of the year concerned. Such amended criteria shall be the final criteria to be used, along with the force-structure plan referred to in subsection (a), in making such recommendations unless disapproved by a joint resolution of Congress enacted on or before February 15 of the year concerned.

(c) DOD RECOMMENDATIONS.—(1) The Secretary may, by no later than April 15, 1991, March 15, 1993 and March 1, 1995, publish in the *Federal Register* and transmit to the congressional defense committees and to the Commission a list of the military installations inside the United States that the Secretary recommends for closure or realignment on the basis of the force-structure plan and the final criteria referred to in subsection (b)(2) that are applicable to the year concerned.

(2) The Secretary shall include, with the list of recommendations published and transmitted pursuant to paragraph (1), a summary of the selection process that resulted in the recommendation for each installation, including a justification for each recommendation. The Secretary shall transmit the matters referred to in the preceding sentence not later than 7 days after the date of the transmittal to the congressional defense committees and the Commission of the list referred to in paragraph (1).

(3)(A) In considering military installations for closure or realignment, the Secretary shall consider all military installations inside the United States equally without regard to whether the installation has been previously considered or proposed for closure or realignment by the Department.

(B) In considering military installations for closure or realignment, the Secretary may not take into account for any purpose any advance conversion planning undertaken by an affected community with respect to the anticipated closure or realignment of an installation.

(C) For purposes of subparagraph (B), in the case of a community anticipating the economic effects of a closure or realignment of a military installation, advance conversion planning—

(i) shall include community adjustment and economic diversification planning undertaken by the community before an anticipated selection of a military installation in or near the community for closure or realignment; and

(ii) may include the development of contingency redevelopment plans, plans for economic development and diversification, and plans for the joint use (including civilian and military use, public and private use, civilian dual use, and civilian shared use) of the property or facilities of the installation after the anticipated closure or realignment.

(4) In addition to making all information used by the Secretary to prepare the recommendations under this subsection available to Congress (including any committee or member of Congress), the Secretary shall also make such information available to the Commission and the Comptroller General of the United States.

(5)(A) Each person referred to in subparagraph (B), when submitting information to the Secretary of Defense or the Commission concerning the closure or realignment of a military installation, shall certify that such information is accurate and complete to the best of that person's knowledge and belief.

(B) Subparagraph (A) applies to the following persons:

(i) The Secretaries of the military departments.

(ii) The heads of the Defense Agencies.

(iii) Each person who is in a position the duties of which include personal and substantial involvement in the preparation and submission of information and recommendations concerning the closure or realignment of military installations, as designated in regulations which the Secretary of Defense shall prescribe, regulations which the Secretary of each military department shall prescribe for personnel within that military department, or regulations which the head of each Defense Agency shall prescribe for personnel within that Defense Agency.

(6) Any information provided to the Commission by a person described in paragraph (5)(B) shall also be submitted to the Senate and the House ~~or~~ of Representatives to be made available to the Members of the House concerned in accordance with the rules of that House. The information shall be submitted to the Senate and House of Representatives within 24 hours after the submission of the information to the Commission.

(d) REVIEW AND RECOMMENDATIONS BY THE COMMISSION.—(1) After receiving the recommendations from the Secretary pursuant to subsection (c) for any year, the Commission shall conduct public hearings on the recommendations. All testimony before the Commission at a public hearing conducted under this paragraph shall be presented under oath. [*The preceding sentence shall apply with respect to all public hearings conducted by the Defense Base Closure and Realignment Commission after November 30, 1993.*]

(2)(A) The Commission shall, by no later than July 1 of each year in which the Secretary transmits recommendations to it pursuant to subsection (c), transmit to the President a report containing the Commission's findings and conclusions based on a review and analysis of the recommendations made by the Secretary, together with the Commission's recommendations for closures and realignments of military installations inside the United States.

(B) Subject to subparagraph (C), in making its recommendations, the Commission may make changes in any of the recommendations made by the Secretary if the Commission determines that the Secretary deviated substantially from the force-structure plan and final criteria referred to in subsection (c)(1) in making recommendations.

(C) In the case of a change described in subparagraph (D) in the recommendations made by the Secretary, the Commission may make the change only if the Commission—

(i) makes the determination required by subparagraph (B);

(ii) determines that the change is consistent with the force-structure plan and final criteria referred to in subsection (c)(1);

(iii) publishes a notice of the proposed change in the *Federal Register* not less than 45 days before transmitting its recommendations to the President pursuant to paragraph (2); and

(iv) conducts public hearings on the proposed change.

(D) Subparagraph (C) shall apply to a change by the Commission in the Secretary's recommendations that would—

(i) add a military installation to the list of military installations recommended by the Secretary for closure;

(ii) add a military installation to the list of military installations recommended by the Secretary for realignment; or

(iii) increase the extent of a realignment of a particular military installation recommended by the Secretary.

(E) In making recommendations under this paragraph, the Commission may not take into account for any purpose any advance conversion planning undertaken by an affected community with respect to the anticipated closure or realignment of a military installation.

(3) The Commission shall explain and justify in its report submitted to the President pursuant to paragraph (2) any recommendation made by the Commission that is different from the recommendations made by the Secretary pursuant to subsection (c). The Commission shall transmit a copy of such report to the congressional defense committees on the same date on which it transmits its recommendations to the President under paragraph (2).

(4) After July 1 of each year in which the Commission transmits recommendations to the President under this subsection: the Commission shall promptly provide, upon request, to any Member of Congress information used by the Commission in making its recommendations.

(5) The Comptroller General of the United States shall—

(A) assist the Commission, to the extent requested, in the Commission's review and analysis of the recommendations made by the Secretary pursuant to subsection (C); and

(B) by no later than April 15 of each year in which the Secretary makes such recommendations, transmit to the Congress and to the Commission a report containing a detailed analysis of the Secretary's recommendations and selection process.

(e) **Review by the President.**—(1) The President shall, by no later than July 15 of each year in which the Commission makes recommendations under subsection (d), transmit to the Commission and to the Congress a report containing the President's approval or disapproval of the Commission's recommendations.

(2) If the President approves all the recommendations of the Commission, the President shall transmit a copy of such recommendations to the Congress, together with a certification of such approval.

(3) If the President disapproves the recommendations of the Commission, in whole or in part, the President shall transmit to the Commission and the Congress the reasons for that disapproval. The Commission shall then transmit to the President, by no later than August 15 of the year concerned, a revised list of recommendations for the closure and realignment of military installations.

(4) If the President approves all of the revised recommendations of the Commission transmitted to the President under paragraph (3), the President shall transmit a copy of such revised recommendations to the Congress, together with a certification of such approval.

(5) If the President does not transmit to the Congress an approval and certification described in paragraph (2) or (4) by September 1 of any year in which the Commission has transmitted recommendations to the President under this part, the process by which military installations may be selected for closure or realignment under this part with respect to that year shall be terminated.

SEC. 2904. CLOSURE AND REALIGNMENT OF MILITARY INSTALLATIONS

(a) IN GENERAL.—Subject to subsection (b), the Secretary shall—

(1) close all military installations recommended for closure by the Commission in each report transmitted to the Congress by the President pursuant to section 2903(e);

(2) realign all military installations recommended for realignment by such Commission in each such report;

(3) initiate all such closures and realignments no later than two years after the date on which the President transmits a report to the Congress pursuant to section 2903(e) containing the recommendations for such closures or realignments; and

(4) complete all such closures and realignments no later than the end of the six-year period beginning on the date on which the President transmits the report pursuant to section 2903(e) containing the recommendations for such closures or realignments.

(b) CONGRESSIONAL DISAPPROVAL.—(1) The Secretary may not carry out any closure or realignment recommended by the Commission in a report transmitted from the President pursuant to section 2903(e) if a joint resolution is enacted, in accordance with the provisions of section 2908: disapproving such recommendations of the Commission before the earlier of—

(A) the end of the 45-day period beginning on the date on which the President transmits such report; or

(B) the adjournment of Congress sine die for the session during which such report is transmitted.

(2) For purposes of paragraph (1) of this subsection and subsections (a) and (c) of section 2908, the days on which either House of Congress is not in session because of adjournment of more than three days to a day certain shall be excluded in the computation of a period.

SEC. 2905. IMPLEMENTATION

(a) IN GENERAL.—(1) In closing or realigning any military installation under this part, the Secretary may—

(A) take such actions as may be necessary to close or realign any military installation, including the acquisition of such land, the construction of such replacement facilities, the performance of such activities, and the conduct of such advance planning and design as may be required to transfer functions from a military installation being closed or realigned to another military installation, and may use for such purpose funds in the Account or funds appropriated to the Department of Defense for use in planning and design, minor construction, or operation and maintenance;

(B) provide—

(i) economic adjustment assistance to any community located near a military installation being closed or realigned, and

(ii) community planning assistance to any community located near a military installation to which functions will be transferred as a result of the closure or realignment of a military installation, if the Secretary of Defense determines that the financial resources available to the community (by grant or otherwise) for such purposes are inadequate, and may use for such purposes funds in the Account or funds appropriated to the Department of Defense for economic adjustment assistance or community planning assistance;

(C) carry out activities for the purposes of environmental restoration and mitigation at any such installation, and shall use for such purposes funds in the Account. [*Amendments to this subsection took effect on December 5, 1991.*]

(D) provide outplacement assistance to civilian employees employed by the Department of Defense at military installations being closed or realigned, and may use for such purpose funds in the Account or funds appropriated to the Department of Defense for outplacement assistance to employees; and

(E) reimburse other Federal agencies for actions performed at the request of the Secretary with respect to any such closure or realignment, and may use for such purpose funds in the Account or funds appropriated to the Department of Defense and available for such purpose.

(2) In carrying out any closure or realignment under this part, the Secretary shall ensure that environmental restoration of any property made excess to the needs of the Department of Defense as a result of such closure or realignment be carried out as soon as possible with funds available for such purpose.

(b) MANAGEMENT AND DISPOSAL OF PROPERTY.—(1) The Administrator of General Services shall delegate to the Secretary of Defense, with respect to excess and surplus ~~real property and facilities~~ real property, facilities, and personal property located at a military installation closed or realigned under this part—

(A) the authority of the Administrator to utilize excess property under section 202 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 483);

(B) the authority of the Administrator to dispose of surplus property under section 203 of that Act (40 U.S.C. 484);

(C) the authority of the Administrator to grant approvals and make determinations under section 13(g) of the Surplus Property Act of 1944 (50 U.S.C. App. 1622(g)); and

(D) the authority of the Administrator to determine the availability of excess or surplus real property for wildlife conservation purposes in accordance with the Act of May 19, 1948 (16 U.S.C. 667b).

(2)(A) Subject to subparagraph (C) and paragraphs (3), (4), (5), and (6), the Secretary of Defense shall exercise the authority delegated to the Secretary pursuant to paragraph (1) in accordance with—

(i) all regulations in effect on the date of the enactment of this Act governing the utilization of excess property and the disposal of surplus property under the Federal Property and Administrative Services Act of 1949; and

(ii) all regulations in effect on the date of the enactment of this Act governing the conveyance and disposal of property under section 13(g) of the Surplus Property Act of 1944 (50 U.S.C. App. 1622(g)).

(B) The Secretary, after consulting with the Administrator of General Services, may issue regulations that are necessary to carry out the delegation of authority required by paragraph (1).

(C) The authority required to be delegated by paragraph (1) to the Secretary by the Administrator of General Services shall not include the authority to prescribe

general policies and methods for utilizing excess property and disposing of surplus property.

(D) The Secretary of Defense may transfer real property or facilities located at a military installation to be closed or realigned under this part, with or without reimbursement, to a military department or other entity (including a nonappropriated fund instrumentality) within the Department of Defense or the Coast Guard.

(E) Before any action may be taken with respect to the disposal of any surplus real property or facility located at any military installation to be closed or realigned under this part, the Secretary of Defense shall consult with the Governor of the State and the heads of the local governments concerned for the purpose of considering any plan for the use of such property by the local community concerned.

(3)(A) Not later than 6 months after the date of approval of the closure of a military installation under this part, the Secretary, in consultation with the redevelopment authority with respect to the installation, shall—

(i) inventory the personal property located at the installation; and

(ii) identify the items (or categories of items) of such personal property that the Secretary determines to be related to real property and anticipates will support the implementation of the redevelopment plan with respect to the installation.

(B) If no redevelopment authority referred to in subparagraph (A) exists with respect to an installation, the Secretary shall consult with—

(i) the local government in whose jurisdiction the installation is wholly located; or

(ii) a local government agency or State government agency designated for the purpose of such consultation by the chief executive officer of the State in which the installation is located.

(C)(i) Except as provided in subparagraphs (E) and (F), the Secretary may not carry out any of the activities referred to in clause (ii) with respect to an installation referred to in that clause until the earlier of—

(I) one week after the date on which the redevelopment plan for the installation is submitted to the Secretary;

(II) the date on which the redevelopment authority notifies the Secretary that it will not submit such a plan;

(III) twenty-four months after the date of approval of the closure of the installation; or

(IV) ninety days before the date of the closure of the installation.

(ii) The activities referred to in clause (i) are activities relating to the closure of an installation to be closed under this part as follows:

(I) The transfer from the installation of items of personal property at the installation identified in accordance with subparagraph (A).

(II) The reduction in maintenance and repair of facilities or equipment located at the installation below the minimum levels required to support the use of such facilities or equipment for nonmilitary purposes.

(D) Except as provided in paragraph (4), the Secretary may not transfer items of personal property located at an installation to be closed under this part to another installation, or dispose of such items, if such items are identified in the redevelopment plan for the installation as items essential to the reuse or redevelopment of the installation. <u>In connection with the development of the redevelopment plan for the installation, the Secretary shall consult with the entity responsible for developing the redevelopment plan to identify the items of personal property located at the installation, if any, that the entity desires to be retained at the installation for reuse or redevelopment of the installation.</u>

(E) This paragraph shall not apply to any personal property located at an installation to be closed under this part if the property—

(i) is required for the operation of a unit, function, component, weapon, or weapons system at another installation;

(ii) is uniquely military in character, and is likely to have no civilian use (other than use for its material content or as a source of commonly used components);

(iii) is not required for the reutilization or redevelopment of the installation (as jointly determined by the Secretary and the redevelopment authority);

(iv) is stored at the installation for purposes of distribution (including spare parts or stock items); or

(v)(I) meets known requirements of an authorized program of another Federal department or agency for which expenditures for similar property would be necessary, and (II) is the subject of a written request by the head of the department or agency.

(F) Notwithstanding subparagraphs (C)(i) and (D), the Secretary may carry out any activity referred to in subparagraph (C)(ii) or (D) if the Secretary determines that the carrying out of such activity is in the national security interest of the United States.

(4)(A) The Secretary may transfer real property and personal property located at a military installation to be closed under this part to the redevelopment authority with respect to the installation.

(B)(i)(I) Except as provided in clause (ii), the transfer of property under subparagraph (A) may be for consideration at or below the estimated fair market value of the property transferred or without consideration. Such consideration may include consideration in kind (including goods and services), real property and improvements, or such other consideration as the Secretary considers appropriate. The Secretary shall determine the estimated fair market value of the property to be transferred under this subparagraph before carrying out such transfer.

(II) The Secretary shall prescribe regulations that set forth guidelines for determining the amount, if any, of consideration required for a transfer under this paragraph. Such regulations shall include a requirement that, in the case of each transfer under this paragraph for consideration below the estimated fair market value of the property transferred, the Secretary provide an explanation why the transfer is not for the estimated fair market value of the property transferred (including an explanation why the transfer cannot be carried out in accordance with the authority provided to the Secretary pursuant to paragraph (1) or (2)).

(ii) The transfer of property under subparagraph (A) shall be without consideration in the case of any installation located in a rural area whose closure under this part will have a substantial adverse impact (as determined by the Secretary) on the economy of the communities in the vicinity of the installation and on the prospect for the economic recovery of such communities from such closure. The Secretary shall prescribe in the regulations under clause (i)(II) the manner of determining whether communities are eligible for the transfer of property under this clause.

(iii) In the case of a transfer under subparagraph (A) for consideration below the fair market value of the property transferred, the Secretary may recoup from the transferee of such property such portion as the Secretary determines appropriate of the amount, if any, by which the sale or lease of such property by such transferee exceeds the amount of consideration paid to the Secretary for such property by such transferee. The Secretary shall prescribe regulations for determining the amount of recoupment under this clause.

(C)(i) The transfer of personal property under subparagraph (A) shall not be subject to the provisions of sections 202 and 203 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 483, 484) if the Secretary determines that the transfer of such property is necessary for the effective implementation of a

redevelopment plan with respect to the installation at which such property is located.

(ii) The Secretary may, in lieu of the transfer of property referred to in subparagraph (A), transfer property similar to such property (including property not located at the installation) if the Secretary determines that the transfer of such similar property is in the interest of the United States.

(D) The provisions of section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620(h)) shall apply to any transfer of real property under this paragraph.

(E) The Secretary may require any additional terms and conditions in connection with a transfer under this paragraph as such Secretary considers appropriate to protect the interests of the United States.

(5)(A) Except as provided in subparagraph (B), the Secretary shall take such actions as the Secretary determines necessary to ensure that final determinations under ~~subsection (b)(1)~~ paragraph (1) regarding whether another department or agency of the Federal Government has identified a use for any portion of a military installation to be closed under this part, or will accept transfer of any portion of such installation, are made not later than 6 months after the date of approval of closure of that installation.

(B) The Secretary may, in consultation with the redevelopment authority with respect to an installation, postpone making the final determinations referred to in subparagraph (A) with respect to the installation for such period as the Secretary determines appropriate if the Secretary determines that such postponement is in the best interests of the communities affected by the closure of the installation.

(6)(A) Except as provided in this paragraph, nothing in this section shall limit or otherwise affect the application of the provisions of the Stewart B. McKinney Homeless Assistance Act (42 U.S.C. 11301 et seq.) to military installations closed under this part. For procedures relating to the use to assist the homeless of buildings and property at installations closed under this part after the date of the enactment of this sentence, see paragraph (7).

(B)(i) Not later than the date on which the Secretary of Defense completes the determination under paragraph (5) of the transferability of any portion of an installation to be closed under this part, the Secretary shall—

(I) complete any determinations or surveys necessary to determine whether any building or property referred to in clause (ii) is excess property, surplus property, or unutilized or underutilized property for the purpose of the information referred to in section 501(a) of such Act (42 U.S.C. 11411(a)); and

(II) submit to the Secretary of Housing and Urban Development information on any building or property that is so determined.

(ii) The buildings and property referred to in clause (i) are any buildings or property located at an installation referred to in that clause for which no use is identified, or of which no Federal department or agency will accept transfer, pursuant to the determination of transferability referred to in that clause.

(C) Not later than 60 days after the date on which the Secretary of Defense submits information to the Secretary of Housing and Urban Development under subparagraph (B)(ii), the Secretary of Housing and Urban Development shall—

(i) identify the buildings and property described in such information that are suitable for use to assist the homeless;

(ii) notify the Secretary of Defense of the buildings and property that are so identified;

(iii) publish in the *Federal Register* a list of the buildings and property that are so identified, including with respect to each building or property the information referred to in section 501(c)(1)(B) of such Act; and

(iv) make available with respect to each building and property the information referred to in section 501(c)(1)(C) of such Act in accordance with such section 501(c)(1)(C).

(D) Any buildings and property included in a list published under subparagraph (C)(iii) shall be treated as property available for application for use to assist the homeless under section 501(d) of such Act.

(E) The Secretary of Defense shall make available in accordance with section 501(f) of such Act any buildings or property referred to in subparagraph (D) for which—

(i) a written notice of an intent to use such buildings or property to assist the homeless is received by the Secretary of Health and Human Services in accordance with section 501(d)(2) of such Act;

(ii) an application for use of such buildings or property for such purpose is submitted to the Secretary of Health and Human Services in accordance with section 501(e)(2) of such Act; and

(iii) the Secretary of Health and Human Services—

(I) completes all actions on the application in accordance with section 501(e)(3) of such Act; and

(II) approves the application under section 501(e) of such Act.

(F)(i) Subject to clause (ii), a redevelopment authority may express in writing an interest in using buildings and property referred to subparagraph (D), and buildings and property referred to in subparagraph (B)(ii) which have not been identified as suitable for use to assist the homeless under subparagraph (C), or use such buildings and property, in accordance with the redevelopment plan with respect to the installation at which such buildings and property are located as follows:

(I) If no written notice of an intent to use such buildings or property to assist the homeless is received by the Secretary of Health and Human Services in accordance with section 501(d)(2) of such Act during the 60-day period beginning on the date of the publication of the buildings and property under subparagraph (C)(iii).

(II) In the case of buildings and property for which such notice is so received, if no completed application for use of the buildings or property for such purpose is received by the Secretary of Health and Human Services in accordance with section 501(e)(2) of such Act during the 90-day period beginning on the date of the receipt of such notice.

(III) In the case of buildings and property for which such application is so received, if the Secretary of Health and Human Services rejects the application under section 501(e) of such Act.

(ii) Buildings and property shall be available only for the purpose of permitting a redevelopment authority to express in writing an interest in the use of such buildings and property, or to use such buildings and property, under clause (i) as follows:

(I) In the case of buildings and property referred to in clause (i)(I), during the one-year period beginning on the first day after the 60-day period referred to in that clause.

(II) In the case of buildings and property referred to in clause (i)(II), during the one-year period beginning on the first day after the 90-day period referred to in that clause.

(III) In the case of buildings and property referred to in clause (i)(III), during the one-year period beginning on the date of the rejection of the application referred to in that clause.

(iii) A redevelopment authority shall express an interest in the use of buildings and property under this subparagraph by notifying the Secretary of Defense, in writing, of such an interest.

(G)(i) Buildings and property available for a redevelopment authority under subparagraph (F) shall not be available for use to assist the homeless under section 501 of such Act while so available for a redevelopment authority.

(ii) If a redevelopment authority does not express an interest in the use of buildings or property, or commence the use of buildings or property, under subparagraph (F) within the applicable time periods specified in clause (ii) of such subparagraph, such buildings or property shall be treated as property available for use to assist the homeless under section 501(a) of such Act.

(7)(A) Determinations of the use to assist the homeless of buildings and property located at installations approved for closure under this part after the date of the enactment of this paragraph [*October 25, 1994*] shall be determined under this paragraph rather than paragraph (6).

(B)(i) Not later than the date on which the Secretary of Defense completes the final determinations referred to in paragraph (5) relating to the use or transferability of any portion of an installation covered by this paragraph, the Secretary shall—

(I) identify the buildings and property at the installation for which the Department of Defense has a use, for which another department or agency of the Federal Government has identified a use, or of which another department or agency will accept a transfer;

(II) take such actions as are necessary to identify any building or property at the installation not identified under subclause (I) that is excess property or surplus property;

(III) submit to the Secretary of Housing and Urban Development and to the redevelopment authority for the installation (or the chief executive officer of the State in which the installation is located if there is no redevelopment authority for the installation at the completion of the determination described in the stem of this sentence) information on any building or property that is identified under subclause (II); and

(IV) publish in the Federal Register and in a newspaper of general circulation in the communities in the vicinity of the installation information on the buildings and property identified under subclause (II).

(ii) Upon the recognition of a redevelopment authority for an installation covered by this paragraph, the Secretary of Defense shall publish in the Federal Register and in a newspaper of general circulation in the communities in the vicinity of the installation information on the redevelopment authority.

(C)(i) State and local governments, representatives of the homeless, and other interested parties located in the communities in the vicinity of an installation covered by this paragraph shall submit to the redevelopment authority for the installation a notice of the interest, if any, of such governments, representatives, and parties in the buildings or property, or any portion thereof, at the installation that are identified under subparagraph (B)(i)(II). A notice of interest under this clause shall describe the need of the government, representative, or party concerned for the buildings or property covered by the notice.

(ii) The redevelopment authority for an installation shall assist the governments, representatives, and parties referred to in clause (i) in evaluating buildings and property at the installation for purposes of this subparagraph.

(iii) In providing assistance under clause (ii), a redevelopment authority shall—

(I) consult with representatives of the homeless in the communities in the vicinity of the installation concerned; and

(II) undertake outreach efforts to provide information on the buildings and property to representatives of the homeless, and to other persons or entities interested in assisting the homeless, in such communities.

(iv) It is the sense of Congress that redevelopment authorities should begin to conduct outreach efforts under clause (iii)(II) with respect to an installation as soon as is practicable after the date of approval of closure of the installation.

(D)(i) State and local governments, representatives of the homeless, and other interested parties shall submit a notice of interest to a redevelopment authority under subparagraph (C) not later than the date specified for such notice by the redevelopment authority.

(ii) The date specified under clause (i) shall be—

(I) in the case of an installation for which a redevelopment authority has been recognized as of the date of the completion of the determinations referred to in paragraph (5), not earlier than 3 months and not later than 6 months after that date; and

(II) in the case of an installation for which a redevelopment authority is not recognized as of such date, not earlier than 3 months and not later than 6 months after the date of the recognition of a redevelopment authority for the installation.

(iii) Upon specifying a date for an installation under this subparagraph, the redevelopment authority for the installation shall—

(I) publish the date specified in a newspaper of general circulation in the communities in the vicinity of the installation concerned; and

(II) notify the Secretary of Defense of the date.

(E)(i) In submitting to a redevelopment authority under subparagraph (C) a notice of interest in the use of buildings or property at an installation to assist the homeless, a representative of the homeless shall submit the following:

(I) A description of the homeless assistance program that the representative proposes to carry out at the installation.

(II) An assessment of the need for the program.

(III) A description of the extent to which the program is or will be coordinated with other homeless assistance programs in the communities in the vicinity of the installation.

(IV) A description of the buildings and property at the installation that are necessary in order to carry out the program.

(V) A description of the financial plan, the organization, and the organizational capacity of the representative to carry out the program.

(VI) An assessment of the time required in order to commence carrying out the program.

(ii) A redevelopment authority may not release to the public any information submitted to the redevelopment authority under clause (i)(V) without the consent of the representative of the homeless concerned unless such release is authorized under Federal law and under the law of the State and communities in which the installation concerned is located.

(F)(i) The redevelopment authority for each installation covered by this paragraph shall prepare a redevelopment plan for the installation. The redevelopment authority shall, in preparing the plan, consider the interests in the use to assist the homeless of the buildings and property at the installation that are expressed in the notices submitted to the redevelopment authority under subparagraph (C).

(ii)(I) In connection with a redevelopment plan for an installation, a redevelopment authority and representatives of the homeless shall prepare legally binding agreements that provide for the use to assist the homeless of buildings and property, resources, and assistance on or off the installation. The implementation of such agreements shall be contingent upon the approval of the redevelopment plan by the Secretary of Housing and Urban Development under subparagraph (H) or (J).

(II) Agreements under this clause shall provide for the reversion to the redevelopment authority concerned, or to such other entity or entities as the agreements shall provide, of buildings and property that are made available under this paragraph for use to assist the homeless in the event that such buildings and property cease being used for that purpose.

(iii) A redevelopment authority shall provide opportunity for public comment on a redevelopment plan before submission of the plan to the Secretary of Defense and the Secretary of Housing and Urban Development under subparagraph (G).

(iv) A redevelopment authority shall complete preparation of a redevelopment plan for an installation and submit the plan under subparagraph (G) not later than 9 months after the date specified by the redevelopment authority for the installation under subparagraph (D).

(G)(i) Upon completion of a redevelopment plan under subparagraph (F), a redevelopment authority shall submit an application containing the plan to the Secretary of Defense and to the Secretary of Housing and Urban Development.

(ii) A redevelopment authority shall include in an application under clause (i) the following:

(I) A copy of the redevelopment plan, including a summary of any public comments on the plan received by the redevelopment authority under subparagraph (F)(iii).

(II) A copy of each notice of interest of use of buildings and property to assist the homeless that was submitted to the redevelopment authority under subparagraph (C), together with a description of the manner, if any, in which the plan addresses the interest expressed in each such notice and, if the plan does not address such an interest, an explanation why the plan does not address the interest.

(III) A summary of the outreach undertaken by the redevelopment authority under subparagraph (C)(iii)(II) in preparing the plan.

(IV) A statement identifying the representatives of the homeless and the homeless assistance planning boards, if any, with which the redevelopment authority consulted in preparing the plan, and the results of such consultations.

(V) An assessment of the manner in which the redevelopment plan balances the expressed needs of the homeless and the need of the communities in the vicinity of the installation for economic redevelopment and other development.

(VI) Copies of the agreements that the redevelopment authority proposes to enter into under subparagraph (F)(ii).

(H)(i) Not later than 60 days after receiving a redevelopment plan under subparagraph (G), the Secretary of Housing and Urban Development shall complete a review of the plan. The purpose of the review is to determine whether the plan, with respect to the expressed interest and requests of representatives of the homeless—

(I) takes into consideration the size and nature of the homeless population in the communities in the vicinity of the installation, the availability of existing services in such communities to meet the needs of the homeless in such communities, and the suitability of the buildings and property covered by the plan for the use and needs of the homeless in such communities;

(II) takes into consideration any economic impact of the homeless assistance under the plan on the communities in the vicinity of the installation;

(III) balances in an appropriate manner the needs of the communities in the vicinity of the installation for economic redevelopment and other development with the needs of the homeless in such communities;

(IV) was developed in consultation with representatives of the homeless and the homeless assistance planning boards, if any, in the communities in the vicinity of the installation; and

(V) specifies the manner in which buildings and property, resources, and assistance on or off the installation will be made available for homeless assistance purposes.

(ii) It is the sense of Congress that the Secretary of Housing and Urban Development shall, in completing the review of a plan under this subparagraph, take into consideration and be receptive to the predominant views on the plan of the communities in the vicinity of the installation covered by the plan.

(iii) The Secretary of Housing and Urban Development may engage in negotiations and consultations with a redevelopment authority before or during the course of a review under clause (i) with a view toward resolving any preliminary determination of the Secretary that a redevelopment plan does not meet a requirement set forth in that clause. The redevelopment authority may modify the redevelopment plan as a result of such negotiations and consultations.

(iv) Upon completion of a review of a redevelopment plan under clause (i), the Secretary of Housing and Urban Development shall notify the Secretary of Defense and the redevelopment authority concerned of the determination of the Secretary of Housing and Urban Development under that clause.

(v) If the Secretary of Housing and Urban Development determines as a result of such a review that a redevelopment plan does not meet the requirements set forth in clause (i), a notice under clause (iv) shall include—

(I) an explanation of that determination; and

(II) a statement of the actions that the redevelopment authority must undertake in order to address that determination.

(I)(i) Upon receipt of a notice under subparagraph (H)(iv) of a determination that a redevelopment plan does not meet a requirement set forth in subparagraph (H)(i), a redevelopment authority shall have the opportunity to—

(I) revise the plan in order to address the determination; and

(II) submit the revised plan to the Secretary of Housing and Urban Development.

(ii) A redevelopment authority shall submit a revised plan under this subparagraph to the Secretary of Housing and Urban Development, if at all, not later than 90 days after the date on which the redevelopment authority receives the notice referred to in clause (i).

(J)(i) Not later than 30 days after receiving a revised redevelopment plan under subparagraph (I), the Secretary of Housing and Urban Development shall review the revised plan and determine if the plan meets the requirements set forth in subparagraph (H)(i).

(ii) The Secretary of Housing and Urban Development shall notify the Secretary of Defense and the redevelopment authority concerned of the determination of the Secretary of Housing and Urban Development under this subparagraph.

(K) Upon receipt of a notice under subparagraph (H)(vi) or (J)(ii) of the determination of the Secretary of Housing and Urban Development that a redevelopment plan for an installation meets the requirements set forth in subparagraph (H)(i), the Secretary of Defense shall dispose of the buildings and property located at the installation that are identified in the plan as available for use to assist the homeless in accordance with the provisions of the plan. The Secretary of

Defense may dispose of such buildings or property directly to the representatives of the homeless concerned or to the redevelopment authority concerned. The Secretary of Defense shall dispose of the buildings and property under this subparagraph without consideration.

(L)(i) If the Secretary of Housing and Urban Development determines under subparagraph (J) that a revised redevelopment plan for an installation does not meet the requirements set forth in subparagraph (H)(i), or if no revised plan is so submitted, that Secretary shall—

(I) review the original redevelopment plan submitted to that Secretary under subparagraph (G), including the notice or notices of representatives of the homeless referred to in clause (ii)(II) of that subparagraph;

(II) consult with the representatives referred to in subclause (I), if any, for purposes of evaluating the continuing interest of such representatives in the use of buildings or property at the installation to assist the homeless;

(III) request that each such representative submit to that Secretary the items described in clause (ii); and

(IV) based on the actions of that Secretary under subclauses (I) and (II), and on any information obtained by that Secretary as a result of such actions, indicate to the Secretary of Defense the buildings and property at the installation that meet the requirements set forth in subparagraph (H)(i).

(ii) The Secretary of Housing and Urban Development may request under clause (i)(III) that a representative of the homeless submit to that Secretary the following:

(I) A description of the program of such representative to assist the homeless.

(II) A description of the manner in which the buildings and property that the representative proposes to use for such purpose will assist the homeless.

(III) Such information as that Secretary requires in order to determine the financial capacity of the representative to carry out the program and to ensure that the program will be carried out in compliance with Federal environmental law and Federal law against discrimination.

(IV) A certification that police services, fire protection services, and water and sewer services available in the communities in the vicinity of the installation concerned are adequate for the program.

(iii) The Secretary of Housing and Urban Development shall indicate to the Secretary of Defense and to the redevelopment authority concerned the buildings and property at an installation under clause (i)(IV) to be disposed of not later than 90 days after the date of a receipt of a revised plan for the installation under subparagraph (J).

(iv) The Secretary of Defense shall dispose of the buildings and property at an installation referred to in clause (iii) to entities indicated by the Secretary of Housing and Urban Development or by transfer to the redevelopment authority concerned for transfer to such entities. Such disposal shall be in accordance with the indications of the Secretary of Housing and Urban Development under clause (i)(IV). Such disposal shall be without consideration.

(M)(i) In the event of the disposal of buildings and property of an installation pursuant to subparagraph (K), the redevelopment authority for the installation shall be responsible for the implementation of and compliance with agreements under the redevelopment plan described in that subparagraph for the installation.

(ii) If a building or property reverts to a redevelopment authority under such an agreement, the redevelopment authority shall take appropriate actions to secure, to the maximum extent practicable, the utilization of the building or property by other homeless representatives to assist the homeless. A

redevelopment authority may not be required to utilize the building or property to assist the homeless.

(N) The Secretary of Defense may postpone or extend any deadline provided for under this paragraph in the case of an installation covered by this paragraph for such period as the Secretary considers appropriate if the Secretary determines that such postponement is in the interests of the communities affected by the closure of the installation. The Secretary shall make such determinations in consultation with the redevelopment authority concerned and, in the case of deadlines provided for under this paragraph with respect to the Secretary of Housing and Urban Development, in consultation with the Secretary of Housing and Urban Development.

(O) For purposes of this paragraph, the term "communities in the vicinity of the installation", in the case of an installation, means the communities that constitute the political jurisdictions (other than the State in which the installation is located) that comprise the redevelopment authority for the installation.

(8~~7~~)(A) Subject to subparagraph (C), the Secretary may contract with local governments for the provision of police services, fire protection services, airfield operation services, or other community services by such governments at military installations to be closed under this part if the Secretary determines that the provision of such services under such contracts is in the best interests of the Department of Defense.

(B) The Secretary may exercise the authority provided under this paragraph without regard to the provisions of chapter 146 of title 10, United States Code.

(C) The Secretary may not exercise the authority under subparagraph (A) with respect to an installation earlier than 180 days before the date on which the installation is to be closed.

(D) The Secretary shall include in a contract for services entered into with a local government under this paragraph a clause that requires the use of professionals to furnish the services to the extent that professionals are available in the area under the jurisdiction of such government.

(c) **APPLICABILITY OF NATIONAL ENVIRONMENTAL POLICY ACT OF 1969.**—(1) The provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) shall not apply to the actions of the President, the Commission, and, except as provided in paragraph (2), the Department of Defense in carrying out this part.

(2)(A) The provisions of the National Environmental Policy Act of 1969 shall apply to actions of the Department of Defense under this part (i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated.

(B) In applying the provisions of the National Environmental Policy Act of 1969 to the processes referred to in subparagraph (A), the Secretary of Defense and the Secretary of the military departments concerned shall not have to consider—

(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission;

(ii) the need for transferring functions to any military installation which has been selected as the receiving installation; or

(iii) military installations alternative to those recommended or selected.

(3) A civil action for judicial review, with respect to any requirement of the National Environmental Policy Act of 1969 to the extent such Act is applicable under paragraph (2), of any act or failure to act by the Department of Defense during the closing, realigning, or relocating of functions referred to in clauses (i) and (ii) of paragraph (2)(A), may not be brought more than 60 days after the date of such act or failure to act.

(d) WAIVER.—The Secretary of Defense may close or realign military installations under this part without regard to—

(1) any provision of law restricting the use of funds for closing or realigning military installations included in any appropriations or authorization Act; and

(2) sections 2662 and 2687 of title 10, United States Code.

(e) TRANSFER AUTHORITY IN CONNECTION WITH PAYMENT OF ENVIRONMENTAL REMEDIATION COSTS.—(1)(A) Subject to paragraph (2) of this subsection and section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620(h)), the Secretary may enter into an agreement to transfer by deed real property or facilities referred to in subparagraph (B) with any person who agrees to perform all environmental restoration, waste management, and environmental compliance activities that are required for the property or facilities under Federal and State laws, administrative decisions, agreements (including schedules and milestones), and concurrences.

(B) The real property and facilities referred to in subparagraph (A) are the real property and facilities located at an installation closed or to be closed under this part that are available exclusively for the use, or expression of an interest in a use, of a redevelopment authority under subsection (b)(6)(F) during the period provided for that use, or expression of interest in use, under that subsection.

(C) The Secretary may require any additional terms and conditions in connection with an agreement authorized by subparagraph (A) as the Secretary considers appropriate to protect the interests of the United States.

(2) A transfer of real property or facilities may be made under paragraph (1) only if the Secretary certifies to Congress that—

(A) the costs of all environmental restoration, waste management, and environmental compliance activities to be paid by the recipient of the property or facilities are equal to or greater than the fair market value of the property or facilities to be transferred, as determined by the Secretary; or

(B) if such costs are lower than the fair market value of the property or facilities, the recipient of the property or facilities agrees to pay the difference between the fair market value and such costs.

(3) As part of an agreement under paragraph (1), the Secretary shall disclose to the person to whom the property or facilities will be transferred any information of the Secretary regarding the environmental restoration, waste management, and environmental compliance activities described in paragraph (1) that relate to the property or facilities. The Secretary shall provide such information before entering into the agreement.

(4) Nothing in this subsection shall be construed to modify, alter, or amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.) or the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.).

(5) Section 330 of the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484; 10 U.S.C. 2687 note) shall not apply to any transfer under this subsection to persons or entities described in subsection (a)(2) of such section 330.

(6) The Secretary may not enter into an agreement to transfer property or facilities under this subsection after the expiration of the five-year period beginning on the date of the enactment of the National Defense Authorization Act for Fiscal Year 1994.

SEC. 2906. ACCOUNT

(a) IN GENERAL.—(1) There is hereby established on the books of the Treasury an account to be known as the "Department of Defense Base Closure Account 1990" which shall be administered by the Secretary as a single account.

(2) There shall be deposited into the Account—

(A) funds authorized for and appropriated to the Account;

(B) any funds that the Secretary may, subject to approval in an appropriation Act, transfer to the Account from funds appropriated to the Department of Defense for any purpose, except that such funds may be transferred only after the date on which the Secretary transmits written notice of, and justification for, such transfer to the congressional defense committees;

(C) except as provided in subsection (d), proceeds received from the transfer or disposal of any property at a military installation closed or realigned under this part; and

(D) proceeds received after September 30, 1995, from the transfer or disposal of any property at a military installation closed or realigned under title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; 10 U.S.C. 2687 note).

(b) USE OF FUNDS.—(1) The Secretary may use the funds in the Account only for the purposes described in section 2905, or, after September 30, 1995, for environmental restoration and property management and disposal at installations closed or realigned under title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; 10 U.S.C. 2687 note).

(2) When a decision is made to use funds in the Account to carry out a construction project under section 2905(a) and the cost of the project will exceed the maximum amount authorized by law for a minor military construction project, the Secretary shall notify in writing the congressional defense committees of the nature of, and justification for, the project and the amount of expenditures for such project. Any such construction project may be carried out without regard to section 2802(a) of title 10, United States Code.

(c) REPORTS.—(1)(A) No later than 60 days after the end of each fiscal year in which the Secretary carries out activities under this part, the Secretary shall transmit a report to the congressional defense committees of the amount and nature of the deposits into, and the expenditures from, the Account during such fiscal year and of the amount and nature of other expenditures made pursuant to section 2905(a) during such fiscal year.

(B) The report for a fiscal year shall include the following:

(i) The obligations and expenditures from the Account during the fiscal year, identified by subaccount, for each military department and Defense Agency.

(ii) The fiscal year in which appropriations for such expenditures were made and the fiscal year in which funds were obligated for such expenditures.

(iii) Each military construction project for which such obligations and expenditures were made, identified by installation and project title.

(iv) A description and explanation of the extent, if any, to which expenditures for military construction projects for the fiscal year differed from proposals for projects and funding levels that were included in the justification transmitted to Congress under section 2907(1), or otherwise, for the funding proposals for the Account for such fiscal year, including an explanation of—

(I) any failure to carry out military construction projects that were so proposed; and

(II) any expenditures for military construction projects that were not so proposed.

(2) Unobligated funds which remain in the Account after the termination of the authority of the Secretary to carry out a closure or realignment under this part shall be held in the Account until transferred by law after the congressional defense committees receive the report transmitted under paragraph (3).

(3) No later than 60 days after the termination of the authority of the Secretary to carry out a closure or realignment under this part, the Secretary shall transmit to the congressional defense committees a report containing an accounting of—

(A) all the funds deposited into and expended from the Account or otherwise expended under this part; and

(B) any amount remaining in the Account.

(d) DISPOSAL OR TRANSFER OF COMMISSARY STORES AND PROPERTY PURCHASED WITH NONAPPROPRIATED FUNDS.—(1) If any real property or facility acquired, constructed, or improved (in whole or in part) with commissary store funds or nonappropriated funds is transferred or disposed of in connection with the closure or realignment of a military installation under this part, a portion of the proceeds of the transfer or other disposal of property on that installation shall be deposited in the reserve account established under section 204(b)(4)(C) of the Defense Authorization Amendments and Base Closure and Realignment Act (10 U.S.C. 2687 note).

(2) The amount so deposited shall be equal to the depreciated value of the investment made with such funds in the acquisition, construction, or improvement of that particular real property or facility. The depreciated value of the investment shall be computed in accordance with regulations prescribed by the Secretary of Defense.

(3) The Secretary may use amounts in the account (in such an aggregate amount as is provided in advance in appropriation Acts) for the purpose of acquiring, constructing, and improving—

(A) commissary stores; and

(B) real property and facilities for nonappropriated fund instrumentalities.

(4) As used in this subsection:

(A) The term "commissary store funds" means funds received from the adjustment of, or surcharge on, selling prices at commissary stores fixed under section 2685 of title 10, United States Code.

(B) The term "nonappropriated funds" means funds received from a nonappropriated fund instrumentality.

(C) The term "nonappropriated fund instrumentality" means an instrumentality of the United States under the jurisdiction of the Armed Forces (including the Army and Air Force Exchange Service, the Navy Resale and Services Support Office, and the Marine Corps exchanges) which is conducted for the comfort, pleasure, contentment, or physical or mental improvement of members of the Armed Forces.

(e) ACCOUNT EXCLUSIVE SOURCE OF FUNDS FOR ENVIRONMENTAL RESTORATION PROJECTS.—Except for funds deposited into the Account under subsection (a), funds appropriated to the Department of Defense may not be used for purposes described in section 2905 (a)(1)(C). The prohibition in this subsection shall expire upon the termination of the authority of the Secretary to carry out a closure or realignment under this part.

SEC. 2907. REPORTS

As part of the budget request for fiscal year 1993 and for each fiscal year thereafter for the Department of Defense, the Secretary shall transmit to the congressional defense committees of Congress—

(1) a schedule of the closure and realignment actions to be carried out under this part in the fiscal year for which the request is made and an estimate of the total expenditures required and cost savings to be achieved by each such closure and realignment and of the time period in which these savings are to be achieved in each case, together with the Secretary's assessment of the environmental effects of such actions; and

(2) a description of the military installations, including those under construction and those planned for construction, to which functions are to be transferred as a result of such closures and realignments, together with the Secretary's assessment of the environmental effects of such transfers.

SEC. 2908. CONGRESSIONAL CONSIDERATION OF COMMISSION REPORT

(a) TERMS OF THE RESOLUTION.—For purposes of section 2904(b), the term "joint resolution" means only a joint resolution which is introduced within the 10-day period beginning on the date on which the President transmits the report to the Congress under section 2903(e), and—

(1) which does not have a preamble;

(2) the matter after the resolving clause of which is as follows: "That Congress disapproves the recommendations of the Defense Base Closure and Realignment Commission as submitted by the President on _____", the blank space being filled in with the appropriate date; and

(3) the title of which is as follows: "Joint resolution disapproving the recommendations of the Defense Base Closure and Realignment Commission.".

(b) REFERRAL.—A resolution described in subsection (a) that is introduced in the House of Representatives shall be referred to the Committee on Armed Services of the House of Representatives. A resolution described in subsection (a) introduced in the Senate shall be referred to the Committee on Armed Services of the Senate.

(c) DISCHARGE.—If the committee to which a resolution described in subsection (a) is referred has not reported such a resolution (or an identical resolution) by the end of the 20-day period beginning on the date on which the President transmits the report to the Congress under section 2903(e), such committee shall be, at the end of such period, discharged from further consideration of such resolution, and such resolution shall be placed on the appropriate calendar of the House involved.

(d) CONSIDERATION.—(1) On or after the third day after the date on which the committee to which such a resolution is referred has reported, or has been discharged (under subsection (c)) from further consideration of, such a resolution, it is in order (even though a previous motion to the same effect has been disagreed to) for any Member of the respective House to move to proceed to the consideration of the resolution. A member may make the motion only on the day after the calendar day on which the Member announces to the House concerned the Member's intention to make the motion, except that, in the case of the House of Representatives, the motion may be made without such prior announcement if the motion is made by direction of the committee to which the resolution was referred.

The motion is highly privileged in the House of Representatives and is privileged in the Senate and is not debatable. The motion is not subject to amendment, or to a motion to postpone, or to a motion to proceed to the consideration of other business. A motion to reconsider the vote by which the motion is agreed to or disagreed to shall not be in order. If a motion to proceed to the consideration of the resolution is agreed to, the respective House shall immediately proceed to consideration of the joint resolution without intervening motion, order, or other business, and the resolution shall remain the unfinished business of the respective House until disposed of.

(2) Debate on the resolution, and on all debatable motions and appeals in connection therewith, shall be limited to not more than 2 hours, which shall be divided equally between those favoring and those opposing the resolution. An amendment to the resolution is not in order. A motion further to limit debate is in order and not debatable. A motion to postpone, or a motion to proceed to the consideration of other business, or a motion to recommit the resolution is not in order. A motion to reconsider the vote by which the resolution is agreed to or disagreed to is not in order.

(3) Immediately following the conclusion of the debate on a resolution described in subsection (a) and a single quorum call at the conclusion of the debate if requested in accordance with the rules of the appropriate House, the vote on final passage of the resolution shall occur.

(4) Appeals from the decisions of the Chair relating to the application of the rules of the Senate or the House of Representatives, as the case may be, to the procedure relating to a resolution described in subsection (a) shall be decided without debate.

(e) **CONSIDERATION BY OTHER HOUSE.**—(1) If, before the passage by one House of a resolution of that House described in subsection (a), that House receives from the other House a resolution described in subsection (a), then the following procedures shall apply:

(A) The resolution of the other House shall not be referred to a committee and may not be considered in the House receiving it except in the case of final passage as provided in subparagraph (B)(ii).

(B) With respect to a resolution described in subsection (a) of the House receiving the resolution—

(i) the procedure in that House shall be the same as if no resolution had been received from the other House; but

(ii) the vote on final passage shall be on the resolution of the other House.

(2) Upon disposition of the resolution received from the other House, it shall no longer be in order to consider the resolution that originated in the receiving House.

(f) **RULES OF THE SENATE AND HOUSE.**—This section is enacted by Congress—

(1) as an exercise of the rulemaking power of the Senate and House of Representatives, respectively, and as such it is deemed a part of the rules of each House, respectively, but applicable only with respect to the procedure to be followed in that House in the case of a resolution described in subsection (a), and it supersedes other rules only to the extent that it is inconsistent with such rules; and

(2) with full recognition of the constitutional right of either House to change the rules (so far as relating to the procedure of that House) at any time, in the same manner, and to the same extent as in the case of any other rule of that House.

SEC. 2909. RESTRICTION ON OTHER BASE CLOSURE AUTHORITY

(a) **IN GENERAL.**—Except as provided in subsection (c), during the period beginning on the date of the enactment of this Act and ending on December 31, 1995, this part shall be the exclusive authority for selecting for closure or realignment, or for carrying out any closure or realignment of, a military installation inside the United States.

(b) **RESTRICTION.**—Except as provided in subsection (c), none of the funds available to the Department of Defense may be used, other than under this part, during the period specified in subsection (a)—

(1) to identify, through any transmittal to the Congress or through any other public announcement or notification, any military installation inside the United States as an installation to be closed or realigned or as an installation under consideration for closure or realignment; or

(2) to carry out any closure or realignment of a military installation inside the United States.

(c) **EXCEPTION.**—Nothing in this part affects the authority of the Secretary to carry out—

(1) closures and realignments under title II of Public Law 100-526; and

(2) closures and realignments to which section 2687 of title 10, United States Code, is not applicable, including closures and realignments carried out for reasons of national security or a military emergency referred to in subsection (c) of such section.

SEC. 2910. DEFINITIONS

As used in this part:

(1) The term "Account" means the Department of Defense Base Closure Account 1990 established by section 2906(a)(1).

(2) The term "congressional defense committees" means the Committees on Armed Services and the Committees on Appropriations of the Senate and of the House of Representatives.

(3) The term "Commission" means the Commission established by section 2902.

(4) The term "military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the Department of Defense, including any leased facility. Such term does not include any facility used primarily for civil works, rivers and harbors projects, flood control, or other projects not under the primary jurisdiction or control of the Department of Defense. [*The preceding sentence shall take effect as of November 5, 1990, and shall apply as if it had been included in section 2910(4) of the Defense Base Closure and Realignment Act of 1990 on that date.*]

(5) The term "realignment" includes any action which both reduces and relocates functions and civilian personnel positions but does not include a reduction in force resulting from workload adjustments, reduced personnel or funding levels, or skill imbalances.

(6) The term "Secretary" means the Secretary of Defense.

(7) The term "United States" means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, and any other commonwealth, territory, or possession of the United States.

(8) The term "date of approval", with respect to a closure or realignment of an installation, means the date on which the authority of Congress to disapprove a recommendation of closure or realignment, as the case may be, of such installation under this part expires. [*The date of approval of closure of any installation approved for closure before November 30, 1993 shall be deemed to be November 30, 1993.*]

(9) The term "redevelopment authority", in the case of an installation to be closed under this part, means any entity (including an entity established by a State or local government) recognized by the Secretary of Defense as the entity responsible for developing the redevelopment plan with respect to the installation ~~and for~~ or for directing the implementation of such plan. [*The above revision shall take effect as if included in the amendments made by section 2918 of P.L. 103-160.*]

(10) The term "redevelopment plan" in the case of an installation to be closed under this part, means a plan that—

(A) is agreed to by the local redevelopment authority with respect to the installation; and

(B) provides for the reuse or redevelopment of the real property and personal property of the installation that is available for such reuse and redevelopment as a result of the closure of the installation.

(10) The term "representative of the homeless" has the meaning given such term in section 501(h)(4) of the Stewart B. McKinney Homeless Assistance Act (42 U.S.C. 11411(h)(4)).

SEC. 2911. CLARIFYING AMENDMENT

Section 2687(e)(1) of title 10, United States Code, is amended—

(1) by inserting "homeport facility for any ship," after "center,"; and

(2) by striking out "under the jurisdiction of the Secretary of a military department" and inserting in lieu thereof "under the jurisdiction of the Department of Defense, including any leased facility,".

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Non-Attainment Issues, By Installation

Non-Attainment Criteria

Installation	Service	State	Action	Ozone	Carbon Monoxide	Particulates	Nitrogen Oxide	Remarks
Long Beach Nav Shipyard	Navy	CA	Close	nonattain	nonattain	nonattain		
NAWC Indianapolis	Navy	IN	Close	moderate nonatt				to Crane/China Lake/Patuxent River
NSWC Louisville	Navy	KY	Close	moderate nonatt				relocation to?
NSWC White Oak	Navy	MD	Close					to Carderock (nonatt) Conformity ?
NAS S Weymouth	Navy	MA	Close	severe nonatt				to Brunswick/mod nonatt OZ
NAWC Lakehurst	Navy	NJ	Close	severe nonatt				to Jacksonville/transitional OZ
NAWC, NCCOSC Warminster	Navy	PA	Close	severe nonatt				to S.Diego, Patuxent Rvr. Conform?
NHRC San Diego	Navy	CA	Close		mod nonatt			Conformity?
NUWC New London	Navy	CT	Close	nonatt				to Newport (attainment)
NSWC Anapolis	Navy	MD	Close					to Carderock/NRL DC/Philly Conform?
UPT Pensacola	Navy	FL	Receive					from Corpus Christi - conform?
Miramar	Navy	CA	Redirect					Conformity required for Oceana
Cecil Field	Navy	FL	Redirect					Conformity required: Oceana, Atlanta
SNWSC Arlington	Navy	VA	Redirect					to San Diego - Conform?
Ft Indiantown Gap	Army	PA	Close	marginal nonatt				
Ft Dix	Army	NJ	Realign	severe nonatt				
Ft Hunter Liggett	Army	CA	Realign	mod non att				
Ft Hamilton	Army	NY	Realign	severe nonatt	mod nonatt			
Ft Monmouth	Army	NJ	Receive	severe nonatt			severe nonatt	adds 1216.
Ft Meade	Army	MD	Realign	severe nonatt				
Ft Ritchie	Army	MD	Close	mod nonatt				
Kelly Support Center	Army	PA	Realign	mod nonatt				
Price Support Center	Army	IL	Close	mod nonatt		mod nonatt		
Selfridge Support Center	Army	MI	Close	mod nonatt				
Ft Lee	Army	VA	Realign	air status???				
Savanna Army Depot	Army	IL	Realign	air status???				
Bayonne Military Ocean Term.	Army	NJ	Close	marginal nonatt				
Letterkenny Army Depot	Army	PA	Realign	nonatt (level?)				
Fitzimons Army Med Center	Army	CO	Close	serious nonatt	nonatt	nonatt		
Ft Carson	Army	CO	Receive		moderate nonatt			add 231. Limits: obscurant training.
Ft Lewis	Army	CO	Receive	marginal nonatt	moderate nonatt			adds 137.
Ft Bliss	Army	TX?	Receive	serious nonatt	moderate nonatt	mod nonatt		add 532

Non-Attainment Issues, By Installation

Non-Attainment Criteria

Ft Detrick	Army	MD	Receive	serious nonatt				adds 936
Ft Huachuca	Army	AZ	Receive	[class II att?]				adds 274
Tobyhanna Army Dept	Army	PA	Receive	marginal nonatt				adds 300
Ft Meade	Army	MD	Receive	nonatt	severe nonatt			adds 332
Ft Belvoir	Army	VA	Receive	severe				add 210 Also nonatt sulfur dioxide
Detroit Arsenal	Army	MI	Receive			seriousnona	t: lead,nitrogen	dioxide, sulfur dioxide. Add 154

Base Name	MAINT	NON ATTAIN	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Altus AFB	OK	OK					
Andersen AFB	OK	OK					
Andrews AFB	OK	Non-Attainment		Serious			
Arnold AFS	OK	OK					
ARPC	Maintnance Area	Non-Attainment	Moderate				
Barksdale AFB	OK	OK					
Battle Creek Federal Cent	OK	Non-Attainment		Marginal			
Beale AFB	OK	Non-Attainment		Marginal			
Bergstrom ARB	OK	OK					
Boise Air Terminal ANGS	OK	Non-Attainment	Moderate		Moderate		
Bolling AFB	OK	Non-Attainment	Moderate	Serious			
Brooks AFB	OK	OK					
Buckley ANGB	Maintnance Area	Non-Attainment	Moderate	Marginal	Moderate		Moderate
Cannon AFB	OK	OK					
Carswell AFB	OK	Non-Attainment		Moderate			
Charleston AFB	OK	OK					
Columbus AFB	OK	OK					
Davis-Monthan AFB							
Dobbins ARB	OK	Non-Attainment		Serious			
Dover AFB	OK	Non-Attainment		Severe			
Dyess AFB	OK	OK					
Edwards AFB	Maintnance Area	Non-Attainment		Serious			
Eglin AFB	OK	OK					
Eielson AFB	OK	OK					
Ellsworth AFB	OK	OK					
Elmendorf	OK	OK					
Fairchild AFB	OK	OK					
Falcon AFB	OK	Non-Attainment	Marginal				
FE Warren AFB	OK	OK					
Gen Mitchell IAP ARS	OK	Non-Attainment		Severe			
Goodfellow AFB	OK	OK					
Grand Forks AFB	OK	OK					
Greater Pittsburgh IAP AN	OK	Non-Attainment		Moderate			
Greater Pittsburgh IAP ARS	OK	Non-Attainment		Moderate			
Griffiss AFB	OK	Non-Attainment		Moderate			
Grissom AFB	OK	OK					
Hanscom AFB	OK	Non-Attainment		Serious			
Hickam AFB	OK	OK					
Hill AFB	OK	Non-Attainment		Moderate			
Holloman AFB	OK	OK					
Homestead ARB	OK	Non-Attainment		Moderate			
Hurlburt Fld	OK	OK					
Keesler AFB	OK	OK					
Kelly AFB	OK	OK					

Base Name	MAINT	NON ATTAIN	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Kirtland AFB	OK	Non-Attainment	Moderate				
Lackland AFB	OK	OK					
Lambert Field ANGS	OK	Non-Attainment		Moderate			
Langley AFB	OK	Non-Attainment		Marginal			
Laughlin AFB	OK	OK					
Little Rock AFB	OK	OK					
Los Angeles AFB	OK	Non-Attainment	Serious	Extreme	Moderate		
Luke AFB	OK	Non-Attainment	Moderate	Moderate	Moderate		
MacDill AFB	Maintnance Area	Non-Attainment		Marginal			
Malmstrom AFB	OK	OK					
March ARB	Maintnance Area	Non-Attainment	Moderate	Extreme			
Martin State APT ANGS	Maintnance Area	Non-Attainment		Severe			
Maxwell AFB	OK	OK					
McChord AFB	OK	Non-Attainment	Moderate	Marginal	Moderate		
McClellan AFB	OK	Non-Attainment	Moderate	Serious	Moderate		
McConnell AFB	OK	OK					
McGuire AFB		Non-Attainment		Severe			
Minneapolis-St Paul IAP AR	OK	Non-Attainment	Moderate				
Minot AFB	OK	OK					
Moody AFB	OK	OK					
Mt Home AFB	OK	OK					
NAS Willow Grove ARS	OK	Non-Attainment	Moderate	Severe			
Nellis AFB	OK	Non-Attainment	Moderate		Severe		
Niagara Falls IAP ARS	OK	Non-Attainment		Marginal			
O'Hare IAP, ARS	OK	Non-Attainment		Severe			
Offutt AFB	OK	OK					
Onizuka AFB	Maintnance Area	Non-Attainment	Moderate	Moderate			
Otis ANGB	OK	Non-Attainment		Serious			
Patrick AFB	OK	OK					
Peterson AFB	OK	Non-Attainment	Moderate				
Pope AFB	OK	OK					
Portland IAP ANGS		Non-Attainment	Moderate	Marginal			
Randolph AFB	OK	OK					
Reese AFB	OK	OK					
Rickenbacker ANGB	Maintnance Area	Non-Attainment		Marginal			
Robins AFB	OK	OK					
Rome Lab	OK	Non-Attainment		Moderate			
Salt Lake City IAP ANGS	OK	Non-Attainment	Moderate	Moderate	Moderate	Marginal	
Scott AFB	OK	Non-Attainment		Moderate			
Selfridge ANGB	OK						
Seymour Johnson AFB	OK	OK					
Shaw AFB	OK	OK					
Sheppard AFB	OK	OK					
Stewart IAP ANGS	OK	OK					

Base Name	MAINT	NON_ATTAI	Carbon Monoxide	Ozone	PM-10	Sulfur dioxide	TSP
Tinker AFB	OK	OK					
Travis AFB	OK	Non-Attainment	Moderate	Moderate			
Tucson IAP ANGS	OK	Non-Attainment	Moderate		Moderate		
Tyndall AFB	OK	OK					
USAFA	OK	Non-Attainment	Moderate				
Vance AFB	OK	OK					
Vandenberg AFB	OK	Non-Attainment		Moderate			
Westover ARB	Maintr[illegible]e Area	Non-Attainment		Serious			
Whiteman AFB	OK	OK					
Wright-Patterson AFB	OK	Non-Attainment		Moderate			
Youngstown-Warren MPT A	OK	Non-Attainment		Marginal			

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Non-Attainment Issues, By Installation

Non-Attainment Criteria

Installation	Service	State	Action	Ozone	Carbon Monoxide	Particulates	Nitrogen Oxide	Remarks
Long Beach Nav Shipyard	Navy	CA	Close	nonattain	nonattain	nonattain		
NAWC Indianapolis	Navy	IN	Close	moderate nonatt				to Crane/China Lake/Patuxent River
NSWC Louisville	Navy	KY	Close	moderate nonatt				relocation to?
NSWC White Oak	Navy	MD	Close					to Carderock (nonatt) Conformity ?
NAS S Weymouth	Navy	MA	Close	severe nonatt				to Brunswick/mod nonatt OZ
NAWC Lakehurst	Navy	NJ	Close	severe nonatt				to Jacksonville/transitional OZ
NAWC, NCCOSC Warminster	Navy	PA	Close	severe nonatt				to S.Diego, Patuxent Rvr. Conform?
NHRC San Diego	Navy	CA	Close		mod nonatt			Conformity?
NUWC New London	Navy	CT	Close	nonatt				to Newport (attainment)
NSWC Anapolis	Navy	MD	Close					to Carderock/NRL DC/Philly Conform?
UPT Pensacola	Navy	FL	Receive					from Corpus Christi - conform?
Miramar	Navy	CA	Redirect					Conformity required for Oceana
Cecil Field	Navy	FL	Redirect					Conformity required: Oceana, Atlanta
SNWSC Arlington	Navy	VA	Redirect					to San Diego - Conform?
Ft Indiantown Gap	Army	PA	Close	marginal nonatt				
Ft Dix	Army	NJ	Realign	severe nonatt				
Ft Hunter Liggett	Army	CA	Realign	mod non att				
Ft Hamilton	Army	NY	Realign	severe nonatt	mod nonatt			
Ft Monmouth	Army	NJ	Receive	severe nonatt			severe nonatt	receive from bases in same district?
Ft Meade	Army	MD	Realign	severe nonatt				
Ft Ritchie	Army	MD	Close	mod nonatt				
Kelly Support Center	Army	PA	Realign	mod nonatt				
Price Support Center	Army	IL	Close	mod nonatt		mod nonatt		
Selfridge Support Center	Army	MI	Close	mod nonatt				
Ft Lee	Army	VA	Realign	air status???				
Savanna Army Depot	Army	IL	Realign	air status???				
Bayonne Military Ocean Term.	Army	NJ	Close	marginal nonatt				
Letterkenny Army Depot	Army	PA	Realign	nonatt (level?)				
Fitzimons Army Med Center	Army	CO	Close	serious nonatt	nonatt	nonatt		

Non-Attainment Issues, By Installation

				Non-Attainment Criteria			
Installation	Service	State	Action	Ozone	Carbon Monoxide	Particulates	Nitrogen Oxide
Long Beach Nav Shipyard	Navy	CA	Close	nonattain	nonattain	nonattain	
NAWC Indianapolis	Navy	IN	Close	moderate nonatt			
NSWC Louisville	Navy	KY	Close	moderate nonatt			
NSWC White Oak	Navy	MD	Close				
NAS S Weymouth	Navy	MA	Close	severe nonatt			
NAWC Lakehurst	Navy	NJ	Close	severe nonatt			
NAWC, NCCOSC Warminster	Navy	PA	Close	severe nonatt			
NHRC San Diego	Navy	CA	Close		mod nonatt		
NUWC New London	Navy	CT	Close	nonatt			
NSWC Anapolis	Navy	MD	Close				
UPT Pensacola	Navy	FL	Receive				
Miramar	Navy	CA	Redirect				
Cecil Field	Navy	FL	Redirect				
NSWC Carderock	Navy	MD	Receive		mod nonattain		
NAS Brunswick	Navy	ME	Receive	mod nonatt			
NAS Jacksonville	Navy	FL	Receive	transitional			
NAWC Patuxent River	Navy	MD	Receive				
NSWC Philadelphia	Navy	PA	Receive		nonattain		
NRL Washington	Navy	DC	Receive		nonattain		
NAS Oceana	Navy	VA	Receive	air status?			
NAS Atlanta	Navy	GA	Receive	air status?			
SNWSC Arlington	Navy	VA	Redirect				
Gov't space, San Diego	Navy	CA	Receive		mod nonattain		
Ft Indiantown Gap	Army	PA	Close	marginal nonatt			
Ft Dix	Army	NJ	Realign	severe nonatt			
Ft Hunter Liggett	Army	CA	Realign	mod non att			
Ft Hamilton	Army	NY	Realign	severe nonatt	mod nonatt		
Ft Monmouth	Army	NJ	Receive	severe nonatt			severe nonatt
Ft Meade	Army	MD	Realign	severe nonatt			
Ft Ritchie	Army	MD	Close	mod nonatt			
Kelly Support Center	Army	PA	Realign	mod nonatt			
Price Support Center	Army	IL	Close	mod nonatt		mod nonatt	

Non-Attainment Issues, By Installation

				Non-Attainment Criteria			
Selfridge Support Center	Army	MI	Close	mod nonatt			
Ft Lee	Army	VA	Realign	air status???			
Savanna Army Depot	Army	IL	Realign	air status???			
Bayonne Military Ocean Term.	Army	NJ	Close	marginal nonatt			
Letterkenny Army Depot	Army	PA	Realign	nonatt (level?)			
Fitzimons Army Med Center	Army	CO	Close	serious nonatt	nonatt	nonatt	
Ft Carson	Army	CO	Receive		moderate nonatt		
Ft Lewis	Army	CO	Receive	marginal nonatt	moderate nonatt		
Ft Bliss	Army	TX?	Receive	serious nonatt	moderate nonatt	mod nonatt	
Ft Detrick	Army	MD	Receive	serious nonatt			
Ft Huachuca	Army	AZ	Receive	[class II att?]			
Tobyhanna Army Dept	Army	PA	Receive	marginal nonatt			
Ft Meade	Army	MD	Receive	nonatt	severe nonatt		
Ft Belvoir	Army	VA	Receive	severe			
Detroit Arsenal	Army	MI	Receive			seriousnona	t: lead,nitrogen
Andrews AFB	AF			serious nonatt			
ARPC	AF				mod nonatt		
Battle Creek Federal Center	AF			marginal nonatt			
Beale AFB	AF	CA		marginal nonatt			
Boise Air Terminal ANGS	AF	ID			mod nonatt	mod nonatt	
Bolling AFB	AF			serious nonatt	mod nonatt		
Buckley ANGB	AF			marginal nonatt	mod nonatt	mod nonatt	
Carswell AFB	AF			mod nonatt			
Dobbins ARB	AF			serious nonatt			
Dover AFB	AF			severe nonatt			
Edwards AFB	AF	CA		serious nonatt			
Falcon AFB	AF				marginal nonatt		
Gen Mitchell IAP ARS	AF			severe nonatt			
Greater Pittsburgh IAP AN	AF	PA		mod nonatt			
Greater Pittsburgh IAP ARS	AF	PA		mod nonatt			
Griffis AFB	AF			mod nonatt			
Hanscom AFB	AF			serious nonatt			
Hill AFB	AF	UT		mod nonatt			
Homestead ARB	AF	FL		mod nonatt			

Non-Attainment Issues, By Installation

				Non-Attainment Criteria			
Kirtland AFB	AF	NM			mod nonatt		
Lambert Field ANGS	AF			mod nonatt			
Langley AFB	AF			marginal nonatt			
Los Angeles AFB	AF	CA		extreme nonatt	serious nonatt	mod nonatt	
Luke AFB	AF	AZ		mod nonatt	mod nonatt	mod nonatt	
MacDill AFB	AF	FL?		marginal nonatt			
March AFB	AF	CA		extreme nonatt	mod nonatt		
Martin State APT ANGS	AF			severe nonatt			
McChord AFB	AF			serious nonatt	mod nonatt	mod nonatt	
McClellan AFB	AF	CA		serious nonatt	mod nonatt	mod nonatt	
McGuire AFB	AF			severe nonatt			
Minneapolis/St Paul IAP AR	AF	MN			mod nonatt		
NAS Willow Grove ARS	AF			severe nonatt	mod nonatt		
Nellis AFB	AF				mod nonatt	severe nonat	
Niagra Falls IAP ARS	AF			marginal nonatt			
O'Hare IAP ARS	AF	IL		severe nonatt			
Onizuka AFB	AF	CA		mod nonatt	mod nonatt		
Otis ANGB	AF			serious nonatt			
Peterson AFB	AF				mod nonatt		
Portland AFB	AF			marginal nonatt	mod nonatt		
Rickenbacker ANGB	AF			marginal nonatt			
Rome Lab	AF	NY		mod nonatt			
Salt Lake City IAP ANGS	AF	UT		mod nonatt	mod nonatt	mod nonatt	
Scott AFB	AF			mod nonatt			
Travis AFB	AF	CA		mod nonatt	mod nonatt		
Tucson IAP, ANGS	AF	AZ			mod nonatt		
USAFA	AF				mod nonatt		
Vandenberg AFB	AF			mod nonatt			
Westover ARB	AF			serious nonatt			
Wright-Patterson AFB	AF	OH		mod nonatt			
Youngstown-Warren MPT A	AF	OH		marginal nonatt			

Non-Attainment Issues, By Installation

Non-Attainment Criteria

Remarks
Conformity?
Conformity determ. may be req'd
Conformity required for Oceana
Conformity required: Oceana, Atlanta
Conformity determ. may be req'd
Conformity determ. may be req'd
Conformity determ. may be req'd
Conformity determ. may be req'd
Conformity: probably OK
Conformity: REQUIRED
Conformity: REQUIRED
to San Diego - Conform?
Conformity determ. may be req'd
adds 1216.

Non-Attainment Issues, By Installation

Non-Attainment Criteria

add 231. Limits: obscurant training.
adds 137.
add 532
adds 936
adds 274
adds 300
adds 332
add 210. Also nonatt sulfur dioxide
dioxide, sulfur dioxide. Add 154.
Maintenance area (criteria?)
Maintenance area (criteria?)
Maintenance area (criteria?)

Non-Attainment Issues, By Installation

Non-Attainment Criteria
Maintenance area (criteria?)
Maintenence area (criteria?)
Maintenance area (criteria?)
Maintenance area (criteria?
Maintenance area (criteria?)
marginal for sulfer dioxide
Maintenance area (criteria?)

AIR FORCE I ALLATIONS
(NON ATTAINMENT FOR NAAQS)

INSTALLATION NAME	CMD	COUNTY	ST	NEAREST CITY	OZONE	CO	NO_2	SO_2	PM-10
O'Hare	AFRES	Cook	IL	Chicago	severe				
Onizuka	AMC	Santa Clara	CA	Sunnyvale	moderate	moderate			
Otis	NGB	Barnstable	MA	Falmouth	serious	x			
Peterson	SPC	El Paso	CO	Colorado Springs		moderate			
Plattsburgh	BCA		NY	Plattsburgh					
Portland IAP	NGB	Multnomah	OR	Portland	marginal	moderate			
Richards-Gerbaur	BCA	Jackson	MO	Belton	x				
Rickenbacker	BCA	Franklin	OH	Lockbourne	marginal				
Robins	AFMC	Houston	GA	Warner Robins					
Scott	AMC	St Clair	IL	Shiloh	moderate				
Selfridge	NGB	Macomb	MI	Mt Clemens	transition				
Stewart	NGB	Orange	NY	Newburgh	x				
Travis	AMC	Solano	CA	Fairfield	moderate	moderate			
Tucson	NGB	Pima	AZ	Tucson		moderate			moderate
USAF Academy	AFA	El Paso	CO	Monument		moderate			
Vandenberg	SPC	Santa Barbara	CA	Lompoc	moderate				
Westover	AFRES	Hampden	MA	Chicopee	serious				
Williams	BCA	Maricopa	AZ	Chandler	x				
Willow Grove	NG/AR	Montgomery	PA	Hatboro	severe	moderate			
Wright-Patterson	AFMC	Greene	OH	Fairborn	moderate				
Youngstown MAP	AFRES	Trumball	OH	Vienna	marginal				

Notes:

* All of New York is in Ozone Nonattainment Area Except for Plattsburg

** Edwards AFB is located in three air quality management districts. Kern County is noted in the table. Mojave Desert has portions in severe nonattainment for ozone and moderate for particulate matter. The South Coast district is severe for ozone, serious for particulate matter, serious for carbon monoxide, and for nitrogen dioxides.

AIR FORCE INSTALLATIONS
(NON ATTAINMENT FOR NAAQS)

INSTALLATION NAME	CMD	COUNTY	ST	NEAREST CITY	OZONE	CO	NO_2	SO_2	PM-10
AF Plant 3	AFMC	Tulsa	OK	Tulsa	x				
AF Plant 4	AFMC	Tarrant	TX	Fort Worth	moderate				
AF Plant 6	AFMC	Cobb	GA	Marietta	serious				
AF Plant 19	AFMC	San Diego	CA	San Diego	x	x			x
AF Plant 38	AFMC	Niagara	NY	Lewiston	x				x
AF Plant 42	AFMC	Los Angeles	CA	Palmdale	severe	serious	moderate		x
AF Plant 44	AFMC	Pima	AZ	Tuscon		moderate			x
AF Plant 59	AFMC	Broome	NY	Johnson City	*				
AF Plant 70	AFMC	Sacramento	CA	Folsom	x			x	
AF Plant 85	AFMC	Franklin	OH	Columbus	marginal				
AF Plant PJKS	AFMC	Arapoho	CO	Littleton	transition	moderate			moderate
Andrews	AMC	Prince Georges	MD	Camp Springs	serious	moderate			
ARPC	AFRES	Denver	CO	Denver	transition	moderate			x
Barksdale	ACC	Bossier	LA	Bossier City					
Beale	ACC	Yuba	CA	Marysville	transition				
Boise Air Terminal	NGB	Ada	ID	Boise		moderate			
Bolling	AFDW	Washington	DC	Washington	serious	moderate			
Buckley	NGB	Arapahoe	CO	Denver	transition	moderate			moderate
Cape Cod	SPC	Barnstable	MA	Bourne	serious	x			
Carswell	AFRES	Tarrant	TX	Fort Worth	moderate				
Castle	BCA	Merced	CA	Atwater	x				
Davis-Monthan	ACC	Pima	AZ	Tuscon					
Dobbins	AFRES	Cobb	GA	Marietta	serious				
Dover	AMC	Kent	DE	Dover	servere				
Edwards (see note)	AFMC	Kern	CA	Rosamond	serious				moderate
Eielson	PACAF	Fairbanks	AK	North Pole					
Ellsworth	ACC	Pennington	SD	Box Eider					
Elmendorf	PACAF	Anchorage	AK	Anchorage					
Falcon	SPC	El Paso	CO	Ellicott		moderate			

AIR FORCE INSTALLATIONS
(NON ATTAINMENT FOR NAAQS)

INSTALLATION NAME	CMD	COUNTY	ST	NEAREST CITY	OZONE	CO	NO_2	SO_2	PM-10
Fresno	NGB	Fresno	CA	Fresno	x	x			x
George	BCA	San Bernardino	CA	Adelnto	x				x
General Mitchell	AFRES	Milwaukee	WI	Milwaukee	servere				
Greater Pittsburgh	AFRES	Allegheny	PA	Coraopolis	moderate				moderat
Griffiss	ACC	Oneida	NY	Rome	moderate				
Hanscom	AFMC	Middlesex	MA	Bedford	serious				
Hill	AFMC	Davis/Weber	UT	Clearfield	moderate				
Homestead	AFRES	Dade	FL	Homestead	moderate				
Kirtland	AFMC	Bernalillo	NM	Albuquerque		moderate			
Langley	ACC	Hampton	VA	Hampton	marginal				
Loring	BCA	Aroostook	ME	Limestone	moderate				
Los Angeles	AFMC	Los Angeles	CA	El Segundo	extreme	serious			moderat
Lowry	BCA	Denver	CO	Denver	x	x			x
Luke	AETC	Maricopa	AZ	Litchfield Park	moderate	moderate			moderat
MacDill	ACC	Hillsborough	FL	Tampa	moderate				
Malmstrom	SPC	Cascade	MT	Great Falls					
March	AMC	Riverside	CA	Summymead	extreme	moderate			x
Martin State	NGB	Baltimore	MD	Baltimore	servere-15	transition			
Mather	BCA	Sacramento	CA	Ranch Cordoa	x	x			x
McChord	AMC	Pierce	WA	Tacoma	marginal	moderate			moderat
McClellan	AFMC	Sacramento	CA	Sacramento	serious	moderate	x		x
McGuire	AMC	Burlington	NJ	Wrightstown	severe				
Minneapolis-St Paul	AFRES	Hennepin	MN	Minneapolis	moderate				
Nellis	ACC	Clark	NV	Las Vegas		moderate			serrious
Newark	AFMC	Licking	OH	Hcalh	marginal				
New Boston	SPC	Hillsborough	NH	Mount Vernon	serious				
Niagara Falls	AFRES	Niagara	NY	Niagara Falls	marginal				
Norton	AMC	San Bernardino	CA	San Bernardino	serious				

DRAFT
CLEAN AIR AND THE 1995 BRAC: CONCEPTS AND ISSUES

INTRODUCTION

Closure, realignment, and redirect actions which the Department of Defense proposes for the 1995 BRAC will affect the air quality of several local communities. The Clean Air Act's 1990 Amendments produced new air regulations and concepts, and BRAC actions must comply with these regulations.

Air quality concerns will be most significant for bases located in non-attainment areas which will receive activities as a result of major redirects or realignments. Many such bases will have to perform a conformity determination, and may need to obtain emissions reductions credits in order to demonstrate conformity with the Clean Air Act. This memo defines these and other key air terms and issues, and may assist Commission members and staff in considering the air quality consequences of proposed BRAC actions.

POTENTIAL IMPACT ON BRAC

- Significant time and expense needed to quantify and estimate emissions and write conformity determination.

- A base's draft conformity determination could be challenged by the community or the local air district. If a conformity determination is litigated, reassignment and move schedules could be delayed.

- It may not be possible to make a conformity determination for various reasons (air credits might not be available to obtain, it may not be possible to modify the SIP, etc.) If a conformity determination cannot be attained, the military redirect cannot proceed unless the redirect is downsized or the action is legislatively excluded.

- Potential competition between military and community over air credits in areas where one BRAC installation closes and another one receives activities.

AIR QUALITY TERMS

Attainment area: A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQs) for the pollutant. An area may have an acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus, an area could be both attainment and nonattainment at the same time. Attainment areas are defined using the NAAQs set by EPA.

Non-Attainment area: A geographic area in which levels of a criteria air pollutant does not meet the health-based primary standard.

Maintenance area: An area formerly in nonattainment which has met attainment standards, but which needs to maintain these standards for an established number of years to be reclassified as an attainment area.

Criteria Air Pollutants: Common air pollutants regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution).

State Implementation Plan (SIP): Each state submits to EPA a plan (SIP) designed to attain and maintain national air quality standards according to an established schedule. A SIP consists of a detailed description of the programs a state will use to carry out its responsibilities under the Clean Air Act and a demonstration (using air quality modeling) that the SIP will provide for attainment of the National Ambient Air Quality Standards by the Clean Air Act attainment date.

Conformity: The Clean Air Act prohibits a federal agency from supporting an action unless the responsible federal agency determines that the action conforms to the applicable air quality implementation plan for the area. Examples of actions supported by the federal government might include airport expansion activities, federal construction projects, and review and approval of dredging permits. Conformity to an applicable SIP means that the federal actions:

- will not cause or contribute to new violations of any federal ambient air quality standards;
- will not increase the frequency or severity of any existing violations of federal ambient air quality standards; and
- will not delay the timely attainment of federal ambient air quality standards.

A conformity determination is required when the total of direct and indirect emissions caused by a federal action for any given year of a project in a nonattainment or maintenance area exceed specified low-level annual thresholds for the criteria pollutants.

Offset: A method used in the Clean Air Act to give companies which own or operate major sources in non-attainment areas flexibility in meeting overall pollution reduction requirements when changing production processes. If the owner or operator of the source wishes to increase release of a criteria air pollutant, an offset (a reduction of a somewhat greater amount of the same pollutant) must be obtained either at the same plant or by purchasing offsets from another company in the same nonattainment area..

Emission Reduction Credit (ERC): A type of offset which enables the military (or other federal agency) to quantify the direct and indirect emissions associated with the proposed federal action as a means of making a conformity determination. Local districts can establish banking programs as part of their State Implementation Plans to store qualified emission reduction credits (ERCs) for later use in offset trades. These reductions must be real, permanent, quantifiable, surplus, and enforceable in order to be banked. Air districts can credit only those reduction that go beyond reductions already required in a rule or regulation. Banking programs usually require

that the source apply for the emission reduction credit within a certain time from the date of curtailment or shutdown.

QUESTIONS AND ANSWERS FOR BASES RECEIVING ACTIVITIES IN BRAC 95:

A receiving base is in a non-attainment area and the military needs to demonstrate that new activities can conform to the SIP. How can conformity be demonstrated?

The military can show conformity one of five ways:

1) the total of indirect and direct emissions of the action have specifically been identified in the applicable SIP.
2) Complete emission offsets for certain specified pollutants are obtained for all direct and indirect emissions associated with the proposed military redirect.
3) The action meets the areawide or local modeling criteria set forth in the rule for certain pollutants and modeling demonstrates that the action will not cause additional violations of air quality standards.
4) Where there is no post-1990 EPA-approved SIP for a particular area, the determination is made that the action will not cause a net increase in total emissions compared the appropriate baseline year.
5) The State agrees to revise its SIP to accommodate the action's emissions. The State can agree only if it demonstrates that all other SIP requirements are being implemented, it determines that the military redirect has pursued all reasonable mitigation measures, and the military has completed all the air quality analysis needed for a conformity determination. Thereafter, the State is held accountable to rewrite its SIP for federal approval.

Is a conformity determination required to be made for a closing base?

A closure decision does not require conformity analysis. Disposal of property on a closing base could require it, however, because the military and reuse groups may each seek offsets or air credits which the closure would make available for new uses.

How can a receiving base obtain offsets or emission reduction credits in order to make a conformity determination?

The military has various options for obtaining offsets:

1) Gain offsets from within the base by reducing other emission-generating functions;
2) Obtain offsets or credits from a BRAC 95 closing or realigning base in the same air district;
3) Obtain offsets or credits from prior BRAC realignment or closure in the same air district if it can be determined that these credits are still available;

4) Obtain credits from a market for emissions credits, if such a market exists in the air district.

Bear in mind that the receiving base may be openly competing with reuse or community interests for offsets or credits in options 2 and 3.

Air Issues Impacting Closing, Realigning, and Receiving Bases:

Monetary Constraints: If air credits or planning offsets are not available for installations which will receive activities, the military may need to purchase ERCs in the open market. These credits may not be readily available and may be extremely expensive. Application fees are also part of the transaction costs. The process of applying for air credits can be costly in quantifying emissions, paying application fees, and performing conformity analysis. Prior DoD experience indicates that the cost for a major redirect or realignment ranges from $60,000 to $100,000. Although air credits or offsets from a closing base in a nonattainment areas are valuable, a base commander may be reluctant to spend money from the base's own BRAC cleanup funds to secure air credits which will benefit new activities in the community or other military bases in the area, but won't benefit the base itself.

Time Constraints: Completing a conformity determination and the environmental impact statement often required when a base receives new military activities can require a year or more. The determination must be complete before the new military activities commence.

Quantifying Emissions: Emissions can be difficult to quantify. A base may not have maintained the necessary data that could be used to quantify emissions. Operations may have slowed down from previous levels so that it is difficult to accurately measure true emission levels, further constraining closing bases from applying for emissions. Air districts may have short timelines for applying for credits (for example, 90 days is the limit in California's South Coast district).

Competing demands for credits or planning offsets: Military installations that are remaining open or expanding in their local air basin may need credits or planning offsets for conformity determinations or for new source permits. The military may seek to apply credits or offsets from closing or realigning installations in the same air district to the receiving base, thereby demonstrating conformity for their expanding mission. Meanwhile, reuse groups for the closing installation may be interested in obtaining air credits or planning offsets to win approval from other federal agencies (e.g,, the Federal Aviation Administration) for proposed projects, or as a means of attracting business and revitalizing economic activity at closing bases.

This is in draft still
DoD emission draft policy - Emission trading policy...
What has need | copy of draft
case by case analysis -
AF prefers case-by case analysis policy
Navy et al say, we shared key.

EPA Questions:
Bob Pallarino or Mike Prosper:

What's a precursor to a criteria pollutant? (VOCs, etc.) Are these set out in the law in addition to the criteria pollutants themselves? Where?
What's a maintenence area? What't the difference between a credit and an offset?
How many conformity determinations have been done nationally? Have they been used more often for large industrial relocations or have they also commonly been used for moves which relocate significant numbers of people? If you're just talking about movement of activities within an air district, does that mean that no conform. determ. need be made?

Conformity determ: 1st base closed. By got air credit.

Bob: can you help me think of some kind of a structure or model like a Venn diagram that would help me make sense of conformity vis-a-vis other aspects of the clean air act.
Can I see what a conform. determ. looks like? Who paid for the Castle-Lamoore?
Do air districts always run along geographic air-basin lines? Do they sometimes run along political lines (like counties)? Are they always political entities which are formed by the state and answer to the state, or is this not always the case?

Are there instances in which an area can be in non-attainment but there is no functioning market for air emissions credits? What happens then? Are there areas where credits/offsets are only traded but not sold? → Gral conform rule: You can show conform in lots of ways. State itself could agree to revise SIP to include all emissions that would be captured by a project. A state would agree if fed.
Are the concepts "offsets" and "credits" actually defined in the law? Is there a legal difference between these 2 terms? If a state agrees to accomodate, it would revise its SIP.
EPA could be sort a SIP call by the feds, if they didn't do a right.
Sam Rupe: Castle/Lamoore The baseline that was used to compare reductions to? What was the baseline condition here? 1992/93. Why?
The Castle activities had already ceased, correct? So how were they still available for use?
In which case, what was the method used to capture credits from a prior year?
What's to prevent you from taking emissions from an action that occurred 10 years ago and using that?
At what point are the offsets/credits "stale" -- is the military no longer able to salvage credits from activities which ceased?
Is the military under any obligations to record/buy up/reserve rights on the air credits, even if they have no immediate military need?

1990 seems to be the baseline period year - for most CAA stuff.
Go back to look at air quality district
SIP allocation baseline emission -
15% for VOC's rate of planning - to zero
& go down

Status of Cleanup Actions

Lowrey AFB

Status of NFA Decision Documents: EPA approval of these? what do these NFA activities represent as far as actions completed in CERCLA? Does this mean an NFA ROD will follow closely thereafter or not?

Is base being cleaned up under RCRA or under CERCLA?

If it's under RCRA, what are the remaining activities which shall occur under RCRA?

What is the status of the RFA for the base? It was due in FY 94. What does this mean for the future reuse/cleanup of Lowrey?

176 non-attainment section of clean air act -

1990

District court judge reversed himself -

176 c applies in attainment area.

Do you plan to blend it into its environmental impact.

How to break away for very encounter

$100,000 to do the conformity analysis.

100,000 K.

ATTAINMENT CONCERNS - AIR FORCE
DRAFT INTERNAL MEMO 3/10/95

Air Force -- Major gains (Approximate increases of 300 or more jobs) at the following bases: I don't know which ones are getting additional missions beyond just personnel. I need also to create a list which reflects additional flights and stationary sources.
What kinds of activities within the military are commonly regulated as stationary sources?

[*means in attainment]
*Eglin AFB, FLA
Falcon AFB, CO - El Paso - Mod n/a for CO
From Onizuka
Hanscom AFB, Mass - Bedford - Serious n/a for OZ
Some Rome Lab activities
*Holloman AFB, NM
*Kelly AFB, TX
Lackland AFB, TX -- cannot find on either list
Activities from Kirtland
*Laughlin AFB, TX
MacDill AFB, FL - Tampa - mod n/a for OZ
Activities from Malmstrom
McClellan AFB, CA -- Sacramento -
serious n/a for OZ, moderate n/a for CO, "x" for NO2 and PM10
Activities/flights from NoHighlands Air Guard Station. Moffet Federal Airfield Air Guard Station. Installation functions from Griffiss NY
*Tyndall AF
*Vance AF
Wright-P

Document Separator

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

3 JAN 1995

MEMORANDU

To: McClellan movement? missions at McClellan:

FROM: SAF/M

SUBJECT: Mir EG) Meeting

North Highland
149 CCS com-squad.
162 CCG com-cntl grp

The AF/I at 1030 hours on 30 December 1 personnel were in attendance:

a.

Moffett Federal Afld
129 Rescue Gp

a variety of depot functions from other commodities → ALCs. ↑ of

→ See A7 Vol V, p 59

b.

Mr. Schoenecker, AF/CEV

The meeting was called to order by Maj Gen Blume. He and Mr. Boatright reviewed the current process. Capt Roop, AF/CEV, briefed the estimated Air Quality impacts related to several potential force structure beddowns at Beale AFB, using the slides at Atch 1.

Mr. Schoenecker, AF/CEVP, briefed the economic impact data for Criterion VI, using the computer database display, and the slides at Atch 2. The data reflects changes resulting from OSD revisions to the model, which now uses Bureau of Economic Analysis for 1993 employment figures. The major result of this change is the inclusion of military personnel in the total employment figures, which in most cases results in a lower, but more accurate, percentage impact of closure actions. The other change is to use a different civilian multiplier in some cases.

Beale: Scenario 1

(No KC135E On-Station)

BCEG Action	Conformity Analysis	Emissions Above 1990 Baseline	Status
Add AFSOC	YES	28 NOx 0 VOC	G
Add AFSOC Add ANG	YES	45 NOx 0 VOC	Y
Add AFSOC Add 12 B-52H	YES	129 NOx 64 VOC	R
Add AFSOC Add 12 B-52H Add ANG	YES	146 NOx 93 VOC	R

Beale	Status
Attainment	Y
Restriction	R
Future Growth	Y

(Capt Roop/73360/CEVC/30Dec94)

ATCH 1

Beale: Scenario 3

(Convert KC135E to KC135R)

BCEG Action	Conformity Analysis	Emissions Above 1990 Baseline	Status
Add 12 B-52H	YES	88 NOx 0 VOC	Y
Add AFSOC	YES	97 NOx 0 VOC	Y
Add AFSOC Add ANG	YES	114 NOx 0 VOC	R
Add 12 B-52H Add ANG	YES	126 NOx 85 VOC	R

Beale	Status
Attainment	Y
Restriction	R
Future Growth	Y

(Capt Roop/73360/CEVC/30Dec94)

ECONOMIC AREAS IN METROPOLITAN AREAS

- BCEG Request it be brought up with OSD Cross-Service Group
  - Brought to OSD Working Group for Cross-Service Group on Economic Impact on 31 October
  - OSD, Army & Navy do not see the feasibility of implementing dual systems, even for final closure decisions

ECONOMIC AREAS IN METROPOLITAN AREAS

- Panel of experts reviewed proposed system in May
  - They knew metro economic areas was based on OMB-Census Bureau designations - - no objections raised
- OSD would be glad to meet with BCEG on this matter if requested

ECONOMIC AREAS IN METROPOLITAN AREAS

- Rationale of OSD, Army & Navy
  - OMB-Census Bureau system of MSA designations, while definitely not perfect, is only defensible system
    - Has evolved over the decades
    - Subject to written procedures and guidelines
    - Subject to public review
  - Major problems with two employment impact criteria
    - Will cause technical confusion and political problems
    - Developing subcounty data base would be prohibitively expensive

SUBJECTS OF DISCUSSION

- Update on the impacts on all notional closure
  - OSD has advised as model is updated
  - Input data has been updated
- Discuss issue of two employment impact indicators per economic area as raised by BCEG

Beale: Scenario 2

(With KC135E On-Station)

BCEG Action	Conformity Analysis	Emissions Above 1990 Baseline	Status
Add AFSOC	YES	70 NOx 0 VOC	Y
Add AFSOC Add ANG	YES	99 NOx 0 VOC	Y
Add 12 B-52	YES	70 NOx 119 VOC	Y
Add 12 B-52H Add ANG	YES	108 NOx 143 VOC	R

Beale	Status
Attainment	Y
Restriction	R
Future Growth	Y

(Capt Roop/73360/CEVC/30Dec94)

Mr. Schoenecker also briefed an action the BCEG had requested him to address with the JCSG involving the use of more localized economic data, rather than large MSAs. After discussing this issue, the JCSG declined to incorporate two different economic areas into the analysis. The BCEG then reviewed all bases and their economic impact data, and concluded that the changes did not alter their evaluations.

There being no further matters to discuss, the meeting was adjourned at 1200. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS: Squadron size and number of units White Paper

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. Air Quality
2. Economic Data

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

20 FEB 1995

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 29 December 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen McGinty, AF/DPP
Mr. Orr, AF/LGM
Dr. Wolff, AF/CE
Mr. Durante, SAF/AQX
Mr. Kuhn, SAF/GCN
Brig Gen Newell, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Col Walters, AF/PE
Mr. Mleziva, AF/BCWG
Lt Col Wise, AF/CEV
Capt Roop, AF/CEV

The meeting was called to order by Mr. Boatright. He addressed several administrative items that need some attention. First, he asked the AF/XO representative to work with the Recorder to make sure that operational concerns that influenced SECAF guidance/decisions are accurately described in our Minutes. He also discussed the JCSG process clarification just issued by OSD (Atch 1). As a result of this clarification, he tasked the BCWG to begin analysis of the alternatives identified by the Chairman of the LJCSG which were not derived from the JCSG analysis but, instead, from a separate analysis accomplished by her staff. He cautioned the BCWG not to respond to similar alternatives identified by the Co-Chairmen of the JCSG-TE until a supporting analysis was provided. Finally, he requested that the AF/XO representative provide

a briefing to the BCEG on the final force structure that had just recently been issued by the Deputy Secretary of Defense, since this may affect the analysis accomplished thus far.

Mr. Orr discussed the recent agreement among the Services to use a common method of measuring manpower requirements to support proposed moves of depot workload. Because the Air Force method differs from the other Services, the data provided to the other Services must be recalculated. The working group members for depot matters are working this issue.

Lt Col Wise, AF/CEV, briefed estimated environmental restoration costs at some of the candidate bases, using the slide at Atch 2. This information is useful for forecasting the budget requirement that will likely be encountered from closing bases. Historically, only the first year funding requirements have been transferred from DERA to the Base Closure Account. As a result, there is a draw on other Air Force budget resources to fund the environmental restoration at closure bases. It was noted that Bergstrom is currently funded under the Base Closure Account since this was a realignment from an earlier BRAC round.

Mr. Mleziva, AF/BCWG, briefed Lab and Product Center updates, using the slides at Atch 3. Some of the figures are not complete, especially those that rely on other service information, such as the option to move the Rome Lab operation to Ft Monmouth. It was noted that the proposal from the JCSG to move Rome Lab to Ft Monmouth would create a Rome Lab organization at Ft Monmouth, rather than absorbing Rome Lab's work into Ft Monmouth. The BCEG also discussed which portions of Kirtland would remain after realignment, since some significant facilities would remain in cantonment or in stand alone status.

Capt Roop, AF/CEVP, briefed results of Air Quality considerations for some proposed moves resulting from closures and realignments, using the slides at Atch 4. The colors represent the feasibility of making the proposed move. The BCEG will be called upon to make any final determination of the advisability of the move, and the SECAF will determine any closures or recommendations using this information. The BCEG requested present alternative moves be examined for Air Quality feasibility.

There being no further matters to discuss, the meeting was adjourned at 1245. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS: Squadron size and number of units White Paper
Beale AFB Air Quality considerations

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. OSD Policy
2. Env Costs
3. Lab update
4. Air Quality

ASSISTANT SECRETARY OF DEFENSE

3300 DEFENSE PENTAGON
WASHINGTON DC 20301-3300

ECONOMIC SECURITY

December 27, 1994

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR OF ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: **1995 Base Realignments and Closures (BRAC 95) -- Clarification of the Joint Cross-Service Group Functional Analysis Process**

The Deputy Secretary's January 7, 1994, memorandum initiating the BRAC 95 process established the authority for the functional joint cross-service groups to provide closure and realignment alternatives for Military Department analysis. This memorandum clarifies that policy.

As described in Policy Memorandum Two, the Military Departments will analyze alternatives provided for their consideration by the Joint Cross Service Groups. Alternatives provided by the Chairperson of the JCSG's should be analyzed by the Military Departments whether they are, or are not, consensus of all the members of the JCSG.

Policy Memorandum Two also notes that the JCSG's will use a linear programming optimization model as a tool, a "basis for further analysis and the application of judgment". A JCSG, its Chair or Co-Chair, may recommend for analysis by the Military Departments configurations other than those that are the result of particular runs of the optimization model. This will allow Military Department analysis of the broadest possible range of interservicing alternatives within the Department's BRAC 95 process.

Some JCSG alternatives may prove infeasible, or the volume of these alternatives may preclude timely analysis of each proposal. The Chairperson of the JCSG's may withdraw alternatives from further analysis, or prioritize alternatives to ensure that the most significant proposals receive timely and thorough cost and feasibility analysis.

for Robert E. Bayer
Joshua Gotbaum

ATCH 1

Lab & Product Center

Mleziva
29 Dec 94

Purpose

- LJCSG Analysis
  - Approve RL, Rome Updated Decision Data
  - Approve AL, Mesa Updated Decision Data
- AF Tier II/III Bases
  - Approve SMC Decision Data
  - Approve PL Decision Data
  - Approve Brooks AFB Decision Data

ATCH 3

Criteria IV & V

SMC, Los Angeles, CA

	1-Time Cost ($M)	20 YR NPV ($M)	Steady State Savings	ROI	Pers Savings
To McClellan/Hill	429	(141)	48	10	283

Considerations:

- Includes FFRDC Costs
- Includes Expensive Equipment (~$125M) Move Costs
- Peterson Not Viable -- Air Quality

Criteria IV & V

Philips Lab, Kirtland AFB, NM

	1-Time Cost ($M)	20 YR NPV ($M)	Steady State Savings	ROI	Pers Savings
To McClellan/Hill*	448	(469)	81	6	1492

Considerations:

- Quality of Kirtland Facilities
- MILCON Assumes Modified Construction at Destination
- Includes Very Expensive Equipment (~$1.3B) Move Costs
- Peterson Not Viable -- Air Quality

*Previously Presented to BCEG

BCEG CLOSE HOLD

Receiver Bases in Nonattainment Area for Candidate Closures

Gaining Base	BCEG Action (Aircraft & Personnel Realignment)	Conformity Analysis Required	Emissions Above 1990 Baseline	Status
Beale AFB	Add 12 B-52 Aircraft with 1184 Personnel * KC135E are On-Station	YES	70 NO_x 119 VOC	Y
Beale AFB	Add 12 B-52 Aircraft with 1184 Personnel * KC135E Convert to KC135R	YES	88 NO_x 0 VOC	Y
Beale AFB	Add 12 B-52H Aircraft with 1184 Personnel * Minus 8 KC135E	YES	26 NO_x 0 VOC	G
McClellan AFB	8 KC135E Remain in Place	NO	N/A	G
Hill AFB	Add 8 KC-135E Aircraft with 570 Personnel	YES	0 NO_x 0 VOC	G
Edwards AFB	Add 8 KC-135E Aircraft with 570 Personnel	YES	153 NO_x 0 VOC	R
McChord AFB	Add 12 B-52H Aircraft with 1184 Personnel	YES	114 NO_x 369 VOC 1328 CO	R
Beale AFB	Add AFSOC * KC135E are On-Station	YES	70 NO_x 0 VOC	Y
Dover AFB	Add 14 C-5A Aircraft with 958 Personnel	YES	180 NO_x 82 VOC	R
MacDill AFB	Add 24 KC-135R Aircraft with 1413+ Personnel	YES	0 NO_x 0 VOC	G
Kirtland AFB	Add 635 Personnel (Scott)	YES	180 CO	Y
Hanscom AFB	Add 869 Personnel (Rome)	NO	N/A	G
Hill AFB	Add 1172 Personnel (Kirtland)	NO	N/A	G
Hill AFB	Add 3353 Personnel * LAAFB and Kirtland	NO	N/A	G

G= Green (BCEG Emissions are Less Than or Equal to 1990 Baseline)

Y= Yellow (BCEG Emissions are Within Reasonable Range of the 1990 Baseline)

R= Red (BCEG Emissions are Significantly Greater Than 1990 Baseline)

(Capt Roop/CEVC/73360/28Dec94)

ATCH 84

Air Conformity Determination Equation

$$\left[\left(Aircraft_{1990} \pm Aircraft_{1997}\right) + Aircraft_{BRAC}\right] + \left[\left(Personnel_{1990} \pm Personnel_{1997}\right) + Personnel_{BRAC}\right] + Facilities_{BRAC}$$

Sources of Difference

Recurring Costs

Prior: $7.2M/yr

Data Source

Data Conflict
- ACC Data
- AFMC Data

Current: $11.9M/yr

Data Source

Updated Program Plan
Historical Actuals

Validation

AF/CEP validated
COBRA-internally consistent

Criteria IV & V

Rome Lab, NY to Hanscom AFB, MA

	1-Time Cost ($M)	20 YR NPV ($K)	Steady State	ROI	Pers Savings
Rome Lab (prior)	133	111	1	100+	5
Rome Lab (current)	78	(15)	8*	11	26

*Details being confirmed

Criteria IV & V

Philips Lab, Kirtland AFB, NM

	1-Time Cost	20 YR NPV	Steady State	ROI	Pers Savings
To McClellan/Hill*	448	(469)	81	6	1492
To Peterson AFB			TBD		
+SMC to Peterson AFB			TBD		

Considerations:

- Quality of Kirtland Facilities
- MILCON Assumes Modified Construction at Destination
- Includes Very Expensive Equipment (~$1.3B) Move Costs

*Previously Presented to BCEG

Criteria IV & V

Brooks AFB,TX

	1-Time Cost	20 YR NPV	Steady State	ROI	Pers Savings
To Wright-Patterson AFB*	246	(78)	28	10	438

Considerations:

- MILCON Assumes New Construction at WPAFB
- One Time Unique Cost Assumption Being Reviewed

* Previously Presented To BCEG

Criteria IV & V

Armstrong Lab, Mesa, AZ

	1-Time Cost ($M)	20 YR NPV ($K)	Steady State	ROI	Pers Savings
To Orlando	19.1	15	0.5	100+	2
To Luke AFB	18.5	(28)	3.8	4	2
To Brooks AFB	19.1	(-26)	3.7	4	2

Considerations:

- BRAC '91 Orlando Move Decision
- BRAC '93 NAWC Orlando Closure Decision
- Aircrew Research Subjects Availability
- AF OL at Orlando for Joint Matters

Criteria IV & V

SMC, Los Angeles, CA

	1-Time Cost	20 YR NPV	Steady State	ROI	Pers Savings
To McClellan/Hill	XX	YY	ZZ	AA	BB
To Kirtland*	450	(142)	50	10	325
To Peterson AFB			TBD		
+PL to Peterson AFB			TBD		

Considerations:

- MILCON Assumes New Construction at Destination
- Includes FFRDC Costs
- Includes Expensive Equipment (~$125M) Move Costs
- Kirtland Not Viable -- Air Quality

*Previously Presented to BCEG

Receiver Bases in Nonattainment Area for Candidate Closure

Gaining Base	BCEG Action (Aircraft & Personnel Realignment)	Conformity Analysis Required	Emissions Above 1990 Baseline	Status
March AFB	Add 8 KC-135E Aircraft with 570 Personnel	YES	193 VOC 403 CO	R
March AFB	Add 8 KC-135E Aircraft with 570 Personnel Add 14 C-5 Aircraft with 958 Personnel	YES	264 VOC 817 CO	R

G= Green (BCEG Emissions are Less Than or Equal to 1990 Baseline)
Y= Yellow (BCEG Emissions are Within Reasonable Range of the 1990 Baseline)
R= Red (BCEG Emissions are Significantly Greater Than 1990 Baseline)

(Capt Roop/CEVC/73360/28Dec94)

Criteria IV & V

Brooks AFB,TX

	1-Time Cost ($M)	20 YR NPV ($M)	Steady State Savings	ROI	Pers Savings
To Wright-Patterson AFB*	246	(78)	28	10	438
To Wright-Patterson AFB	264	(62)	28	11	397

Considerations:

- Cntr for Environ Excel Disposition

* Previously Presented To BCEG

Criteria IV & V

Rome Lab, NY

	1-Time Cost ($M)	20 YR NPV ($M)	Steady State Savings	ROI	Pers Savings
Remain at Rome, NY	N/A	N/A	N/A	N/A	0
Move to Hanscom AFB	76	(84)	12	6	64
Move to Hanscom AFB (With PL Reduction)	64	(98)	12	5	64
Move to Ft Monmouth*	TBD	TBD	TBD	TBD	TBD

* Transmitted to Army for inputs on 22 Dec 94

Criteria IV & V

Armstrong Lab, Mesa, AZ

	1-Time Cost ($M)	20 YR NPV ($M)	Steady State Savings	ROI	Pers Savings
Remain at Mesa, AZ	N/A	N/A	N/A	N/A	0
Move to Orlando*	18.1	4.8	0**	Never	0
Move to Luke AFB	15.4	(2.7)	1.4	11	2
Move to Brooks AFB	16.5	3.9	1.0	22	2
Move to WPAFB	16.7	2.5	1.2	18	2
Move to Eglin AFB	14.4	2.4	1.0	19	2

Considerations:

- BRAC '93 NAWC Orlando Closure Decision
- Aircrew Research Subjects Availability
- AF OL at Orlando for Joint Matters

*	BRAC '91 Decision -- **Any Other Decision Requires Redirect**
**	Assumes Orlando Identical to Mesa, AZ

Defense Environmental Restoration Account
Installation Status

MAJCOM	Base	Cost-to-Complete (FY96-Comp)
ACC	Bergstrom	$48,600
MTC	Brooks	$1,193
ACC	Ellsworth	$48,116
AMC	Grand Forks	$24,912
MTC	Kelly	$416,528
SPC	Los Angeles	N/A
ACC	Minot	$2,697
SPC	Onizuka	$1,463
AFR	Pittsburgh	$61
AETC	Reese	$98,921
	Total	$642,492
Average $/base shown		$64,249
Average $/base (w/out ALC)		$22,596

Document Separator

Lam
Incl, encl

Talk w/ EPA.

Notes/Questions 3/3/95

Air Issues
Conformity
Report of contact: Bob Pallarino (415) 744-1212

Contacts: Rose Quiento EPA Region III (215) 597 3164
3/9/95 spoke w/Kathleen Henry. This situation falls under the issue of transportation conformity analysis. Larry Budney EPA/III (215)597-7661.
Virginia does have a SIP; can be used to base conformity analysis on.
Norfolk VA (Oceana) is in the Hampton Roads area; of the stages for nonattainment (1 marginal, 2 moderate, 3 serious, 4 severe, 5 extreme). Norfolk is in moderate non-attainment
State of VA DEQ Acting Air Division Dtr John Daniel (804) 762 4007

Need to call Atlanta region to get their side of the story. → not available. will try later.

US EPA Attorneys on conformity Mike Prosper (703) 235 5329 and Sarah Schneeberg (703) 235-5332

Call the TI guy to find out how/when determ was made to move bodies to Travis, Lamoore

BASELINE

Baseline: Virginia: Is there a SIP in place? It can only be used as a baseline if EPA has approved it.

What is your baseline and how do you apply a future action against it? What part of the SIP do I use? (Alisan: commonly use 1990 or the last time that a comprehensive determination was made.)

Where EPA has not approved a revision to the relevant SIP attainment or maintenance demonstration since 1990, the baseline emissions reflect the historical activity levels that occurred in the geographic area affected by the proposed Federal action during one of the following:

1) 1990 calender year (year the amendments were passed; it's commonly used — [Yet, 1992/3 was years selected for Castle Lamoore.])
2) the calendar year that is the basis for the designation (or where the designation is based on multiple years, the most representative year,), if a designation is promulgated in 40 CFR Part 81, or
3) The year of the baseline inventory in the PM-10 applicable SIP.

In the case of Northern Virginia, which baseline is applicable?

TIMING: does a decision to redirect missions require a conf. determ. already to have been done?

A conformity determination will be required. When? I understand that a conformity determination must be made before action takes place. Does this mean that conformity determination must be in place before the agency makes the decision to move the activities? Therefore, does the conformity determination have to be issued before the closure decision can become final?

Alisan: it's potentially a sleeper issue. Pres., congress is not a fed agency. (Yet, surely, the closure commiss. would want to have conform. determ. in hand before it made a decision about where to go.)

Does the conformity determination deal specifically with the issue of whether a particular contaminant is of concern (ozone, carbon monoxide, etc.) or does it not attempt to separate out particular types of contaminants?

How do they make sure it operates effectively within the SIP?

How do you work with the SIP in making a conformity determination? Who are the lead people (w/in service and to deal w/ regulatory agencies) when it comes down to writing a conform determ?
How much time does it take? How much does it cost? → cost & compliance.
What's the relationship between the conform determ and the EIS for the conform determ? Is it a separate EIS from the disposal EIS or not?
Is it important for us to distinguish this receiving action between transportation and general conformity, or does it matter? Follow both Subpart T & Subpart W, or just W?
Relationship between GENERAL Conformity and TRANSPORTATION Conformity:
Are rules for Transportation conformity promulgated yet?
When we're talking about a military facility, do we consider transportation conformity together with general conformity? Or is it an either/or thing?

Be aware: if the base if located in a MAINTENENCE area, they appear to need a conformity determination just as they do in a non-attainment area. True?

Order for these:
- Base closure
- Formal decision/agreement to move
- conformity determination
- EIS ROD

Cross service offsets - air-district wide plan equivalent CAA.

Questions for Virginia Air District:
Is a SIP in effect? When was it passed? When was it submitted to EPA? Has EPA approved it?

Alison Lyng:
What is the status of the conformity determinations for the actions to realign the Navy sites?
What is the status of the corresponding EIS documents?
What is the importance of future year emissions?

Issues:
Conformity determination -- length of time it takes to write it.
Not an open-and -shut deal.

Subpart T (Transportation conformity)
Subpart W (General Conformity)
Notes on conformity preamble:
3 main parts to the rule:
Applicability
Procedure

Analysis

Applicability: the Rule covers direct and indirect emissions of criteria pollutants or their precursors that are caused by a federal action, are reasonably forseeable, and can practicably be controlled by the Fed agency through its continuing program responsibility.
Gen. conformity rule applies to Fed actions except:

- Those covered by transportation conformity rule
- actions with emissions below de minimis levels
- Certain actions which are exempt or presumed to conform

Procedure: Federal agencies make conformity determinations & subject them to public review. Provide public notice.

Analysis: Examine impact from direct and indirect emissions. Several options are provided to satisfy air quality criteria. Fed action req'd to meet SIP req'ts and emission milestones.
Each federal agency must determine that any actions covered by the rule conform to the applicable SIP before the action is taken.

This conformity rule applies only to non-attainment areas at present.

CONFORMITY: "[D]efined in section 176(c) of the Act as conformity to the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieveing expeditious attainment of such standards, and that such standards will not:
(1)Cause or contribute to any new violation of any standard in any area,
(2)Increase the frequency or severity of any existing violation of any standard in any area,
(3)Delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.."

A federal action must not adversely affect the timely attainment and maintenence of the NAAQs or emission reduction progress plans leading to attainment. A new emphasis on reconciling the emissions from Federal actions with the SIP, rather than simply providing for the implementation of SIP measures. Help protect the integrity of the SIP.

Indirect Emissions: Inclusive and Exclusive.
Exclusive: "...and which the agency has and will continue to maintain some authority to control."

Relocations of personnel at receiving bases due to base closures: these must be considered as part of the indirect emissions over which the federal agency has control.

How worthy able to grab offsets from prior point in time & and make the happy.

p. 15 Q & A:
Using the bubble approach to offset emissions: Are bubbling activities and emissions offsets from 2 different activities allowed under the conformity rule if the 2 activities are not occurring within the same time frame?
If you take an increase in activities in a realignment today and then try to appy future planned emissions reductions to that as a way to make it conform, you're not following the rules

correctly. You have to time the actions "in such a way so that there is no increase in emissions at any time." But what about taking a cut in 1990 and then recapturing it in 1996? Is this acceptable?

Offsets: (p 21) If you're using offsets for your conformity stuff, the offsets have to be:
1 Quantifiable
2 Consistent (with SIP attainment & RFP determination)
3 Surplus to other reductions already being designed
4 Enforceable
5 Permanent

Is emissions banking in place, and can it be used here?

3.8.95

To: Jim Brubaker

From: Deirdre Nurre

RE: Need for Data on Proposed Redirects of 1993 Recommendations --
Miramar missions to Oceana; Cecil Field missions to Oceana and Atlanta

Please transmit the following questions to your Navy counterpart when you meet with him or her on March 9:

Where in the Navy's backup data can we find additional information regarding the conformity determinations for the two redirects mentioned above?

Who is the appropriate Navy contact for the air attainment and conformity issues that are raised by these two redirects? What's his or her number?

Thank you.

Document Separator

March 21 1995

To: Commissioners
David Lyles
Charlie Smith
Madeline Creedon
~~CeCe Carman~~
Ben Borden Ben B.
R&A Team Leads

From: Deirdre Nurre, Interagency Environmental Analyst

Through: Bob Cook, Interagency Team Leader 3/21

RE: Air Quality Issues Affecting BRAC 95 Recommendations

Attached is a draft point paper on air quality issues which may assist Commission members and staff in considering the air quality consequences of proposed BRAC actions. Please note that the paper is in draft and is distributed for the use of Commission members and staff only.

If you need additional information regarding air quality issues, please contact me at extension 164.

Attachment

DRAFT
CLEAN AIR AND THE 1995 BRAC: CONCEPTS AND ISSUES

INTRODUCTION

Closure, realignment, and redirect actions which the Department of Defense proposes for the 1995 BRAC will affect the air quality of several local communities. The Clean Air Act's 1990 Amendments produced new air regulations and concepts, and BRAC actions must comply with these regulations.

Air quality concerns will be most significant for bases located in non-attainment areas which will receive activities as a result of major redirects or realignments. Many such bases will have to perform a conformity determination, and may need to obtain emissions reductions credits in order to demonstrate conformity with the Clean Air Act. This memo defines these and other key air terms and issues, and may assist Commission members and staff in considering the air quality consequences of proposed BRAC actions.

POTENTIAL IMPACT ON BRAC

- Significant time and expense needed to quantify and estimate emissions and write conformity determination.

- A base's draft conformity determination could be challenged by the community or the local air district. If a conformity determination is litigated, reassignment and move schedules could be delayed.

- It may not be possible to make a conformity determination for various reasons (air credits might not be available to obtain, it may not be possible to modify the SIP, etc.) If a conformity determination cannot be attained, the military redirect cannot proceed unless the redirect is downsized or the action is legislatively excluded.

- Potential competition between military and community over air credits in areas where one BRAC installation closes and another one receives activities.

AIR QUALITY TERMS

Attainment area: A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQs) for the pollutant. An area may have an acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus, an area could be both attainment and nonattainment at the same time. Attainment areas are defined using the NAAQs set by EPA.

Non-Attainment area: A geographic area in which levels of a criteria air pollutant does not meet the health-based primary standard.

Maintenance area: An area formerly in nonattainment which has met attainment standards, but which needs to maintain these standards for an established number of years to be reclassified as an attainment area.

Criteria Air Pollutants: Common air pollutants (such as carbon monoxide, ozone) regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution).

State Implementation Plan (SIP): Each state submits to EPA a plan (SIP) designed to attain and maintain national air quality standards according to an established schedule. A SIP consists of a detailed description of the programs a state will use to carry out its responsibilities under the Clean Air Act and a demonstration (using air quality modeling) that the SIP will provide for attainment of the National Ambient Air Quality Standards by the Clean Air Act attainment date.

Conformity: The Clean Air Act prohibits a federal agency from supporting an action unless the responsible federal agency determines that the action conforms to the applicable air quality implementation plan for the area. Examples of actions supported by the federal government might include airport expansion activities, federal construction projects, and review and approval of dredging permits. Conformity to an applicable SIP means that the federal actions:

- will not cause or contribute to new violations of any federal ambient air quality standards;
- will not increase the frequency or severity of any existing violations of federal ambient air quality standards; and
- will not delay the timely attainment of federal ambient air quality standards.

A conformity determination is required when the total of direct and indirect emissions caused by a federal action for any given year of a project in a nonattainment or maintenance area exceed specified low-level annual thresholds for the criteria pollutants.

Offset: A method used in the Clean Air Act to give companies which own or operate major sources in non-attainment areas flexibility in meeting overall pollution reduction requirements when changing production processes. If the owner or operator of the source wishes to increase release of a criteria air pollutant, an offset (a reduction of a somewhat greater amount of the same pollutant) must be obtained either at the same plant or by purchasing offsets from another company in the same nonattainment area..

Emission Reduction Credit (ERC): A type of offset which enables the military (or other federal agency) to quantify the direct and indirect emissions associated with the proposed federal action as a means of making a conformity determination. Local districts can establish banking programs as part of their State Implementation Plans to store qualified emission reduction credits (ERCs) for later use in offset trades. These reductions must be real, permanent, quantifiable, surplus, and enforceable in order to be banked. Air districts can credit only those reduction that go beyond reductions already required in a rule or regulation. Banking programs usually require

that the source apply for the emission reduction credit within a certain time from the date of curtailment or shutdown.

QUESTIONS AND ANSWERS FOR BASES RECEIVING ACTIVITIES IN BRAC 95:

A receiving base is in a non-attainment area and the military needs to demonstrate that new activities can conform to the SIP. How can conformity be demonstrated?

The military can show conformity one of five ways:

1) the total of indirect and direct emissions of the action have specifically been identified in the applicable SIP.
2) Complete emission offsets for certain specified pollutants are obtained for all direct and indirect emissions associated with the proposed military redirect.
3) The action meets the areawide or local modeling criteria set forth in the rule for certain pollutants, and modeling demonstrates that the action will not cause additional violations of air quality standards.
4) Where there is no post-1990 EPA-approved SIP for a particular area, the determination is made that the action will not cause a net increase in total emissions compared the appropriate baseline year.
5) The State agrees to revise its SIP to accommodate the action's emissions. The State can agree only if it demonstrates that all other SIP requirements are being implemented, it determines that the military redirect has pursued all reasonable mitigation measures, and the military has completed all the air quality analysis needed for a conformity determination. Thereafter, the State is held accountable to rewrite its SIP for federal approval.

Is a conformity determination required to be made for a closing base?

A closure decision does not require conformity analysis. Disposal of property on a closing base could require it, however, because the military and reuse groups may each seek offsets or air credits which the closure would make available for new uses.

How can a receiving base obtain offsets or emission reduction credits in order to make a conformity determination?

The military has various options for obtaining offsets:

1) Gain offsets from within the base by reducing other emission-generating functions;
2) Obtain offsets or credits from a BRAC 95 closing or realigning base in the same air district;
3) Obtain offsets or credits from prior BRAC realignment or closure in the same air district if it can be determined that these credits are still available;

4) Obtain credits from a market for emissions credits, if such a market exists in the air district.

Bear in mind that the receiving base may be openly competing with reuse or community interests for offsets or credits in options 2 and 3.

Air Issues Impacting Closing, Realigning, and Receiving Bases:

Monetary Constraints: If air credits or planning offsets are not available for installations which will receive activities, the military may need to purchase ERCs in the open market. These credits may not be readily available and may be extremely expensive. Application fees are also part of the transaction costs. The process of applying for air credits can be costly in quantifying emissions, paying application fees, and performing conformity analysis. Prior DoD experience indicates that the cost for a major redirect or realignment ranges from $60,000 to $100,000. Although air credits or offsets from a closing base in a nonattainment areas are valuable, a base commander may be reluctant to spend money from the base's own BRAC cleanup funds to secure air credits which will benefit new activities in the community or other military bases in the area, but won't benefit the base itself.

Time Constraints: Completing a conformity determination and the environmental impact statement often required when a base receives new military activities can require a year or more. The determination must be complete before the new military activities commence.

Quantifying Emissions: Emissions can be difficult to quantify. A base may not have maintained the necessary data that could be used to quantify emissions. Operations may have slowed down from previous levels so that it is difficult to accurately measure true emission levels, further constraining closing bases from applying for emissions. Air districts may have short timelines for applying for credits (for example, 90 days is the limit in California's South Coast district).

Competing demands for credits or planning offsets: Military installations that are remaining open or expanding in their local air basin may need credits or planning offsets for conformity determinations or for new source permits. The military may seek to apply credits or offsets from closing or realigning installations in the same air district to the receiving base, thereby demonstrating conformity for their expanding mission. Meanwhile, reuse groups for the closing installation may be interested in obtaining air credits or planning offsets to win approval from other federal agencies (e.g,, the Federal Aviation Administration) for proposed projects, or as a means of attracting business and revitalizing economic activity at closing bases.

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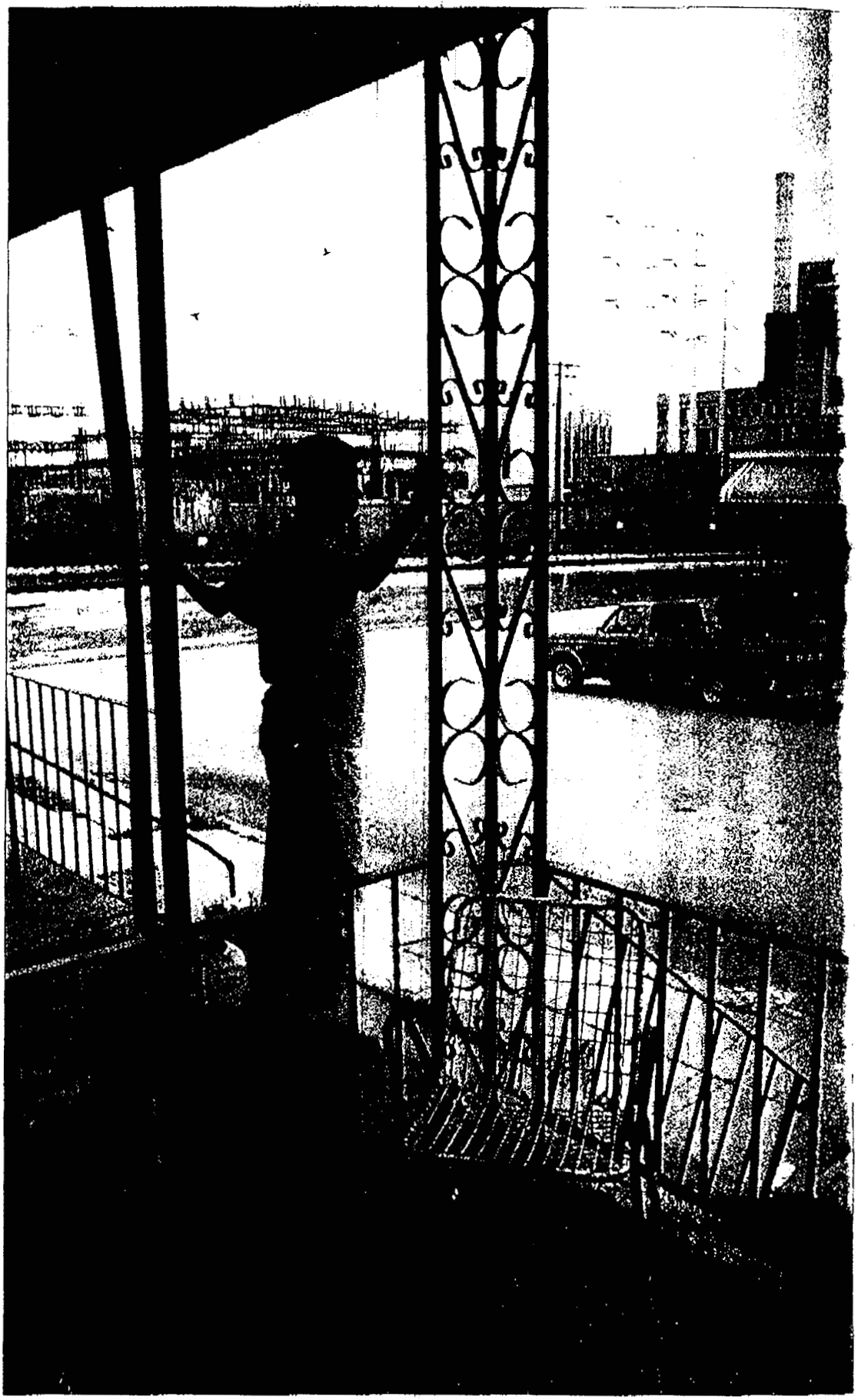

The Clean Air Act: The promise of cleaner air for all Americans.

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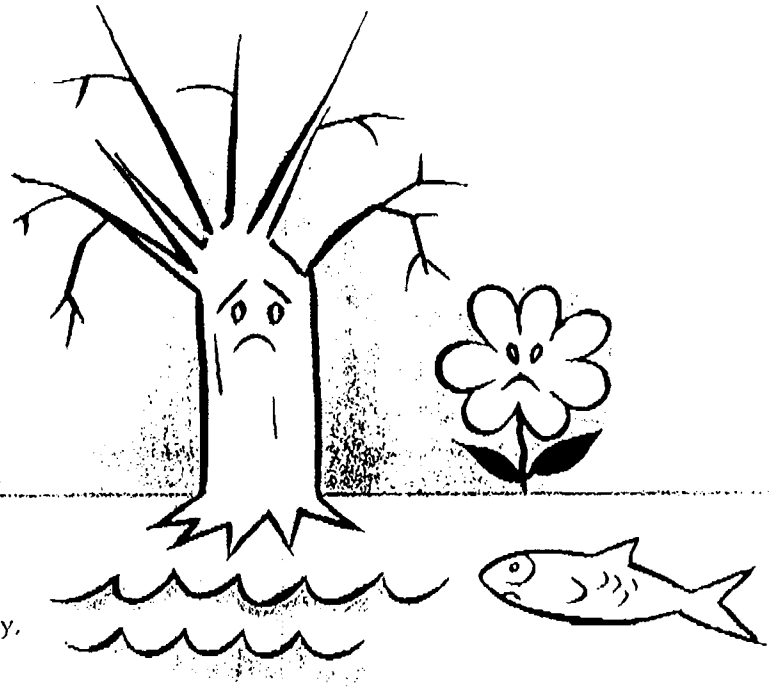
Why should you be concerned about air pollution?



Air pollution can make you sick. It can cause burning eyes and nose and an itchy, irritated throat, as well as trouble in breathing. Some chemicals found in polluted air cause cancer, birth defects, brain and nerve damage and long-term injury to the lungs and breathing passages. Some air pollutants are so dangerous that accidental releases can cause serious injury or even death.

Air pollution can damage the environment. Trees, lakes and animals have been harmed by air pollution. Air pollutants have thinned the protective ozone layer above the Earth; this loss of ozone could cause changes in the environment as well as more skin cancer and cataracts (eye damage) in people.

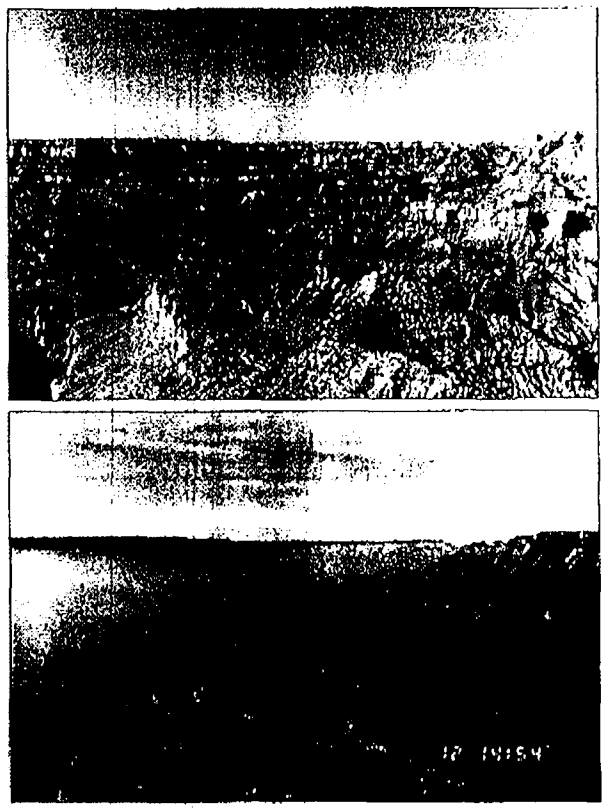
Air pollution can damage property. It can dirty buildings and other structures. Some common pollutants eat away stone, damaging buildings, monuments and statues.

Air pollution can cause haze, reducing visibility in national parks and sometimes interfering with aviation.

The Clean Air Act will improve air quality in the United States, a good thing for your health, your property and the environment. The 1990 Act[1] could change the way you work or do business, and it could, in some ways, change the way you live. The 1990 Clean Air Act is lengthy—about 800 pages—because it tackles many difficult and complicated air pollution problems.

We have prepared this summary of the 1990 version of the Clean Air Act because we think everyone should understand what is in the law and how it may affect them.

This summary is only a brief introduction to the 1990 Clean Air Act. If you want more information, please contact your regional office of the Environmental Protection Agency (EPA) or your state, city, regional or local air pollution control agency. You'll find a list of addresses and telephone numbers of EPA regional offices and state and other air pollution control agencies at the end of this summary.



Grand Canyon National Park. Top: A clear day. Bottom: Haze.

[1] The 1990 Clean Air Act is the most recent version of a law first passed in 1970. The 1990 ammendments made major changes in the Clean Air Act. This summary covers some of the important provisions of the 1990 Clean Air Act.

Features of the 1990 Clean Air Act

The role of the federal government and the role of the states

Although the 1990 Clean Air Act is a federal law covering the entire country, the states do much of the work to carry out the Act. For example, a state air pollution agency holds a hearing on a permit application by a power or chemical plant or fines a company for violating air pollution limits.

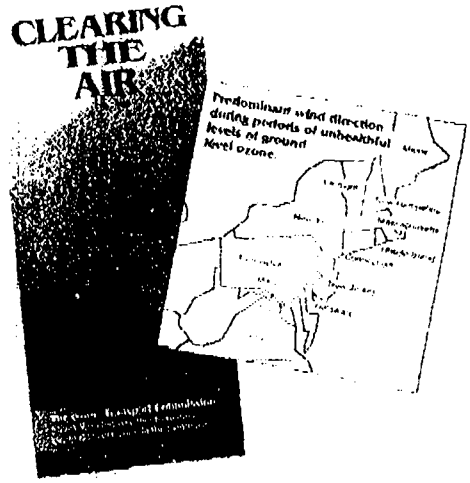
Under this law, EPA sets limits on how much of a pollutant can be in the air anywhere in the United States. This ensures that all Americans have the same basic health and environmental protections. The law allows individual states to have stronger pollution controls, but states are not allowed to have weaker pollution controls than those set for the whole country.

The law recognizes that it makes sense for states to take the lead in carrying out the Clean Air Act, because pollution control problems often require special understanding of local industries, geography, housing patterns, etc.

States have to develop **state implementation plans (SIPs)** that explain how each state will do its job under the Clean Air Act. A state implementation plan is a collection of the regulations a state will use to clean up polluted areas. The states must involve the public, through hearings and opportunities to comment, in the development of each state implementation plan.

EPA must approve each SIP, and if a SIP isn't acceptable, EPA can take over enforcing the Clean Air Act in that state.

The United States government, through EPA, assists the states by providing scientific research, expert studies, engineering designs and money to support clean air programs.



State governments from Maine to Virginia, the government of the District of Columbia, and the U.S. Environmental Protection Agency are working together through the Ozone Transport Commission to reduce smog on the East Coast.

Interstate air pollution

Air pollution often travels from its source in one state to another state. In many metropolitan areas, people live in one state and work or shop in another; air pollution from cars and trucks may spread throughout the interstate area. The 1990 Clean Air Act provides for interstate commissions on air pollution control, which are to develop regional strategies for cleaning up air pollution. The 1990 Clean Air Act includes other provisions to reduce interstate air pollution.

International air pollution

Air pollution moves across national borders. The 1990 law covers pollution that originates in Mexico and Canada and drifts into the United States and pollution from the United States that reaches Canada and Mexico.

The 1990 Clean Air Act includes novel approaches for dealing with pollution released by large sources such as big factories.

Permits

One of the major breakthroughs in the 1990 Clean Air Act is a **permit** program for larger **sources** that release pollutants into the air.[2]

Requiring polluters to apply for a permit is not a new idea. Approximately 35 states have had statewide permit programs for air pollution. The Clean Water Act requires permits to release pollutants into lakes, rivers or other waterways. Now air pollution is also going to be managed by a national permit system. Under the new program, permits are issued by states or, when a state fails to carry out the Clean Air Act satisfactorily, by EPA. The permit includes information on which pollutants are being released, how much may be released, and what kinds of steps the source's owner or operator is taking to reduce pollution, including plans to **monitor** (measure) the pollution. The permit system is especially useful for businesses covered by more than one part of the law, since information about all of a source's air pollution will now be in one place. The permit system simplifies and clarifies businesses' obligations for cleaning up air pollution and, over time, can reduce paperwork. For instance, an electric power plant may be covered by the acid rain, hazardous air pollutant and non-attainment (smog) parts of the Clean Air Act; the detailed information required by all these separate sections will be in one place—on the permit.

Permit applications and permits are available to the public; contact your state or regional air pollution control agency or EPA for information on access to these documents.

Businesses seeking permits have to pay **permit fees** much like car owners paying for car registrations. The money from the fees will help pay for state air pollution control activities.

[2] A source can be a power plant, factory or anything that releases pollutants into the air. Cars, trucks and other motor vehicles are sources, and consumer products and machines used in industry can be sources too. Sources that stay in one place are referred to as **stationary sources**; sources that move around, like cars or planes, are called **mobile sources**.

Enforcement

The 1990 Clean Air Act gives important new **enforcement** powers to EPA.

It used to be very difficult for EPA to penalize a company for violating the Clean Air Act. EPA had to go to court for even minor violations. The 1990 law enables EPA to fine violators, much like a police officer giving traffic tickets. Other parts of the 1990 law increase penalties for violating the Act and bring the Clean Air Act's enforcement powers in line with other environmental laws.

Deadlines

The 1990 Clean Air Act sets **deadlines** for EPA, states, local governments and businesses to reduce air pollution. The deadlines in the 1990 Clean Air Act were designed to be more realistic than deadlines in previous versions of the law, so it is more likely that these deadlines will be met.

Public participation

Public participation is a very important part of the 1990 Clean Air Act. Throughout the Act, the public is given opportunities to take part in determining how the law will be carried out. For instance, you can take part in hearings on the state and local plans for cleaning up air pollution. You can sue the government or a source's owner or operator to get action when EPA or your state has not enforced the Act. You can request action by the state or EPA against violators.

The reports required by the Act are public documents. A great deal of information will be collected on just how much pollution is being released; these **monitoring (measuring) data** will be available to the public. The 1990 Clean Air Act ordered EPA to set up **clearinghouses** to collect and give out technical information. Typically, these clearinghouses will serve the public as well as state and other air pollution control agencies.

See the list at the end of this summary for organizations to contact for additional information about air pollution and the Clean Air Act.

Market approaches for reducing air pollution; economic incentives

The 1990 Clean Air Act has many features designed to clean up air pollution as efficiently and inexpensively as possible, letting businesses make choices on the best way to reach pollution clean-up goals. These new flexible programs are called **market** or **market-based** approaches. For instance, the acid rain clean-up program offers businesses choices as to how they reach their pollution reduction goals and includes pollution allowances that can be traded, bought and sold.

The 1990 Clean Air Act provides **economic incentives** for cleaning up pollution. For instance, gasoline refiners can get **credits** if they produce cleaner gasoline than required, and they can use those credits when their gasoline doesn't quite meet clean-up requirements.

How Smog Is Formed...

Next page: Many sources, including cars, factories, and products used in homes, release smog-forming pollutants. Wind blows the pollutants away from their sources and, while the pollutants are being blown along, they undergo chemical reactions. Heat and sunlight increase the reactions. These reactions form ground-level ozone, the principal component of smog.

Hours after the smog-forming pollutants were released from their sources, smog pollutes the air, often miles away from where the smog-forming pollutants were released.

Cleaning up air pollution: the programs in the 1990 Clean Air Act

Smog and other "criteria" air pollutants

A few common air pollutants are found all over the United States. These pollutants can injure health, harm the environment and cause property damage.

EPA calls these pollutants **criteria air pollutants** because the agency has regulated them by first developing health-based **criteria** (science-based guidelines) as the basis for setting permissible levels. One set of limits **(primary standard)** protects health; another set of limits **(secondary standard)** is intended to prevent environmental and property damage. A geographic area that meets or does better than the primary standard is called an **attainment area**; areas that don't meet the primary standard are called **nonattainment** areas.

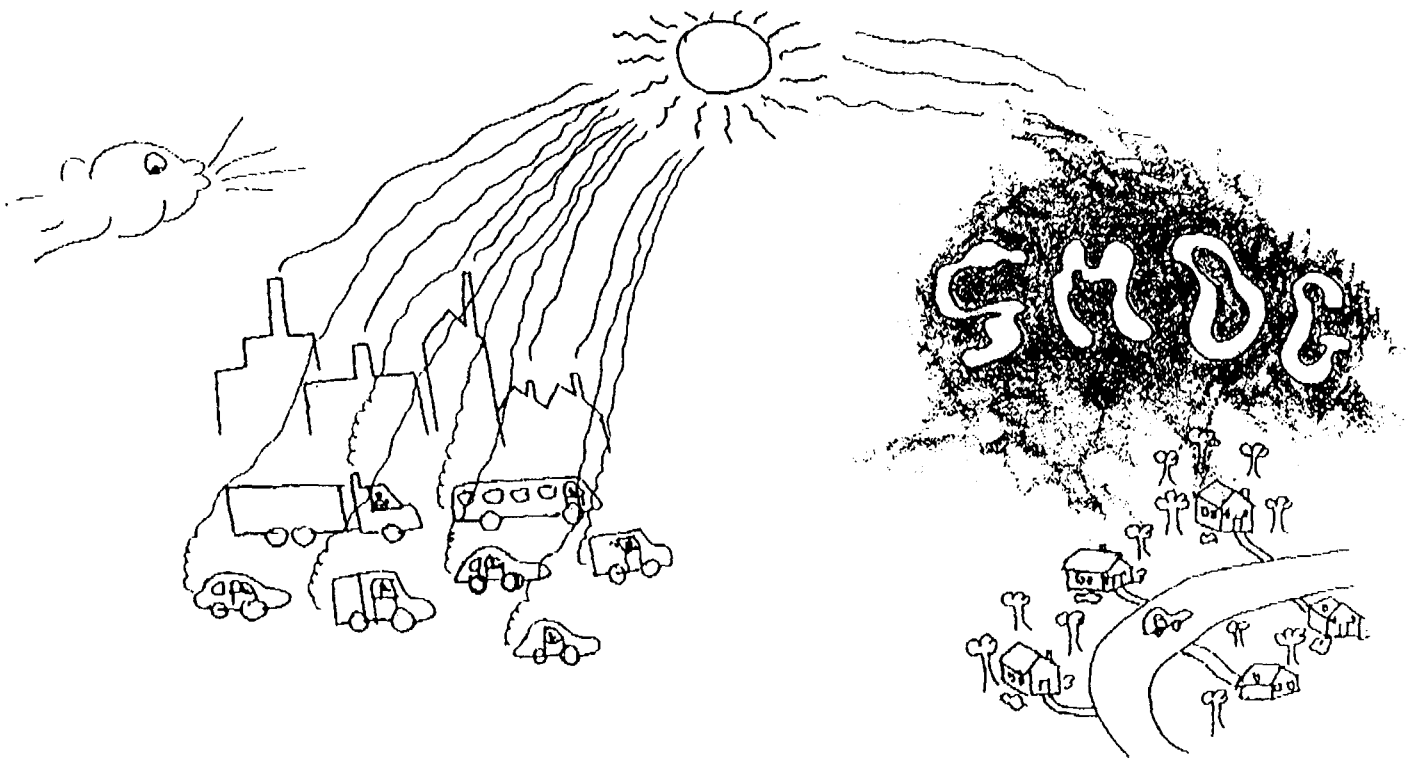
Although EPA has been regulating criteria air pollutants since the 1970 CAA was passed, many urban areas are classified as nonattainment for at least one criteria air pollutant. It has been estimated that about 90 million Americans live in nonattainment areas.

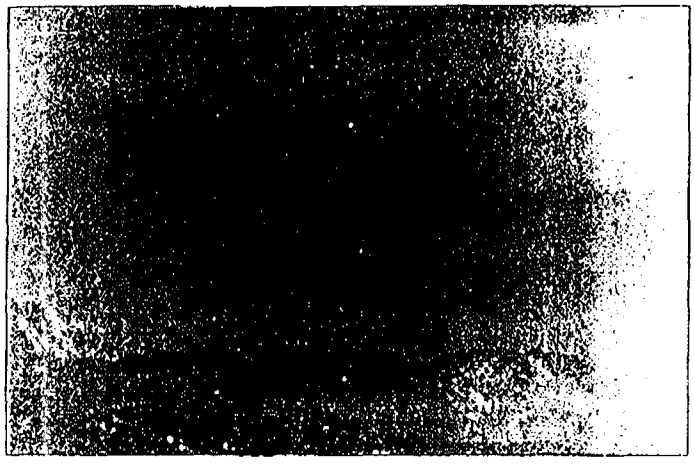
Smog

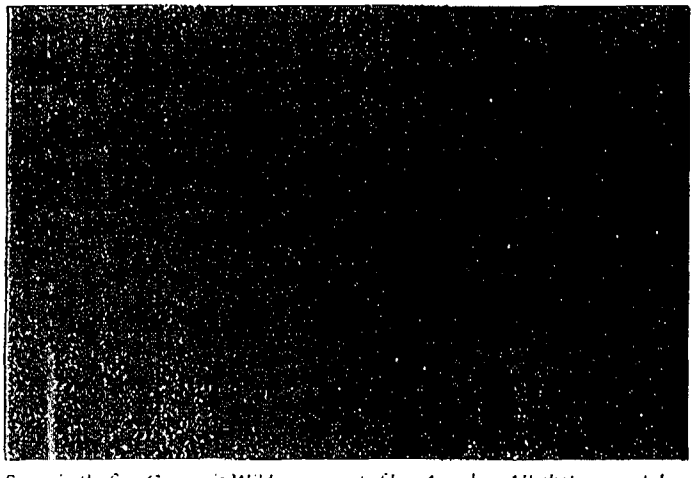
What we typically call **smog** is primarily made up of **ground-level ozone.** Ozone can be good or bad depending on where it is located. Ozone in the **stratosphere** high above the Earth protects human health and the environment, but ground-level ozone is the main harmful ingredient in smog.

Ground-level ozone is produced by the combination of pollutants from many sources, including smokestacks, cars, paints and solvents. When a car burns gasoline, releasing exhaust fumes, or a painter paints a house, smog-forming pollutants rise into the sky.

Often, wind blows smog-forming pollutants away from their sources. The smog-forming reactions take place while the pollutants are being blown through the air by the wind. This explains why smog is often more severe miles away from the source of smog-forming pollutants than it is at the source.







Smog in the San Gorgonio Wilderness east of Los Angeles. All photos were taken at 3 p.m. Top: Good visibility. Center: Haze. Bottom: Intense haze.

The smog-forming pollutants literally cook in the sky, and if it's hot and sunny, smog forms more easily. Just as it takes time to bake a cake, it takes time to cook up smog—several hours from the time pollutants get into the air until the smog gets really bad.

Weather and geography determine where smog goes and how bad it is. When **temperature inversions** occur (warm air stays near the ground instead of rising) and winds are calm, smog may stay in place for days at a time. As traffic and other sources add more pollutants to the air, the smog gets worse.

Since smog travels across county and state lines, when a metropolitan area covers more than one state (for instance, the New York metropolitan area includes parts of New Jersey and Connecticut), their governments and air pollution control agencies must cooperate to solve their problem. Governments on the East Coast from Maine to Washington, D.C., will have to work together in a **multistate** effort to reduce the area's smog problem.

Here's how the 1990 Clean Air Act reduces pollution from criteria air pollutants, including smog.

First, EPA and state governors cooperated to **identify** nonattainment areas for each criteria air pollutant. Then, EPA **classified** the nonattainment areas according to how badly polluted the areas are. There are five classes of nonattainment areas for smog, ranging from **marginal** (relatively easy to clean up quickly) to **extreme** (will take a lot of work and a long time to clean up).

The 1990 Clean Air Act uses this new classification system to tailor clean-up requirements to the severity of the pollution and set realistic deadlines for reaching clean-up goals. If deadlines are missed, the law allows more time to clean up, but usually a nonattainment area that has missed a clean-up deadline will have to meet the stricter clean-up requirements set for more polluted areas.

Not only must nonattainment areas meet deadlines, states with nonattainment areas must show EPA that they are moving on clean-up before the deadline—making **reasonable further progress.**

States will usually do most of the planning for cleaning up criteria air pollutants, using the permit system to make sure power plants, factories and other pollution sources meet their clean-up goals.

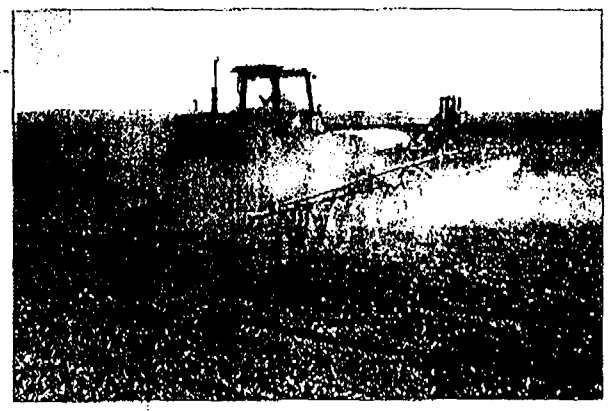
The comprehensive approach to reducing criteria air pollutants taken by the 1990 Act covers many different sources and a variety of clean-up methods. Many of the smog clean-up requirements involve motor vehicles (cars, trucks, buses). Also, as the pollution gets worse, pollution controls are required for smaller sources.

Other criteria pollutants: carbon monoxide and particulates

The carbon monoxide (CO) and particulate matter (PM-10) clean-up plans are set up like the plan for smog, but only two pollution classes are identified for each (instead of the five for ozone). Getting rid of **particulates** (soots, dusts, smoke) will require pollution controls on power plants and restrictions on smaller sources such as wood stoves, agricultural burning, and dust from fields and roads. Because so many homes have woodstoves and fireplaces, this summary of the Clean Air Act includes a section on **Woodstoves and fireplaces**, providing information on how the Clean Air Act will affect these home heating systems.

Offsets

What if a company wants to expand or change a production process or otherwise increase its output of a criteria air pollutant? If an owner or operator of a major source wants to release more of a criteria air pollutant, an **offset** (a reduction of the criteria air pollutant by an amount somewhat greater than the planned increase) must be obtained somewhere else, so that permit requirements are met and the nonattainment area keeps moving toward attainment. The company must also install tight pollution controls. An increase in a criteria air pollutant can be offset with a reduction of the pollutant from some other stack at the same plant or at another plant owned by the same or some other company in the nonattainment area. Since total pollution will continue to go down, trading offsets among companies is allowed. This is one of the market approaches to cleaning up air pollution in the Clean Air Act.



Dusty farm operations, such as soil tillage and pesticide application, can pollute the air.

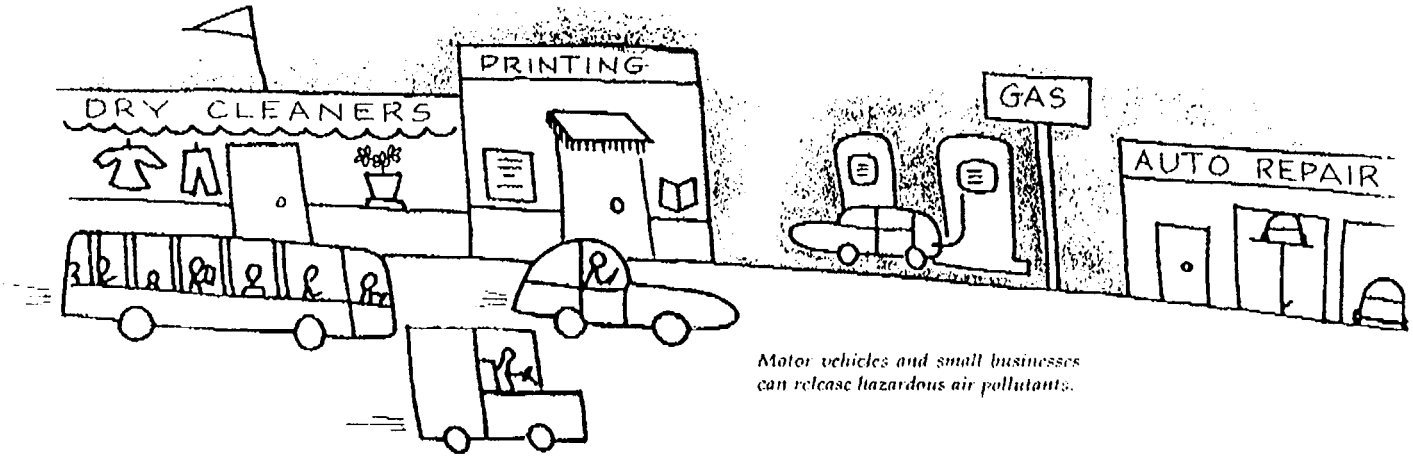
Air pollution in Denver, Colorado, sometimes causes hazy "brown cloud". Denver has also had problems with carbon monoxide pollution.

Criteria air pollutants in gasoline and consumer products

Volatile organic compounds (VOCs), important smog-forming chemicals, are found in gasoline and many consumer products, from hair spray to charcoal starter fluid to plastic popcorn packaging. This summary includes a section on **Consumer Products**; see that section for information on how the Clean Air Act will affect products you use every day. Information on changes in gasoline will be found in the section on **Mobile Sources**.

Hazardous air pollutants

Some air pollutants can cause cancer, problems with having children and other very serious illnesses as well as environmental damage. Air pollutants have killed people swiftly when large quantities were released; the 1984 release of methyl isocyanate at a pesticide-manufacturing plant in Bhopal, India, killed approximately 4,000 people and injured more than 200,000.

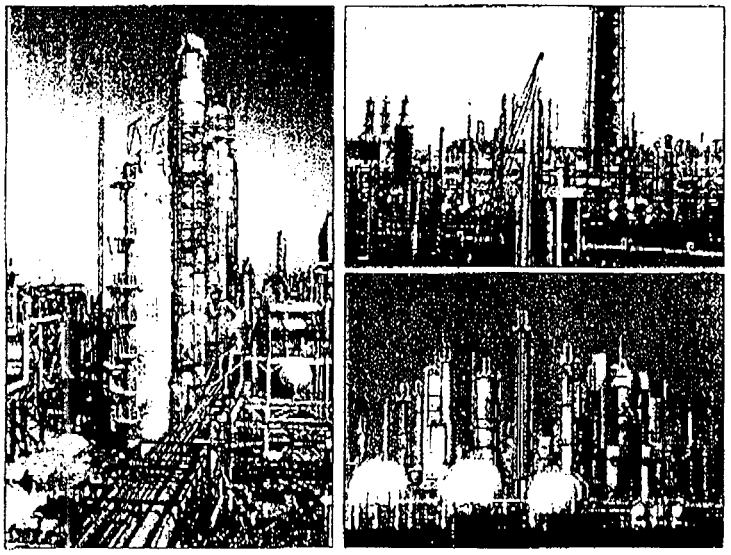


Motor vehicles and small businesses can release hazardous air pollutants.

EPA refers to chemicals that cause serious health and environmental hazards as **hazardous air pollutants (HAPs)** or **air toxics.**

Air toxics are released from sources throughout the country and from motor vehicles. For example, gasoline contains toxic chemicals. Gases escape from liquid gasoline and form a **vapor** in a process called **vaporization** or **evaporation.** When you put gas in your car, you can often see wavy lines in the air at the pump nozzle and you can smell gasoline; that tells you gasoline vapors are in the air.

When cars and trucks burn gasoline, air toxics come out of the tailpipes. (These air toxics are **combustion products**—chemicals that are produced when a substance is burned.)



Petrochemical plants can release hazardous air pollutants. A. A Texaco, Inc., plant at Port Neches, Texas, which manufactures a fuel additive; B. Construction at a Phillips Petroleum refinery in Sweeny, Texas (1985); C. The Texaco, Inc., refinery at Convent, Louisiana (1983).

Air toxics are released from small stationary sources, such as dry cleaners and auto paint shops. Large stationary sources, such as chemical factories and incinerators, also release hazardous air pollutants. The 1990 Clean Air Act deals more strictly with large sources than small ones, but EPA must regulate small sources of hazardous air pollutants as well.

To reduce air toxics pollution, EPA must first identify the toxic pollutants whose release should be reduced. The 1970 Clean Air Act gave EPA authority to list air toxics for regulation and then to regulate the chemicals. The agency listed and regulated seven chemicals through 1990. The 1990 Act includes a list of 189 hazardous air pollutants selected by Congress on the basis of potential health and/or environmental hazard; EPA must regulate these listed air toxics. The 1990 Act allows EPA to add new chemicals to the list as necessary.

To regulate hazardous air pollutants, EPA must identify **categories of sources** that release the 189 chemicals listed by Congress in the 1990 Clean Air Act. Categories could be gasoline service stations, electrical repair shops, coal-burning power plants, chemical plants, etc. The air toxics producers are to be identified as **major** (large) or **area** (small) sources.

Once the categories of sources are listed, EPA will issue regulations. In some cases, EPA may have to specify exactly how to reduce pollutant releases, but wherever possible companies will have flexibility to choose how they meet requirements. Sources are to use **Maximum Available Control Technology (MACT)** to reduce pollutant releases; this is a very high level of pollution control.

EPA must issue regulations for major sources first, and must then issue regulations to reduce pollution from small sources, setting priorities for which small sources to tackle first, based on health and environmental hazards, production volume, etc.

Mobile sources
(cars, trucks, buses, off-road vehicles, planes, etc.)

If a company wishes to increase the amount of air toxics coming out of an operating plant, the company may choose to **offset** the increases so that total hazardous air pollutant releases from the plant do not go up. Otherwise, they may choose to install pollution controls to keep pollutants at the required level.

If a company reduces its releases of a hazardous air pollutant by about 90 percent before EPA regulates the chemical, the company will get extra time to finish cleaning up the remaining 10 percent. This **early reduction** program is expected to result in a speedy reduction of the levels of several important hazardous air pollutants.

Under the 1990 Clean Air Act, EPA is required to study whether and how to reduce hazardous air pollutants from small neighborhood polluters such as auto paint shops, print shops, etc. The agency will also have to look at air toxics pollution after the first round of regulations to see whether the remaining health hazards require further regulatory action.

Cars, trucks, buses and other mobile sources release large amounts of hazardous air pollutants like formaldehyde and benzene. Cleaner fuels and engines and making sure that pollution control devices work should reduce hazardous air pollutants from mobile sources.

The Bhopal tragedy inspired the 1990 Clean Air Act requirement that factories and other businesses develop plans to prevent **accidental releases** of highly toxic chemicals. The Act establishes the **Chemical Safety Board** to investigate and report on accidental releases of hazardous air pollutants from industrial plants. The Chemical Safety Board will operate like the National Transportation Safety Board (NTSB), which investigates plane and train crashes.

ach of today's cars produces 60 to 80 percent less pollution than cars in the 1960s. More people are using mass transit. Leaded gas is being phased out, resulting in dramatic declines in air levels of lead, a very toxic chemical.

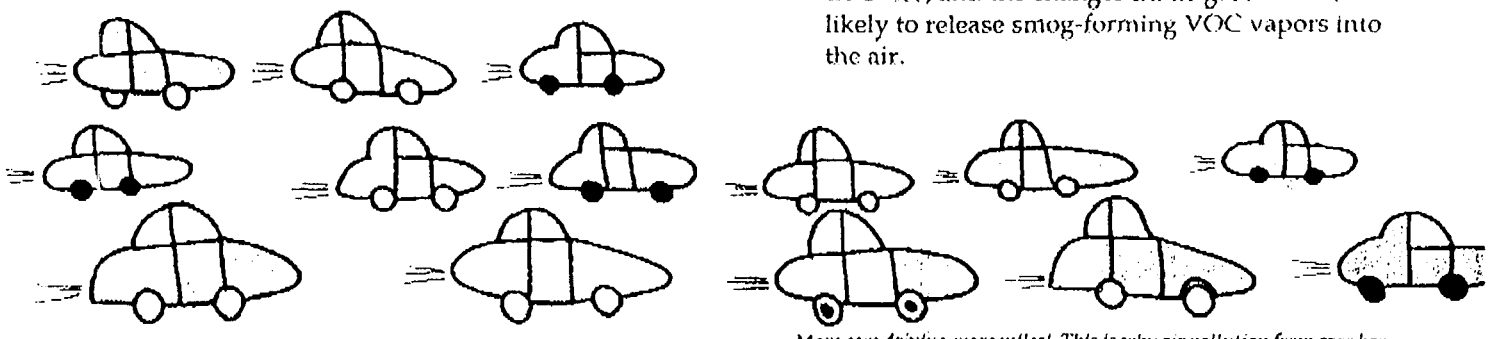
Despite this progress, most types of air pollution from mobile sources have not improved significantly.

At present in the United States:

- Motor vehicles are responsible for up to half of the smog-forming VOCs and nitrogen oxides (NOx).
- Motor vehicles release more than 50 percent of the hazardous air pollutants.
- Motor vehicles release up to 90 percent of the carbon monoxide found in urban air.

What went wrong?

- More people are driving more cars more miles on more trips. In 1970, Americans traveled 1 trillion miles in motor vehicles, and we are expected to drive 4 trillion miles each year by 2000.
- Many people live far from where they work; in many areas, buses, subways and commuter trains are not available. Also, most people still drive to work alone, even when van pools, HOV (high-occupancy vehicle) lanes and other alternatives to one-person-per-car commuting are available.
- Buses and trucks, which produce a lot of pollution, haven't had to clean up their engines and exhaust systems as much as cars.
- Auto fuel has become more polluting. As lead was being phased out, gasoline refiners changed gasoline formulas to make up for octane loss, and the changes made gasoline more likely to release smog-forming VOC vapors into the air.



More cars driving more miles! This is why air pollution from cars has gotten worse even though individual cars produce less pollution than they used to.

Trinity Church (located on Wall Street in Manhattan). The church appears black in the photo, due to many years exposure to soot. Recent cleaning restored the church's stone to its original pinkish color.

Detail of New Jersey Monument, Valley Forge National Historic Park

Detail of Union Sc and Sailors Monu

NEW YORK

VALLEY FORGE

SEWICKLEY

BALTIMORE

WASHINGTON D.C.

Detail of "Fame", by Isaac Bloom

Marble above-ground burial crypt

Detail of Von Steuben Monument in Lafayette Park (across from the White House)

NEW ORLEANS

GULF OF MEXICO

Air pollution damage to statues and monuments

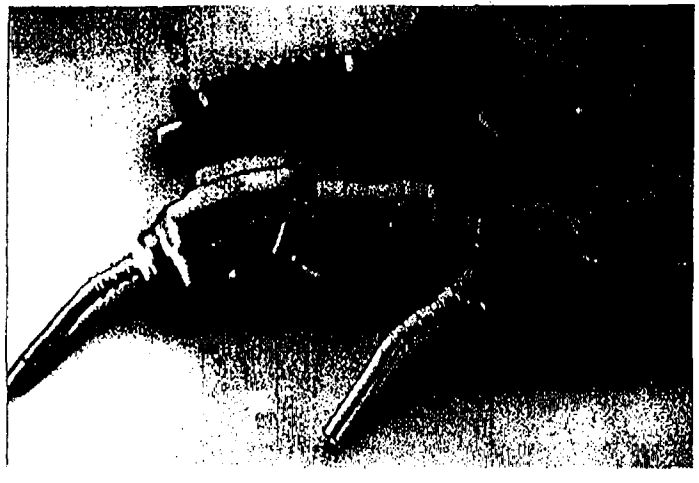
• Although cars have had pollution control devices since the 1970s, the devices only had to work for 50,000 miles, while a car in the United States is usually driven for 100,000 miles.

The 1990 Clean Air Act takes a **comprehensive** approach to reducing pollution from motor vehicles. The Act provides for cleaning up fuels, cars, trucks, buses and other motor vehicles. Auto inspection provisions were included in the law to make sure cars are well maintained. The 1990 law also includes transportation policy changes that can help reduce air pollution.

Cleaner fuels

It will be very difficult to obtain a significant reduction in pollution from motor vehicles unless fuels are cleaned up. The 1990 Clean Air Act will clean up fuels. The phaseout of lead from gasoline will be completed by January 1, 1996. Diesel fuel refining must be changed so that the fuels contain less sulfur, which contributes to acid rain and smog.

Gasoline refiners will have to **reformulate** gasoline sold in the smoggiest areas; this gasoline will contain less volatile organic compounds (VOCs) such as benzene (which is also a hazardous air pollutant that causes cancer and aplastic anemia, a potentially fatal blood disease). Other polluted areas can ask EPA to include them in the reformulated gasoline marketing program. In some areas, wintertime carbon monoxide (CO) pollution is caused by people starting their cars. In these areas, refiners will have to sell **oxyfuel**, gasoline with oxygen added to make the fuel burn more efficiently, thereby reducing carbon monoxide release.



There are several kinds of vapor recovery nozzles. The two nozzles in the left side of the photograph are both vapor recovery nozzles; the nozzle on the right side is not.

All gasolines will have to contain **detergents**, which, by preventing build-up of engine deposits, keep engines working smoothly and burning fuel cleanly. Low VOC, oxyfuel and detergent gasolines are already sold in several parts of the country.

The 1990 Clean Air Act encourages development and sale of **alternative fuels** such as alcohols, liquefied petroleum gas (LPG) and natural gas.

Gas stations in smoggy areas will install **vapor recovery nozzles** on gas pumps. These nozzles cut down on vapor release when you put gas in your car.

Cleaner cars

The 1990 Clean Air Act requires cars to have under-the-hood systems and dashboard warning lights that check whether pollution control devices are working properly. Pollution control devices must work for 100,000 miles, rather than the current 50,000 miles. Auto makers must build some cars that use **clean fuels**, including alcohol, and that release less pollution from the tailpipe through advanced engine design. Electric cars, which are low-pollution vehicles, will also be built. Since California, especially southern California, has the worst smog problems, manufacturers will first sell **clean fuel cars** in a **pilot project** in California. By 1999, at least 500,000 of these clean fuel cars are to be manufactured for sale in California each year. Other states can require that cars meeting the California standards be sold in their states.

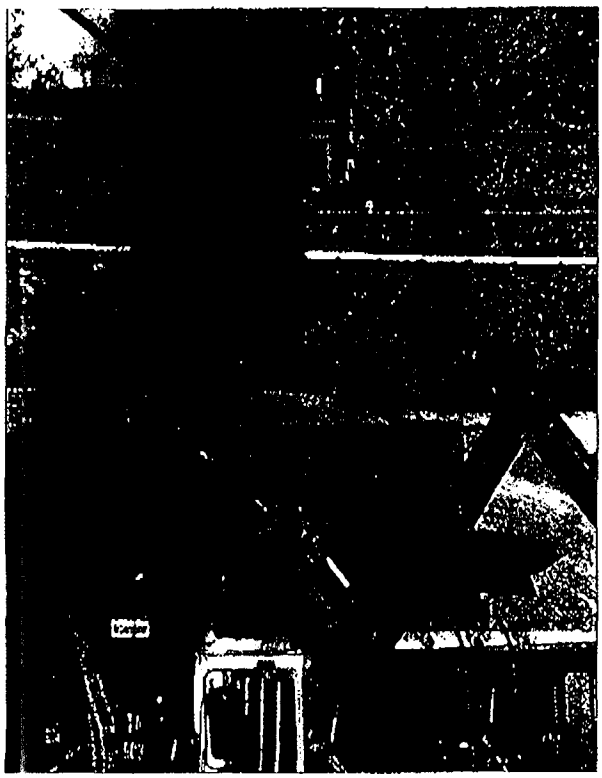
Many companies and government agencies have **fleets** of cars. Fleet-owners in very smoggy areas must buy the new cleaner cars starting in the late 1990s.

Inspection and maintenance (I/M) programs

Under the 1990 Clean Air Act, auto manufacturers will build cleaner cars, and cars will use cleaner fuels. However, to get air pollution down and keep it down, a third program is needed; vehicle **inspection and maintenance** (I/M), which makes sure cars are being maintained adequately to keep pollution **emissions** (releases) low. The 1990 Clean Air Act includes very specific requirements for inspection and maintenance programs.

Before the 1990 Clean Air Act went into effect, seventy United States cities and several states already had auto emission inspection programs. The 1990 law requires inspection and maintenance programs in more areas: forty metropolitan areas, including many in the northeastern United States, are required to start emission inspection and maintenance programs.

Some areas that already have inspection and maintenance programs are required to **enhance** (improve) their emission inspection machines and procedures. Enhanced inspection and maintenance machines and procedures will give a better measurement of the pollution a car releases when it is actually being driven, rather than just sitting parked at the inspection station. Enhanced inspection and maintenance programs may result in changes in where cars are inspected in your local area. Since the enhanced emission inspection and maintenance machines are expensive, some of the private stations now conducting inspection and maintenance programs may not want to buy the enhanced machinery. But the added expense for the new machinery will be more than made up for by air pollution reductions: **emission inspection and maintenance programs are expected to have a big payoff in reducing air pollution from cars.**



Pollution from trucks burning diesel fuel can be especially noticeable. Requirements in the 1990 Clean Air Act will result in much less air pollution from trucks.

Cleaner trucks and buses

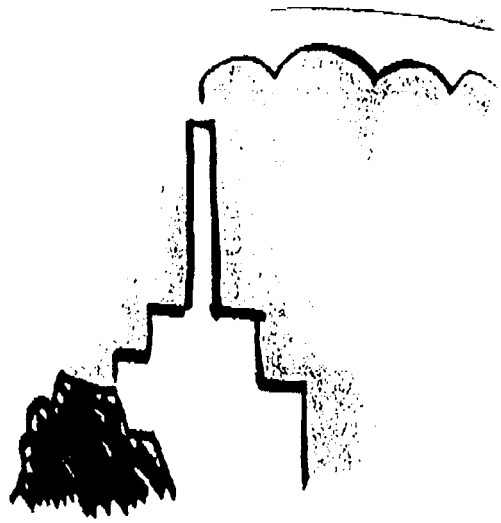
Starting with model year 1994, engines for new big diesel trucks will have to be built to reduce **particulate** (dust, soot) releases by 90 percent. Buses will have to reduce particulate releases even more than trucks. To reduce pollution, companies and governments that own buses or trucks will need to buy new clean models. Small trucks will be cleaned up by requirements similar to those for cars.

Non-road vehicles

Locomotives, construction equipment and even riding mowers may be regulated under the 1990 Clean Air Act. Air pollution from locomotives must be reduced. For the other non-road vehicles, EPA must issue regulations if a study shows that controls would help cut pollution.

Transportation policies

The smoggiest metropolitan areas will have to change their transportation policies to discourage unnecessary auto use, and to encourage efficient commuting (van pools, HOV [high-occupancy vehicle] lanes, etc.). States carrying out the 1990 Clean Air Act may add **surcharges** to parking fees.



Acid rain

You've probably heard of "acid rain". But you may not have heard of acid snow, acid fog or mist, acid gas and acid dust. All of these "acids" are related air pollutants, and can harm your health, cause hazy skies and damage the environment and your property. The 1990 Clean Air Act includes an innovative program to reduce acid air pollutants (all referred to here as "acid rain").

The acid rain that has received the most attention is caused mainly by pollutants from big coal-burning power plants in the Midwest. These plants burn Midwestern and Appalachian coal, some of which contains a lot of sulfur compared to Western coal. Sulfur in coal becomes sulfur dioxide (SO2) when coal is burned. Big power plants burn large quantities of coal, so they release large amounts of sulfur dioxide, as well as NOx (nitrogen oxides). These are acid chemicals, related to two strong acids: sulfuric acid and nitric acid.

The sulfur dioxide and nitrogen oxides released from the Midwestern power plants rise high into the air and are carried by winds toward the East Coast of the U.S. and Canada. When winds blow the acid chemicals into areas where there is wet weather, the acids become part of the rain, snow or fog. In areas where the weather is dry, the acid chemicals may fall to Earth in gases or dusts.

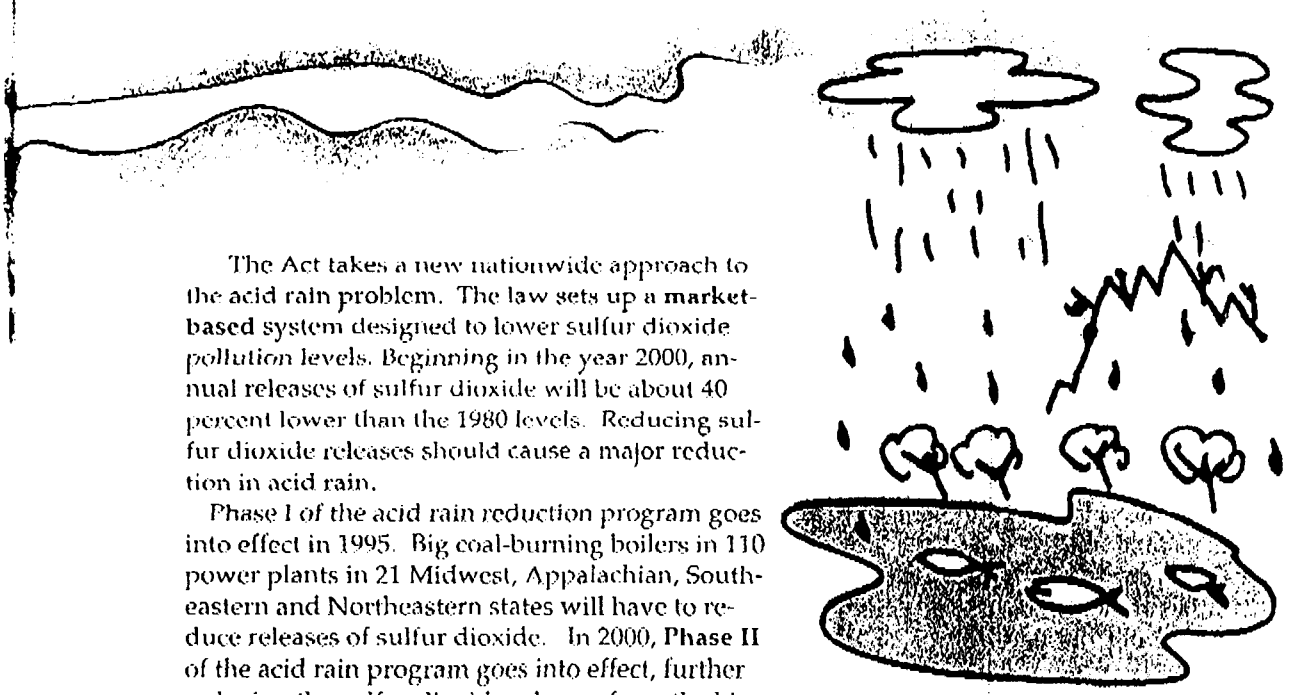
Lakes and streams are normally slightly acid, but acid rain can make them very acid. Very acid conditions can damage plant and animal life.

Acid lakes and streams have been found all over the country. For instance, lakes in Acadia National Park on Maine's Mt. Desert Island have been very acidic, due to pollution from the Midwest and the East Coast. Streams in Maryland and West Virginia, lakes in the Upper Peninsula of Michigan, and lakes and streams in Florida have also been affected by acid rain. Heavy rainstorms and melting snow can cause temporary increases in acidity in lakes and streams in the eastern and western United States. These temporary increases may last for days or even weeks.

Acid rain has damaged trees in the mountains of Vermont and other states. Red spruce trees at high altitudes appear to be especially sensitive to acid rain. The pollutants that cause acid rain can make the air hazy or foggy; this has occurred in the eastern United States, including some mountain areas popular with vacationers, such as the Great Smokies.

Acid rain does more than environmental damage; it can damage health and property as well. Acid air pollution has been linked to breathing and lung problems in children and in people who have asthma. Even healthy people can have their lungs damaged by acid air pollutants. Acid air pollution can eat away stone buildings and statues.

Health, environmental and property damage can also occur when sulfur dioxide pollutes areas close to its source. Sulfur dioxide pollution has been found in towns where paper and wood pulp are processed and in areas close to some power plants. The 1990 Clean Air Act's sulfur dioxide reduction program will complement health-based sulfur dioxide pollution limits already in place to protect the public and the environment from both nearby and distant sources of sulfur dioxide.



The Act takes a new nationwide approach to the acid rain problem. The law sets up a **market-based** system designed to lower sulfur dioxide pollution levels. Beginning in the year 2000, annual releases of sulfur dioxide will be about 40 percent lower than the 1980 levels. Reducing sulfur dioxide releases should cause a major reduction in acid rain.

Phase I of the acid rain reduction program goes into effect in 1995. Big coal-burning boilers in 110 power plants in 21 Midwest, Appalachian, Southeastern and Northeastern states will have to reduce releases of sulfur dioxide. In 2000, **Phase II** of the acid rain program goes into effect, further reducing the sulfur dioxide releases from the big coal-burning power plants and covering other smaller polluters. Total sulfur dioxide releases for the country's power plants will be permanently limited to the level set by the Clean Air Act for the year 2000.

Reductions in sulfur dioxide releases will be obtained through a program of **emission** (release) **allowances**. EPA will issue allowances to power plants covered by the acid rain program; each allowance is worth one ton of sulfur dioxide released from the smokestack. To obtain reductions in sulfur dioxide pollution, allowances are set below the current level of sulfur dioxide releases. Plants may only release as much sulfur dioxide as they have allowances. If a plant expects to release more sulfur dioxide than it has allowances, it has to get more allowances, perhaps by buying them from another power plant that has reduced its sulfur dioxide releases below its number of allowances and therefore has allowances to sell or trade. Allowances can also be bought and sold by "middlemen", such as brokers, or by anyone who wants to take part in the allowances market. Allowances can be traded and sold nationwide. There are stiff penalties for plants which release more pollutants than their allowances cover.

The acid rain program provides bonus allowances to power plants for (among other things) installing **clean coal** technology that reduces sulfur dioxide releases, using renewable energy sources (solar, wind etc.) or encouraging energy conservation by customers so that less power needs to be produced.

How Acid Rain Is Formed...

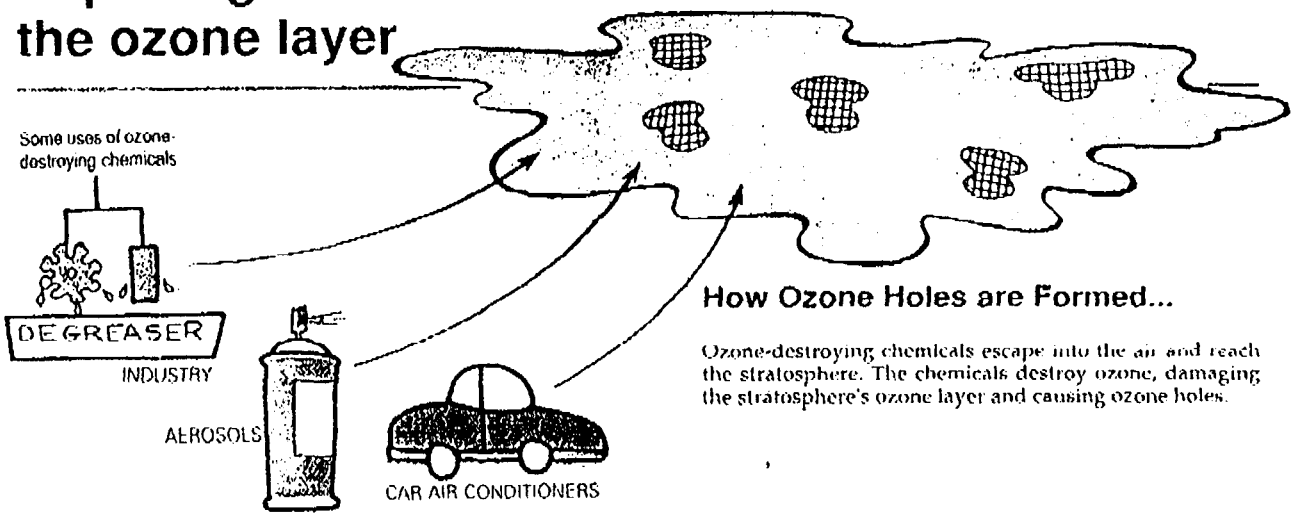
Burning fuels release acid pollutants. These pollutants are carried far from their sources by wind. Depending on the weather, the acid pollutants fall to Earth in wet form (acid rain, snow, mist or fog) or dry form (acid gases or dusts).

All power plants under the acid rain program will have to install **continuous emission monitoring systems (CEMS)**, machines that keep track of how much sulfur dioxide and nitrogen oxides the plant is releasing. A power plant's program for meeting its sulfur dioxide and nitrogen oxide limit will appear on the plant's **permit**, which will be filed with the state and EPA.

To cut down on nitrogen oxide pollution, EPA will require power plants to reduce their nitrogen oxide releases, and will require reductions in nitrogen oxide releases from new cars. Reducing nitrogen oxide releases will reduce both acid rain and smog formation.

The flexible market-based acid rain reduction program is expected to be a model for pollution control efforts in the United States and other countries.

Repairing the ozone layer



How Ozone Holes are Formed...

Ozone-destroying chemicals escape into the air and reach the stratosphere. The chemicals destroy ozone, damaging the stratosphere's ozone layer and causing ozone holes.

Scientists have found "holes"[3] in the ozone layer high above the Earth. The 1990 Clean Air Act has provisions for fixing the holes, but repairs will take a long time.

Ozone in the **stratosphere**, a layer of the atmosphere nine to 31 miles above the Earth, serves as a protective shield, filtering out harmful sun rays, including a type of sunlight called **ultraviolet B**. Exposure to ultraviolet B has been linked to development of cataracts (eye damage) and skin cancer.

In the mid-1970s, scientists suggested that chlorofluorocarbons (CFCs) could destroy stratospheric ozone. CFCs were widely used then as aerosol propellants in consumer products such as hairsprays and deodorants, and for many uses in industry. Because of concern about the possible effects of CFCs on the ozone layer, in 1978 the U.S. government banned CFCs as propellants in aerosol cans.

Since the aerosol ban, scientists have been measuring the ozone layer. A few years ago, an ozone hole was found above Antarctica, including the area of the South Pole. This hole, which has been appearing each year during the Antarctic winter (our summer), is bigger than the continental United States. More recently, ozone thinning has been found in the stratosphere above the northern half of the United States; the hole extends over Canada and up into the Arctic regions (the area of the North Pole). The hole was first found only in winter and spring, but more recently has continued into summer. Between 1978 and 1991, there was a 4-5 percent loss of ozone in the stratosphere over the United States; this is a significant loss of ozone. Ozone holes have also been found over northern Europe.

What could a thinned-out ozone layer do to people's lives? There could be more skin cancers and cataracts. Scientists are looking into possible harm to agriculture, and there is already some evidence of damage to plant life in Antarctic seas.

Evidence that the ozone layer is dwindling led 93 nations, including the major industrialized nations, to agree to cooperate in reducing production and use of chemicals that destroy the ozone layer. As it became clear that the ozone layer was thinning even more quickly than first thought, the agreement was revised to speed up the phase-out of ozone-destroying chemicals.

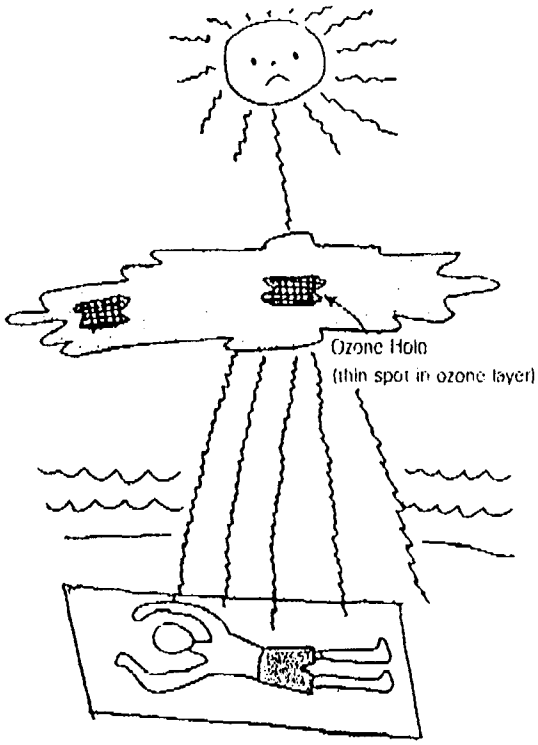
Ozone-destroying chemicals

Name	Use	When U.S. production ends*
CFCs (chlorofluorocarbons)	solvents, aerosol sprays (most spray can uses banned in 1970s), foaming agents in plastic manufacture	January 1, 1996
Halons	fire extinguishers	January 1, 1994
Carbon tetrachloride	solvents, chemical manufacture; carbon tetrachloride causes cancer in animals	January 1, 1996
Methyl chloroform (1,1,1-trichloroethane)	very widely-used solvent; in many workplace and consumer solvents, including auto repair and maintenance products	January 1, 1996
HCFCs (hydro CFCs)	CFC substitutes; chemicals slightly different from CFCs	January 1, 2003**

*The 1990 Clean Air Act includes a schedule for ending United States production of ozone-destroying chemicals, and provisions for speeding up the phase-out schedule if that is necessary. The dates in this table are "speeded-up" dates, proposed by EPA in early 1993

**Production of the HCFC with the most severe ozone-destroying effects will end by January 1, 2003. Production of the rest of the HCFCs will end by January 1, 2030.

[3] Ozone holes aren't like doughnut holes; they're not empty spaces in the sky. Ozone holes are much like the worn-out places in an old sock or sweater: there are still threads covering the worn-out area, but the fabric can be so thin you can see right through it.



When the ozone layer is damaged, there is an increase in harmful rays from the sunreaching the Earth. These rays can harm both human health and the environment.

Unfortunately, it will be a long time before we see the ozone layer repaired. Because of the ozone-destroying chemicals already in the stratosphere and those that will arrive within the next few years, ozone destruction will likely continue for another twenty years.

The 1990 Clean Air Act sets a schedule for ending production of chemicals that destroy stratospheric ozone. Chemicals that cause the most damage will be phased out first. The phase-out schedule can be speeded up if an earlier end to production of ozone-destroying substances is needed to protect the ozone layer. The table on this page on **Ozone-destroying chemicals** includes "speeded-up" phase-out dates which were proposed by EPA in early 1993.

CFCs, Halons, HCFCs (hydrochlorofluorocarbons)[4] and other ozone-destroying chemicals were listed by Congress in the 1990 Clean Air Act and must be phased out. The Act also lets EPA list other chemicals that destroy ozone.

EPA issues **allowances** to control manufacture of chemicals being phased out. Companies can also sell unused allowances to companies still making the chemicals or can use the allowances, within certain limits, to make a different, less ozone-destroying chemical on the phase-out list.

In addition to requiring the phasing out of production of ozone-destroying chemicals, the Clean Air Act takes other steps to protect the ozone layer. The law requires recycling of CFCs and labeling of products containing ozone-destroying chemicals. The 1990 Clean Air Act also encourages the development of "ozone-friendly" substitutes for ozone-destroying chemicals.

CFCs from car air conditioners are the biggest single source of ozone-destroying chemicals. By the end of 1993, all car air conditioner systems must be serviced using equipment that **recycles** CFCs and prevents their release into the air. Larger auto service shops were required to start using this special equipment in January 1992. Only specially-trained and certified repair persons will be allowed to buy the small cans of CFCs used in servicing auto air conditioners.

As CFCs and related chemicals are phased out, appliances and industrial processes that now use the chemicals will change. For example, industrial and home refrigerators will be changed to use refrigerants that don't destroy ozone. In the meantime, refrigerator servicing and disposal will have to be done in ways that don't release CFCs. Methyl chloroform, also called 1,1,1-trichloroethane, which will be phased out by 1996, is a very widely-used solvent found in products such as automobile brake cleaners (often sold as aerosol sprays) and spot removers used to take greasy stains off fabrics. Replacing methyl chloroform in workplace and consumer products will lead to changes in many products and processes.

As substitutes are developed for ozone-destroying substances, before the chemicals can be produced and sold, EPA must determine that the replacements will be safe for health and the environment.

Consumer products containing CFCs and other ozone-destroying chemicals will have to be reformulated; these are discussed in the following section on **Consumer products**.

[4] HCFCs and Halons are chemicals much like CFCs. HCFCs may be somewhat less harmful to the ozone layer than are CFCs.

Consumer products

air sprays, paints, foam plastic products (such as disposable styrofoam coffee cups), carburetor and choke sprays—all are consumer products that may be regulated under the 1990 Clean Air Act. These products will be regulated to reduce releases of smog-forming VOCs and ozone-destroying chemicals (CFCs and related chemicals).

By May 1993, consumer products containing CFCs and related chemicals identified in the 1990 Clean Air Act as most damaging to the ozone layer have this label:

> WARNING: contains or manufactured with (name of chemical), a substance which harms public health and the environment by destroying ozone in the upper atmosphere.

All products containing less destructive ozone destroying chemicals identified in the 1990 Act must be labeled by 2015.

Consumers should be aware of product changes and any safety or health problems that may be caused by the new ozone-safe formulations. **Material safety data sheets** for the products should be read for health and safety information and information on how to use and dispose of the product.[5]

The 1990 Clean Air Act orders EPA to study VOC releases from consumer products and report to Congress by 1993 on whether these products should be regulated. If they are to be regulated, EPA is to list the consumer products that account for at least 80 percent of VOC releases, and issue regulations for product categories, starting with the worst polluters. Labeling, repackaging, chemical formula changes, fees or other procedures may be used to reduce VOC releases.

[5] Material safety data sheets are product safety information sheets prepared by manufacturers and marketers. These sheets can be obtained by requesting them from the manufacturer. Some stores, such as hardware stores, may have material safety data sheets on hand for products they sell.

Home woodstoves

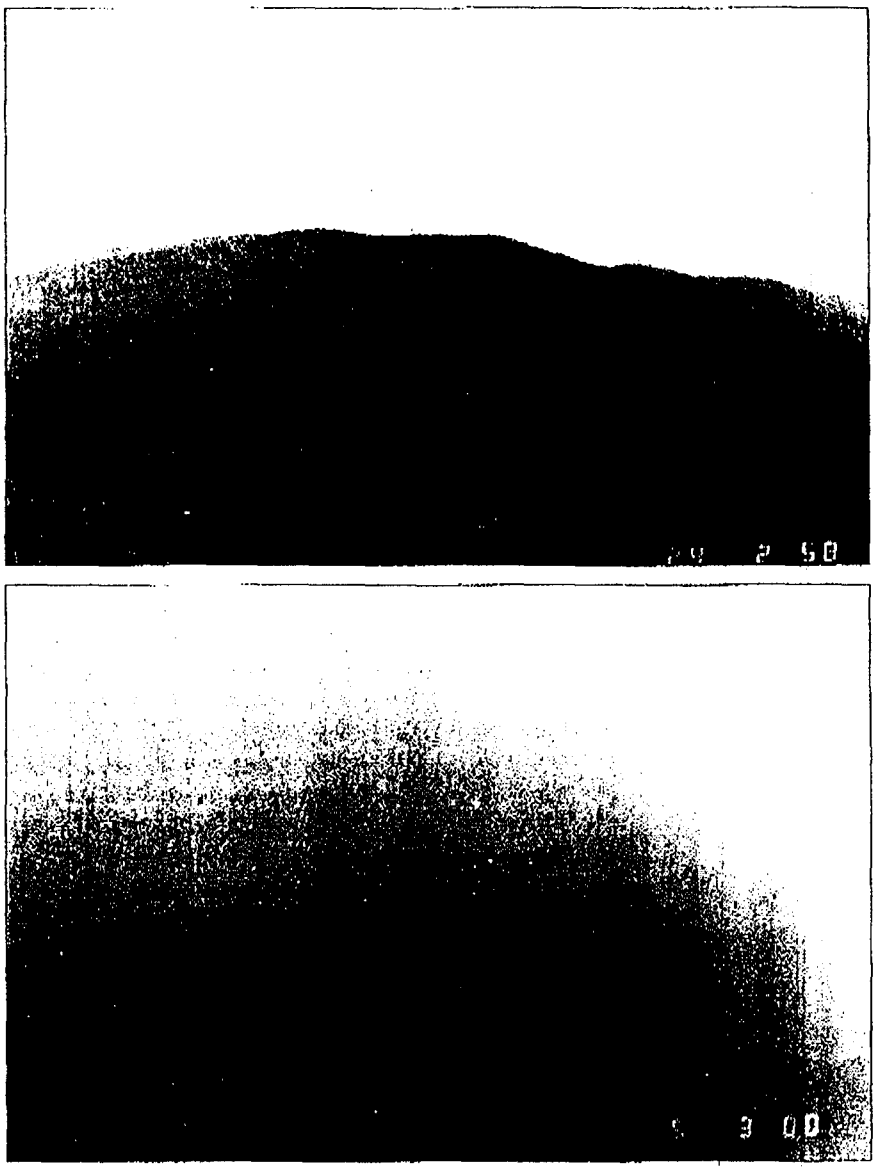
Woodstoves and fireplace inserts have become very popular in the past twenty years. Although these wood-burning heat suppliers are relatively cheap to operate, they have some disadvantages, including polluting the air. In some areas of the country, wintertime air pollution from wood smoke has become so bad that governments have had to curtail the use of woodstoves and fireplaces under certain weather and pollution conditions.

Wood smoke often contains a lot of **particulates** (dust, soot) and much higher levels of hazardous air pollutants, including some cancer-causing chemicals, than smoke from oil- or gas-fired furnaces. Steps to clean up wood smoke pollution have included redesigning the burning system in woodstoves; newer woodstoves put out much less pollution than older models.

Under the 1990 Act, EPA has issued guidelines for reducing pollution from home wood-burning. These guidelines, which are not requirements, include design information for less-polluting stoves and fireplaces.

New wood stoves must meet pollution reduction requirements issued by EPA.

How do you know the Clean Air Act is working?



Great Smoky Mountains National Park. Top: Clear day (photo taken at 7 p.m.). Bottom: haze (photo taken at 3 p.m.).

Everyone in the United States has a role to play to make the Clean Air Act a success. One of the most important things Americans can do is to keep track of how the law is working.

There are several ways you'll be able to tell how well the Clean Air Act is working.

EPA, state, regional and local air pollution control agencies have to issue regulations (rules), give out permits, enforce the Act against violators and do other things described in the Clean Air Act.

Many groups with an interest in how the Clean Air Act works are watching EPA and the other air pollution control agencies. These groups include local and national business and trade organizations (from state associations of dry cleaners to the United States Chamber of Commerce), local community organizations (such as neighborhood associations), and local and national environmental and public health organizations (such as the Clean Air Network of the Natural Resources Defense Council and the American Lung Association). If

you belong to one or more of these groups, their bulletins or newsletters will keep you informed.

Newspapers, radio and television will report on how the Act is being carried out, both nationally and in your local area.

You can also contact EPA and your state, regional or local air pollution control agencies to receive information directly on Clean Air Act activities.

The United States Congress monitors how federal agencies are carrying out the laws. Contact your Congressional representative or your Senator to get more information on Congressional hearings and reports on how EPA is carrying out the Clean Air Act. You can also request reports from the United States General Accounting Office (GAO), the Congressional investigative agency which reviews how EPA carries out the Clean Air Act.

State legislatures review how state agencies carry out air pollution control laws. Ask your state representative for more information.

Over time, the Clean Air Act will reduce air pollution. How will you know this is happening?

Sometimes reduced pollution causes changes so great you can literally see the difference: the air is much cleaner and clearer than it was! But you can only be sure there has been a permanent change for the better if the good air continues for a long time—weeks, months or years, during different weather conditions.

Monitoring air quality is the best way to know if the air is getting cleaner, because monitoring produces numbers that tell how much of a pollutant is in the air. You can request EPA, state or local monitoring reports that show changes over time. For example, sulfur dioxide levels will drop as power plants and other sources are cleaned up. This clean-up will happen in stages through the year 2000, so monitoring reports will tell you how the cleanup is going. Your eyes, nose and throat may also detect the change as smoggy areas clean up, but monitoring data remain the best way to check on overall improvement in air quality over time.

Monitoring will be carried out by EPA, state and regional air pollution control agencies, and by the owners of individual sources. Air pollution monitoring stations are set up all over the country, collecting information on various pollutants. Contact EPA, your state, regional or local air pollution control agency, for information on monitoring programs and monitoring reports.

How will you know the Clean Air Act is improving the environment?

Some environmental improvements will be relatively easy to detect. People who live in the eastern United States should see much less summertime haze. Also, we'll know the ozone level is increasing in the stratosphere because scientists measure ozone content. What about lakes and streams harmed by acid rain and acid aero sols? We should see improvement as sulfur dioxide and nitrogen oxide levels decline, resulting in decreased acid rain and acid aerosols, but we don't know exactly how long it will take to restore lakes and streams and we don't know exactly what the lakes and streams and their inhabitants, including fish, will be like when air pollution is reduced.

What will be the benefits for human health of reductions in air pollution?

People who now live in smoggy areas will have less eye, nose and throat irritation as smog levels are reduced. Reductions in air pollution will also lead to declines in cancer and other serious health problems.

Keep an eye on the Clean Air Act; it could change your life!

Glossary

This glossary has definitions for technical words used in the Clean Air Act summary. For the most part, the glossary provides fuller definitions than those given in the summary itself. When a word or group of words is printed in italics within a definition, that tells you that you'll find a definition of the word or group of words elsewhere in the glossary.

Acid rain — Air *pollution* produced when acid chemicals are incorporated into rain, snow, fog or mist. The "acid" in acid rain comes from sulfur oxides and *nitrogen oxides*, products of burning coal and other fuels and from certain industrial processes. The sulfur oxides and nitrogen oxides are related to two strong acids: sulfuric acid and nitric acid. When sulfur dioxide and nitrogen oxides are released from power plants and other *sources*, winds blow them far from their source. If the acid chemicals in the air are blown into areas where the weather is wet, the acids can fall to Earth in the rain, snow, fog or mist. In areas where the weather is dry, the acid chemicals may become incorporated into dusts or smokes. Acid rain can damage the environment, human health and property.

Alternative fuels — Fuels that can replace ordinary gasoline. Alternative fuels may have particularly desirable energy efficiency and *pollution* reduction features. Alternative fuels include compressed natural gas, alcohols, liquefied petroleum gas (LPG), and electricity. The 1990 *Clean Air Act* encourages development and sale of alternative fuels.

Attainment area — A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant. An area may have an acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus, an area could be both attainment and nonattainment at the same time. Attainment areas are defined using federal pollutant limits set by EPA.

Carbon monoxide (CO) — A colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil and wood. Carbon monoxide is also produced from incomplete *combustion* of many natural and synthetic products. For instance, cigarette smoke contains carbon monoxide. When carbon monoxide gets into the body, the carbon monoxide combines with chemicals in the blood and prevents the blood from bringing oxygen to cells, tissues and organs. The body's parts need oxygen for energy, so high-level exposures to carbon monoxide can cause serious health effects, with death possible from massive exposures. Symptoms of exposure to carbon monoxide can include vision problems, reduced alertness, and general reduction in mental and physical functions. Carbon monoxide exposures are especially harmful to people with heart, lung and circulatory system diseases.

CFCs **(chlorofluorocarbons)**— These chemicals and some related chemicals have been used in great quantities in industry, for refrigeration and air conditioning, and in consumer products. CFCs and their relatives, when released into the air, rise into the *stratosphere*, a layer of the atmosphere high above the Earth. In the stratosphere, CFCs and their relatives take part in chemical reactions which result in reduction of the stratospheric *ozone* layer, which protects the Earth's surface from harmful effects of radiation from the sun. The 1990 *Clean Air Act* includes provisions for reducing releases (emissions) and eliminating production and use of these ozone-destroying chemicals.

Clean Air Act — The original Clean Air Act was passed in 1963, but our national air pollution control program is actually based on the 1970 version of the law. The 1990 Clean Air Act Amendments are the most far-reaching revisions of the 1970 law. In this summary, we refer to the 1990 amendments as the 1990 Clean Air Act.

Clean fuels — Low-pollution fuels that can replace ordinary gasoline. These are *alternative* fuels, including gasohol (gasoline-alcohol mixtures), natural gas and LPG (liquefied petroleum gas).

Combustion — burning. Many important pollutants, such as *sulfur dioxide, nitrogen oxides*, and *particulates* (PM-10) are combustion products, often products of the burning of fuels such as coal, oil, gas and wood.

Continuous emission monitoring systems **(CEMS)**— machines which measure, on a continuous basis, *pollutants* released by a *source*. The 1990 *Clean Air Act* requires continuous emission monitoring systems for certain large sources.

Control technology; control measures — equipment, processes or actions used to reduce air pollution. The extent of pollution reduction varies among technologies and measures. In general, control technologies and measures that do the best job of reducing pollution will be required in the areas with the worst pollution. For example, the *best available control technology/best available control measures* (BACT, DACM) will be required in serious *nonattainment areas* for *particulates*, a *criteria air pollutant*. A similar high level of pollution reduction will be achieved with *maximum achievable control technology* (MACT) which will be required for *sources* releasing *hazardous air pollutants*.

Criteria air pollutants — a group of very common *air pollutants* regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution). Criteria air pollutants are widely distributed all over the country.

Curtailment programs — restrictions on operation of fireplaces and woodstoves in areas where these home heat sources make major contributions to *pollution*.

Emission — release of *pollutants* into the air from a *source*. We say sources *emit* pollutants. *Continuous emission monitoring systems* (CEMS) are machines which some large sources are required to install, to make continuous measurements of pollutant release.

Enforcement — the legal methods used to make polluters obey the *Clean Air Act*. Enforcement methods include citations of polluters for violations of the law (citations are much like traffic tickets), fines and even jail terms. EPA and the state and local governments are responsible for enforcement of the *Clean Air Act*, but if they don't enforce the law, members of the public can sue EPA or the states to get action. Citizens can also sue violating *sources*, apart from any action EPA or state or local governments have taken. Before the 1990 Clean Air Act, all enforcement actions had to be handled through the courts. The 1990 *Clean Air Act* gave EPA authority so that, in some cases, EPA can fine violators without going to court first. The purpose of this new authority is to speed up violating sources' compliance with the law and reduce court time and cost.

Hazardous air pollutants **(HAPs)** — chemicals that cause serious health and environmental effects. Health effects include cancer, birth defects, nervous system problems and death due to massive accidental releases such as occurred at the pesticide plant in Bhopal, India. Hazardous air pollutants are released by sources such as chemical plants, dry cleaners, printing plants, and motor vehicles (cars, trucks, buses, etc.)

***Inspection and maintenance program* (I/M program)** — Auto inspection programs are required for some polluted areas. These periodic inspections, usually done once a year or once every two years, check whether a car is being maintained to keep *pollution* down and whether emission control systems are working properly. Vehicles which do not pass inspection must be repaired. As of 1992, 111 urban areas in 35 states already had I/M programs. Under the 1990 *Clean Air Act*, some especially polluted areas will have to have *enhanced inspection and maintenance programs*, using special machines that can check for such things as how much pollution a car produces during actual driving conditions.

International air pollution — Canada and Mexico, the United States' neighbors, share the air at our borders. *Pollution* moves across the national borders; this international pollution can be serious. The 1990 *Clean Air Act* includes provisions for cooperative efforts to reduce pollution that originates in one country and affects another.

Interstate air pollution — In many areas, two or more states share the same air. We say these states are in the same air basin defined by geography and wind patterns. Often, air *pollution* moves out of the state in which it is produced into another state. Some pollutants, such as the power plant *combustion* products that cause *acid rain*, may travel over several states before affecting health, the environment and property. The 1990 *Clean Air Act* includes many provisions, such as interstate compacts, to help states work together to protect the air they share. Reducing interstate air pollution is very important since many Americans live and work in areas where more than one state is part of a single metropolitan area.

***Material safety data sheets* (MSDS)** — product safety information sheets prepared by manufacturers and marketers of products containing toxic chemicals. These sheets can be obtained by requesting them from the manufacturer or marketer. Some stores, such as hardware stores, may have material safety data sheets on hand for products they sell.

Mobile sources — moving objects that release *pollution*; mobile sources include cars, trucks, buses, planes, trains, motorcycles and gasoline-powered lawn mowers. Mobile sources are divided into two groups: road vehicles, which includes cars, trucks and buses, and non-road vehicles, which includes trains, planes and lawn mowers.

***Monitoring* (monitor)** — Measurement of *air pollution* is referred to as monitoring. EPA, state and local agencies measure the types and amounts of pollutants in community air. The 1990 *Clean Air Act* requires certain large polluters to perform enhanced monitoring to provide an accurate picture of their pollutant releases. Enhanced monitoring programs may include keeping records on materials used by the *source*, periodic inspections, and installation of *continuous emission monitoring systems* (CEMS). Continuous emission monitoring systems will measure, on a continuous basis, how much pollution is being released into the air. The 1990 *Clean Air Act* requires states to monitor community air in polluted areas to check on whether the areas are being cleaned up according to schedules set out in the law.

***Nitrogen oxides* (NOx)** — *a criteria air pollutant*. Nitrogen oxides are produced from burning fuels, including gasoline and coal. Nitrogen oxides are smog-formers, which react with volatile organic compounds to form smog. Nitrogen oxides are also major components of acid rain.

Nonattainment area — a geographic area in which the level of a *criteria air pollutant* is higher than the level allowed by the federal standards. A single geographic area may have acceptable levels of one criteria air pollutant but unacceptable levels of one or more other criteria air pollutants; thus, an area can be both attainment and nonattainment at the same time. It has been estimated that 60% of Americans live in nonattainment areas.

Offset — a method used in the 1990 *Clean Air Act* to give companies which own or operate large (major) *sources* in *nonattainment areas* flexibility in meeting overall pollution reduction requirements when changing production processes. If the owner or operator of the source wishes to increase release of a *criteria air pollutant*, an *offset* (reduction of a somewhat greater amount of the same pollutant) must be obtained either at the same plant or by purchasing offsets from another company.

***Oxygenated fuel* (oxyfuel)** — special type of gasoline, which burns more completely than regular gasoline in cold start conditions; more complete burning results in reduced production of *carbon monoxide*, a *criteria air pollutant*. In some parts of the country, carbon monoxide release from cars starting up in cold weather makes a major contribution to pollution. In these areas, gasoline refiners must market oxygenated fuels, which contain a higher oxygen content than regular gasoline. Some gasoline companies started selling oxyfuels in cities with carbon monoxide problems before the 1990 *Clean Air Act* was passed.

Ozone — a gas which is a variety of oxygen. The oxygen gas found in the air consists of two oxygen atoms stuck together; this is molecular oxygen. Ozone consists of three oxygen atoms stuck together into an ozone molecule. Ozone occurs in nature; it produces the sharp smell you notice near a lightning strike. High concentrations of ozone gas are found in a layer of the atmosphere — the *stratosphere*—high above the Earth. Stratospheric ozone shields the Earth against harmful rays from the sun, particularly *ultraviolet B*. *Smog's* main component is ozone; this ground-level ozone is a product of reactions among chemicals produced by burning coal, gasoline and other fuels, and chemicals found in products including solvents, paints, hairsprays, etc.

Ozone hole — thin place in the ozone layer located in the *stratosphere* high above the Earth. Stratospheric ozone thinning has been linked to destruction of stratospheric ozone by *CFCs* and related chemicals. The 1990 *Clean Air Act* has provisions to reduce and eliminate ozone-destroying chemicals' production and use. Ozone holes have been found above Antarctica and above Canada and northern parts of the United States, as well as above northern Europe.

***Particulates; particulate matter* (PM-10)** — *a criteria air pollutant*. Particulate matter includes dust, soot and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses, incineration of garbage, mixing and application of fertilizers and pesticides, road construction, industrial processes such as steelmaking, mining operations, agricultural burning (field and slash burning), and operation of fireplaces and woodstoves. Particulate pollution can cause eye, nose and throat irritation and other health problems.

Permit — a document that resembles a license, required by the *Clean Air Act* for big (major) sources of air pollution, such as power plants, chemical factories and, in some cases, smaller polluters. Usually permits will be given out by states, but if EPA has disapproved part or all of a state permit program, EPA will give out the permits in that state. The 1990 *Clean Air Act* includes requirements for permit applications, including provisions for members of the public to participate in

state and EPA reviews of permit applications. Permits will have, in one place, information on all the regulated pollutants at a source. Permits include information on which pollutants are being released, how much the source is allowed to release, and the program that will be used to meet pollutant release requirements. Permits are required both for the operation of plants (operating permits) and for the construction of new plants. The 1990 *Clean Air Act* introduced a nationwide permit system for air pollution control.

Permit fees — fees paid by businesses required to have a *permit*. Permit fees are like the fees drivers pay to register their cars. The money from permit fees will help pay for state air pollution control activities.

***Pollutants* (pollution)** — unwanted chemicals or other materials found in the air. Pollutants can harm health, the environment and property. Many air pollutants occur as gases or vapors, but some are very tiny solid particles: dust, smoke or soot.

Primary standard — a *pollution* limit based on health effects. Primary standards are set for *criteria air pollutants*.

Reformulated gasoline — specially-refined gasoline with low levels of *smog-forming volatile organic compounds* (VOCs) and low levels of *hazardous air pollutants*. The 1990 *Clean Air Act* requires sale of reformulated gasoline in the nine smoggiest areas. Reformulated gasolines were sold in several smoggy areas even before the 1990 *Clean Air Act* was passed.

Secondary standard — a *pollution* limit based on environmental effects such as damage to property, plants, visibility, etc. Secondary standards are set for *criteria air pollutants*.

Smog — a mixture of *pollutants*, principally ground-level *ozone*, produced by chemical reactions in the air involving smog-forming chemicals. A major portion of smog-formers come from burning of petroleum-based fuels such as gasoline. Other smog-formers, *volatile organic compounds*, are found in products such as paints and solvents. Smog can harm health, damage the environment and cause poor visibility. Major smog occurrences are often linked to heavy motor vehicle traffic, sunshine, high temperatures and calm winds or *temperature inversion* (weather condition in which warm air is trapped close to the ground instead of rising). Smog is often worse away from the source of the smog-forming chemicals, since the chemical reactions that result in smog occur in the sky while the reacting chemicals are being blown away from their sources by winds.

Source — any place or object from which *pollutants* are released. A source can be a power plant, factory, dry cleaning business, gas station or farm. Cars, trucks and other motor vehicles are sources, and consumer products and machines used in industry can be sources too. Sources that stay in one place are referred to as *stationary sources*; sources that move around, such as cars or planes, are called *mobile sources*.

***State implementation plan* (SIP)** — a detailed description of the programs a state will use to carry out its responsibilities under the *Clean Air Act*. State implementation plans are collections of the regulations used by a state to reduce air *pollution*. The *Clean Air Act* requires that EPA approve each state implementation plan. Members of the public are given opportunities to participate in review and approval of state implementation plans.

Stationary source — a place or object from which *pollutants* are released and which does not move around. Stationary sources include power plants, gas stations, incinerators, houses etc.

Stratosphere — part of the atmosphere, the gases that encircle the Earth. The stratosphere is a layer of the atmosphere 9-31 miles above the Earth. *Ozone* in the stratosphere filters out harmful sun rays, including a type of sunlight called *ultraviolet B*, which has been linked to health and environmental damage.

Sulfur dioxide — a *criteria air pollutant*. Sulfur dioxide is a gas produced by burning coal, most notably in power plants. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide is closely related to sulfuric acid, a strong acid. Sulfur dioxide plays an important role in the production of *acid rain*.

Temperature inversion — weather condition that as often associated with serious *smog*. In a temperature inversion, warm air doesn't rise because it is trapped near the ground by a layer of heavy colder air above it. *Pollutants* in the warm air, especially smog and smog-forming chemicals, including *volatile organic compounds*, are trapped close to the ground. As people continue driving, and sources other than motor vehicles continue to release smog-forming pollutants into the air, the smog level keeps getting worse.

***Ultraviolet B* (UVB)** — a type of sunlight. The *ozone* in the *stratosphere*, high above the Earth, filters out ultraviolet B rays and keeps them from reaching the Earth. Ultraviolet B exposure has been associated with skin cancer, eye cataracts and damage to the environment. Thinning of the ozone layer in the stratosphere results in increased amounts of ultraviolet B reaching the Earth.

Vapor recovery nozzles — special gas pump nozzles that will reduce release of gasoline vapor into the air when people put gas in their cars. There are several types of vapor recovery nozzles, so nozzles may look different at different gas stations. The 1990 *Clean Air Act* requires installation of vapor recovery nozzles at gas stations in *smoggy* areas.

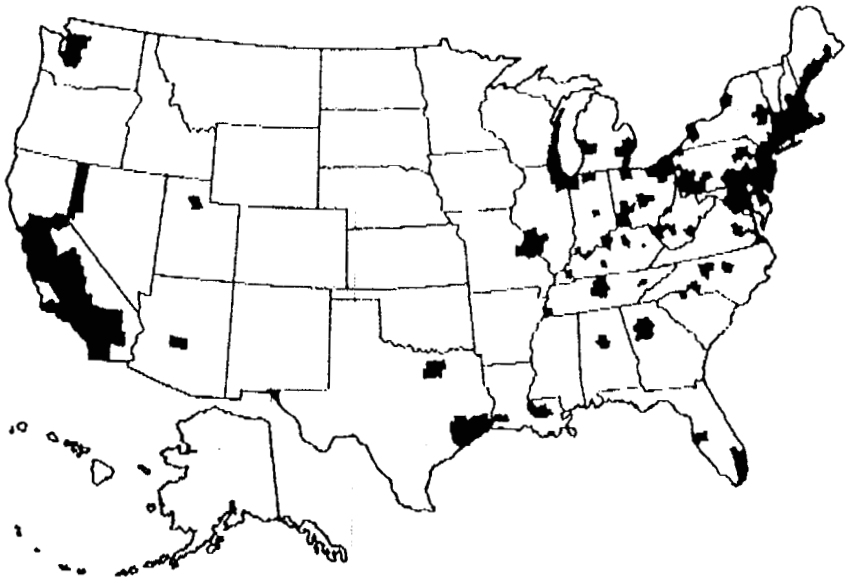
***Volatile organic compounds* (VOCs)** — Organic chemicals all contain the element carbon (C); organic chemicals are the basic chemicals found in living things and in products derived from living things, such as coal, petroleum and refined petroleum products. Many of the organic chemicals we use do not occur in Nature, but were synthesized by chemists in laboratories. *Volatile* chemicals produce *vapors* readily, at room temperature and normal atmospheric pressure, vapors escape easily from volatile liquid chemicals. Volatile organic chemicals include gasoline, industrial chemicals such as benzene, solvents such as toluene and xylene, and tetrachloroethylene (perchloroethylene, the principal dry cleaning solvent). Many volatile organic chemicals are also *hazardous air pollutants*; for example, benzene causes cancer.

The Common Air Pollutants (Criteria Air Pollutants)

Name	Source	Health Effects	Environmental Effects	Property Damage
Ozone (ground-level ozone is the principal component of smog)	chemical reaction of pollutants, VOCs and NOx	breathing problems, reduced lung function, asthma, irritates eyes, stuffy nose, reduced resistance to colds and other infections, may speed up aging of lung tissue	ozone can damage plants and trees; smog can cause reduced visibility	Damages rubber, fabrics, etc.
VOCs* (volatile organic compounds); smog-formers	VOCs are released from burning fuel (gasoline, oil, wood, coal, natural gas, etc.), solvents, paints glues and other products used at work or at home. Cars are an important source of VOCs. VOCs include chemicals such as benzene, toluene, methylene chloride and methyl chloroform	In addition to ozone (smog) effects, many VOCs can cause serious health problems such as cancer and other effects	In addition to ozone (smog) effects, some VOCs such as formaldehyde and ethylene may harm plants	
Nitrogen Dioxide (one of the NOx), smog-forming chemical	burning of gasoline, natural gas, coal, oil etc. Cars are an important source of NO2	lung damage, illnesses of breathing passages and lungs (respiratory system)	nitrogen dioxide is an ingredient of acid rain (acid aerosols), which can damage trees and lakes. Acid aerosols can reduce visibility.	acid aerosols can eat away stone used on buildings, statues, monuments, etc.
Carbon Monoxide (CO)	burning of gasoline, wood, natural gas, coal, oil, etc.	reduces ability of blood to bring oxygen to body cells and tissues; cells and tissues need oxygen to work. Carbon monoxide may be particularly hazardous to people who have heart or circulatory (blood vessel) problems and people who have damaged lungs or breathing passages		
Particulate Matter (PM-10); (dust, smoke, soot)	burning of wood, diesel and other fuels, industrial plants, agriculture (plowing, burning off fields); unpaved roads	nose and throat irritation, lung damage, bronchitis, early death	particulates are the main source of haze that reduces visibility	ashes, soots, smokes and dusts can dirty and discolor structures and other property, including clothes and furniture
Sulfur Dioxide	burning of coal and oil, especially high sulfur coal from the Eastern United States, industrial processes (paper, metals)	breathing problems, may cause permanent damage to lungs	SO_2 is an ingredient in acid rain (acid aerosols), which can damage trees and lakes. Acid aerosols can also reduce visibility.	acid aerosols can eat away stone used in buildings, statues, monuments, etc.
Lead	leaded gasoline (being phased out), paint (houses, cars), smelters (metal refineries), manufacture of lead storage batteries	brain and other nervous system damage; children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead causes digestive and other health problems.	Lead can harm wildlife	

*All VOCs contain carbon (C), the basic chemical element found in living beings. Carbon-containing chemicals are called *organic*. *Volatile* chemicals escape into the air easily. Many VOCs, such as the chemicals listed in the table, are also *hazardous* air pollutants, which can cause very serious illnesses. EPA does not list VOCs as criteria air pollutants, but they are included in this list of pollutants because efforts to control smog target VOCs for reduction.

Ozone Nonattainment Areas



EXTREME
Ozone standard must be met by 2010

Los Angeles-South Coast Air Basin, CA

SEVERE
Ozone standard must be met by 2007

Chicago-Gary-Lake County, IL-IN
Houston-Galveston-Brazoria, TX
Milwaukee-Racine, WI
New York-N New Jer-Long Is, NY-NJ-CT
Southeast Desert Modified-Air Quality Maintenance Area, CA

SEVERE
Ozone standard must be met by 2005

Baltimore, MD
Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD
San Diego, CA
Ventura Co, CA

SERIOUS
Ozone standard must be met by 1999

Atlanta, GA
Baton Rouge, LA
Beaumont-Port Arthur, TX
Boston-Lawrence-Worcester (E.MS), MA-NH
El Paso, TX
Greater Connecticut
Portsmouth-Dover-Rochester, NH
Providence (All RI), RI
Sacramento Metro, CA
San Joaquin Valley, CA
Springfield (Western MA), MA
Washington, DC-MD VA

MODERATE
Ozone standard must be met by November 1996

Atlantic City,NJ
Charleston, WV
Charlotte-Gastonia, NC
Cincinnati-Hamilton, OH-KY
Cleveland-Akron-Lorain, OH
Dallas-Fort Worth, TX
Dayton-Springfield, OH
Detroit-Ann Arbor, MI
Grand Rapids, MI
Greensboro-Winston Salem-High Point, NC
Huntington-Ashland, WV-KY
Kewaunee Co, WI
Knox & Lincoln Cos, ME
Lewiston-Auburn, ME
Louisville, KY-IN
Manitowoc Co, WI
Miami-Fort Lauderdale-W.Palm Beach, FL
Monterey Bay, CA
Muskegon, MI
Nashville, TN
Parkersburg, WV
Phoenix, AZ
Pittsburgh-Beaver Valley, PA
Portland, ME
Raleigh-Durham, NC
Reading, PA
Richmond, VA
Salt Lake City, UT
San Francisco-Bay Area, CA
Santa Barbara-Santa Maria-Lompoc, CA
Sheboygan, WI
St. Louis, MO-IL
Toledo, OH

MARGINAL
Ozone standard must be met by 1993

Albany-Schenectady-Troy, NY
Allentown-Bethlehem-Easton, PA-NJ
Altoona, PA
Birmingham, AL
Buffalo-Niagara Falls, NY
Canton, OH
Columbus, OH
Door Co, WI
Edmonson Co, KY
Erie, PA
Essex Co (Whiteface Mtn), NY
Evansville, IN
Greenbrier Co, WV
Hancock & Waldo Cos, ME
Harrisburg-Lebanon-Carlisle, PA
Indianapolis, IN
Jefferson Co, NY
Jersey Co, IL
Johnstown, PA
Kent and Queen Anne's Cos, MD
Knoxville, TN
Lake Charles, LA
Lancaster, PA
Lexington-Fayette, KY
Manchester, NH
Memphis, TN
Norfolk-Virginia Beach-Newport News, VA
Owensboro, KY
Paducah, KY
Portland-Vancouver,OR-WA
Poughkeepsie, NY
Reno, NV
Scranton-Wilkes-Barre, PA
Seattle-Tacoma, WA
Smyth Co, VA (White Top Mtn)
South Bend-Elkhart, IN
Sussex Co, DE
Tampa-St.Petersburg-Clearwater, FL
Walworth Co,WI
York, PA
Youngstown-Warren-Sharon, OH-PA

(Table current as of April, 1993)

Carbon Monoxide Nonattinment Areas

State	City/area
Alaska	Anchorage area Fairbanks North Star
Arizona	Phoenix
California	Chico Fresno Lake Tahoe-South Shore Los Angeles South Coast Air Basin* Modesto Sacramento San Diego San Francisco-Oakland-San Jose Stockton
Colorado	Colorado Springs Denver-Boulder Fort Collins Longmont
Connecticut	Hartford-New Britain-Middletown
District of Columbia	Washington, D.C. D.C. Area, Maryland, Virginia
Massachusetts	Boston
Maryland	Baltimore Washington, D.C. area-Maryland, DC, Virginia
Minnesota	Duluth Minneapolis-St Paul
Montana	Missoula
North Carolina	Raleigh-Durham Winston-Salem
New Jersey	New York Metropolitan area - Connecticut, New York, New Jersey Camden-Philadelphia, Pennsylvania
New Mexico	Albuquerque
Nevada	Las Vegas Reno
New York	New York metropolitan area-New York, Long Island, New Jersey, Connecticut Syracuse
Ohio	Cleveland
Oregon	Grant's Pass Klamath Falls Medford Portland-Vancouver Washington
Pennsylvania	Philadelphia-Camden, New Jersey
Tennessee	Memphis
Texas	El Paso
Utah	Ogden Provo-Orem
Virginia	Washington, D.C. metropolitan area-Virginia, D.C. Maryland
Washington	Vancouver, Washington-Portland, Oregon Seattle-Tacoma Spokane

*Los Angeles- South Coast Air Basin is the only carbon monoxide nonattainment area classified as "serious", all others are classified as "moderate". All areas listed as "moderate" must meet the CO standard by December, 1995. The "serious" area must meet the CO standard by December, 2000.

Particulate (PM-10) Nonattainment Areas

MODERATE

Areas must meet PM-10 standards by December 31, 1994

Alaska	Anchorage, Juneau
Arizona	Santa Cruz, Pima, Maricopa, Pinal and Gila counties, Yuma Paul's Spur, Nogales
California	Inyo, San Bernadino, Kern, Mono, Stanislaus, Madera, Riverside (eastern part), San Bernardino (part) counties
Colorado	Archuleta, Adams, Denver, Boulder, San Miguel, Prowers, Pitkin, Fremont counties
Idaho	Ada (Boise), Shoshone, Bannock, Power (Pocatello), Bonner counties
Illinois	Cook (Chicago), LaSalle, Oglesby, Madison counties
Indiana	Lake (Gary, Hammond, East Chicago) county
Maine	Aroostook (Presque Isle) county
Michigan	Wayne (Detroit) county
Minnesota	Ramsey, Olmstead counties
Montana	Flathead, Lincoln, Lake Missoula, Libbey, Rosebud, Silver Bow, Butte counties
Nevada	Washoe (Reno) county
New Mexico	Dona Ana county
Ohio	Cuyahoga (Cleveland), Jefferson (Steubenville) counties
Oregon	Jackson (Ashland-Medford), Josephine (Grants Pass), Klamath Falls, Lane (Eugene), Union (LaGrande) counties
Pennsylvania	Allegheny (includes Clairton) county Liberty-Lincoln-Portview-Glassport boroughs-Clairton
Texas	El Paso county
Utah	Salt Lake (Salt Lake City), Utah County
Washington	King (Seattle), Pierce (Tacoma), Spokane, Yakima, thurston (Olympia, Tumwater), Walla Walla counties
West Virginia	Brooke (near WV border at Steubenville) county
Wyoming	Sheridan county

SERIOUS

Areas must meet PM-10 standards by December 31, 2001

California	San Joaquin Valley, Owens Valley, South Coast Air Basin, Coachella Valley
Nevada	Las Vegas

State and Territorial Air Pollution Control Agencies

Alabama Department of Environmental Management
Air Division
1751 Dickenson Drive
Montgomery AL 36130
(205) 271-7861

Alaska Department of Environmental Conservation
Air Quality Management Program
3220 Hospital Drive, P.O. Box 0
Juneau AL 99811-1800
(907) 465-5100

American Samoa
Environmental Quality Commission
Governor's Office
Pago Pago,
American Samoa 96799
011-(684) 633-4116

Arizona Department of Environmental Quality
Office of Air Quality
P.O. Box 600
Phoenix AZ 85001-0600
(602) 207-2308

Arkansas Department of Pollution Control and Ecology
Air Division
8001 National Drive,
P.O. Box 9583
Little Rock AR 72209
(501) 562-7444

Secretary of Environmental Affairs
California Air Resources Board
P.O. Box 2815
Sacramento CA 95812
(916), 445-4383

Colorado Department of Health
Air Pollution Control Division
4210 E 11th Avenue
Denver CO 80220
(303) 331-8500

Connecticut Department of Environmental Protection
Bureau of Air Management
165 Capitol Avenue
Hartford CT 06106
(203) 566-2506

Department of Natural Resources & Environmental Control
Division of Air and Waste Management
89 Kings Highway, P.O. Box 1401
Dover DE 19903
(302) 739-4791

District of Columbia
Air Quality Control and Monitoring Branch
2100 Martin Luther King Ave, SE
Washington DC 20020
(202) 404-1120

Florida Department of Environmental Regulation
Air Resources Management
2600 Blair Stone Road
Tallahassee FL 32399-2400
(904) 488 1344

Georgia Department of Natural Resources
Environmental Protection Division
205 Butler Street, SE
Atlanta GA 30344
(404) 656-6900

Guam Environmental Protection Agency
Complex Unit D-107
130 Rojas Street
Harmon, Guam 96911
011-(671) 646-8863

Hawaii State Department of Health
Environmental Management Division
Air Pollution Section
1270 Queen Emma St., Suite 900
Honolulu HI 96813
(808) 586-4019

Idaho Division of Environmental Quality
Air Quality Bureau
1410 North Hilton
Boise ID 83706
(208) 334-5898

Illinois Environmental Protection Agency
Division of Air Pollution Control
2200 Churchill Road
P.O. Box 19276
Springfield IL 62794-9276
(217) 782-7326

Indiana Department of Environmental Management
Air Pollution Control Board
105 S. Meridian Street
P.O. Box 6015
Indianapolis IN 46206-6015
(317) 232-8384

Iowa Department of Natural Resources
Air Quality Section
Henry A. Wallace Building, 900 E. Grand St
Des Moines IA 50319
(515) 281-0852

Kansas Department of Health and Environment
Bureau of Air and Waste Management
Forbes Field, Building 740
Topeka KS 66620
(913) 296-1593

Kentucky Department for Environmental Protection
Division of Air Quality
316 St. Clair Mall
Frankfort KY 40601
(502) 564-3382

Louisiana Department of Environmental Quality
Office of Air Quality and Radiation Protection
Air Quality Division, P.O. Box 82135
Baton Rouge LA 70884-2135
(504) 765-0110

Maine Department of Environmental Protection
Bureau of Air Quality Control
State House, Station 17
Augusta ME 04333
(207) 289-2437

Maryland Department of the Environment
Air Management Administration
2500 Broening Highway
Baltimore MD 21224
(301) 631-3255

Massachusetts Department of Environmental Protection
Division of Air Quality Control
One Winter Street, 8th Floor
Boston MA 02108
(617) 292-5593

Michigan Department of Natural Resources
Air Quality Division
P.O. Box 30028
Lansing MI 48909
(517) 373-7023

Minnesota Pollution Control Agency
Air Quality Division
520 Lafayette Road
Saint Paul MN 55155
(612) 296-7331

Mississippi Department of Environmental Quality
Air Division, Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289
(601) 961-5171

Missouri Department of Natural Resources
Division of Environmental Quality
Air Pollution Control
P.O. Box 176
Jefferson City MO 65102
(314) 751-4817

Montana Department of Health and Environmental Science
Air Quality Bureau
Cogswell Building, Room A116
Helena, MT 59620
(406) 444-3454

Nebraska Department of Environmental Control
Air Quality Division
P.O. Box 98922
Lincoln NE 68509-8922
(402) 471-2189

Nevada Division of Environmental Protection
Bureau of Air Quality
123 West Nye Lane
Carson City NV 89710
(702) 687-5065

New Hampshire Department of Environmental Services
Air Resources Division
64 N. Main Street, Box 2033
Concord NH 03301
(603) 271-1370

New Jersey Department of Environmental Protection
Division of Environmental Quality
Air Program
401 East State Street
Trenton NJ 08625
(609) 292-6710

New Mexico Environmental Improvement Division
Air Quality Bureau
P.O. Box 26110
Santa Fe NM 87502
(505) 827-0070

New York Department of Environmental Conservation
Division of Air Resources
50 Wolf Road
Albany NY 12223-3250
(518) 457-7230

North Carolina Division of Environmental Management
Air Quality Section
P.O. Box 27687
Raleigh NC 27611-7687
(919) 733-3340

North Dakota State Department of Health
Environmental Health Section
1200 Missouri Avenue
Bismarck ND 58502-5520
(701) 221-5188

Ohio Environmental Protection Agency
Divison of Air Pollution Control
1800 WaterMark Drive
Columbus, OH 43266-0149
(614) 644-2270

Oklahoma State Dept. of Health
Air Quality Service
1000 Northeast 10th Street, P.O. Box 53551
Oklahoma City, OK 73152
(405) 271-5220

Oregon Department of Environmental Quality
Air Quality Control Division
811 SW 6th Avenue, 11th Floor
Portland OR 97204
(503) 229-5287

Pennsylvania Department of Environmental Resources
Bureau of Air Quality Control
101 South Second St. P.O. Box 2357
Harrisburg PA 17105-2357
(717) 787-9702

Puerto Rico Environmental Quality Board
Edificio Banco National Plaza
431 Avenue Ponce DeLeon
Hato Rey PR 00917
(809) 767-8071

Rhode Island Department of Environmental Mgmt.
Division of Air and Hazardous Materials
291 Promenade Street
Providence RI 02908-5767
(401) 277-2808

South Carolina Department of Health and Environmental Control
Bureau of Air Quality Control
2600 Bull Street
Columbus SC 29201
(803) 734-4750

South Dakota Department of Environment and Natural Resources
Air Program
523 East Capitol Avenue
Pierre SD 57501
(605) 773-3153

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
701 Broadway
Nashville TN 37243-1531
(615) 741-3931

State of Texas
Texas Air Control Board
12124 Park 35 Circle
Austin TX 78753
(512) 908-1000

Utah Department of Environmental Quality
Division of Air Quality
1950 West North Temple
Salt Lake City UT 84114-4820
(801) 536-4000

Vermont Agency of Natural Resources
Air Pollution Control Division
103 S. Main Street, Building 3 South
Waterbury VT 05676
(802) 244-8731

Virgin Islands Department of Planning & Natural Resources
Division of Environmental Protection
1118 C'sted Sx
St. Croix VI 00820-5065
(809) 773-0565

State of Virginia
Department of Air Pollution Control
P.O. Box 10089
Richmond VA 23240
(804) 786-2378

Washington State
Department of Ecology
P.O. Box 47600
Olympia WA 98504-7600
(206) 459-6632

State of West Virginia
Air Pollution Commission
1558 Washington Street East
Charleston WV 25311
(304) 348-2275

Wisconsin Department of Natural Resources
Bureau of Air Management
Box 7921
Madison WI 53707
(608) 266-7718

Wyoming Department of Environmental Quality
Air Quality Division
122 West 25th Street
Cheyenne WY 82002
(307) 777-7391

EPA Regional Offices

Region 1
Air, Pesticides and Toxics
Management Division (AAA)
U.S. EPA - Region 1
John F. Kennedy Federal Building
One Congress Street
Boston MA 02203
(617) 565-3800

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)

Region 2
Air and Waste Management Division
Room 1000
U.S. EPA - Region 2
26 Federal Plaza
New York NY 10278
(212) 264-2301

(New Jersey, New York, Puerto Rico, Virgin Islands)

Region 3
Air, Radiation and Toxics Division
(3AT00)
U.S. EPA - Region 3
841 Chestnut Street
Philadelphia PA 19107
(215) 597-3025

(Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia)

Region 4
Air, Pesticides and Toxics
Management Division
U.S. EPA - Region 4
345 Courtland Street, N.E.
Atlanta GA 30365
(404) 347-3043

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)

Region 5
Air and Radiation Division (A-18J)
U.S. EPA - Region 5
77 West Jackson Boulevard
Chicago IL 60604
(312) 353-2212

(Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)

Region 6
Air, Pesticides and Toxics Division
U.S. EPA - Region 6
First Interstate Bank Tower at
Fountain Place
1445 Ross Avenue, 12th Floor, Suite
1200
Dallas TX 75202-2733
(214) 655-7200

(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

Region 7
Air and Toxics Division (ARTX)
U.S. EPA - Region 7
726 Minnesota Avenue
Kansas City KS 66101
(913) 551-7020

(Iowa, Kansas, Missouri, Nebraska)

Region 8
Air and Toxics Division
U.S. EPA - Region 8
999 18th Street, Suite 500
Denver CO 80202-2405
(303) 293-1438

(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)

Region 9
Air And Toxics Division (A-1)
U.S. EPA - Region 9
75 Hawthorne Street
San Francisco CA 94105
(415) 744-1219

(Arizona, California, Hawaii, Nevada, American Samoa, Guam)

Region 10
Air and Toxics Division (AT-81)
U.S. EPA - Region 10
1200 Sixth Avenue
Seattle WA 98101
(206) 553-2770

(Alaska, Idaho, Oregon, Washington)

The Plain English Guide to the Clean Air Act

A project of the Office of Policy Analysis and Review

Office of Air and Radiation

Rob Brenner, Director

Author and project director: Myra Karstadt, Office of Solid Waste

Editor: Brian Callaghan, Office of the Assistant Administrator for Air and Radiation

Photography consultant: S.C. Delaney, Office of Communication, Education and Public Affairs

Project coordination: Jeff Clark, Office of Air Quality Planning and Standards, Office of Air and Radiation

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Background on Air Issues Affecting BRAC

All nonattainment areas are faced with the challenge of reducing air pollution emissions to meet safe air standards established through the Clean Air Act. In California, most of the local air agencies in nonattainment areas have already adopted controls on major stationary sources, thus completing the first and relatively easier steps of air pollution control. Air districts must now meet new requirements set by the 1990 amendments to the Clean Air Act, as well as the requirements of the California Clean Air Act. Following are explanations of some concepts and terms in air pollution control that are important to base closures and a brief discussion of issues that arise from air pollution control requirements.

Emissions Trading, Offsets, and Air Emission Reduction Credits (ERCs)

In order to create greater flexibility in meeting environmental requirements, EPA developed a policy to allow air pollution sources to trade emissions (Emissions Trading Policy Statement, 51 FR 43814). Emissions trading involves the creation of surplus emission reductions through application of advanced control technology, shutdown or curtailment of activities and the use of these emission reductions to meet pollution control requirements at other sources.

In nonattainment areas, major new stationary sources and major modifications are subject to a preconstruction permit requirement that they secure sufficient surplus emission reductions to more than "offset" their emissions. This requirement is designed to allow industrial growth in nonattainment areas without interfering with attainment and maintenance of the air quality standards. In attainment areas, new sources or modifications that might significantly change air quality or contribute to a violation of the national ambient air quality standards may need emission offsets.

Local districts can establish banking programs as part of their State Implementation Plans to store qualified emission reduction credits (ERCs) for later use in offset trades. These reductions must be real, permanent, quantifiable, surplus, and enforceable in order to be banked. Air districts can credit only those reductions that go beyond reductions already required in a rule or regulation. Banking programs usually require that the source apply for the emission reduction credit within a certain time from the date of curtailment or shutdown.

Each air district has a schedule of fees. Fees are generally based on the staff time spent processing the application and producing a report. Fees for ERC applications can be hundreds or thousands of dollars for each air permit held by a facility. Many military bases hold more than one hundred permits. The total cost for a closing base to apply for all of it's possible ERCs may be quite substantial. Because each district has established their own fee schedules and fees can vary greatly from district to district, it is important to consult with the local district for specific information.

Mobile source credits may be used as stationary source offsets or to delay compliance of emission reduction requirements.

Mobile source emission reduction credits are not necessarily valid in perpetuity because the life of the unit generating the reduction is finite. The life span of mobile source emission reduction credits varies depending upon the type of emission reductions used to generate the credit. For example, credits generated from the purchase of low-emission buses can last up to 12 years, credits generated from the purchase of Zero Emission Vehicles can last up to 10 years, and the life of the credits from the accelerated retirement older vehicles can last 3 years. Credits based on vehicle retrofits will have different lifetimes depending on the specifics of the particular case. South Coast AQMD, Sacramento AQMD and San Joaquin Unified APCD have adopted mobile source emission reduction credit rules. Bay Area AQMD and San Diego County APCD are developing mobile credit rules. Consult with local districts concerning availability of programs and rule requirements.

Conformity

Section 176(c) of the Clean Air Act prohibits a federal agency from supporting an action in any area unless the responsible federal agency determines that the action conforms to the applicable air quality implementation plan for the area. Examples of actions supported by the federal government might include review and approval of dredging permits, federal construction projects, airport expansion activities, and private actions taking place on public lands. The purpose of conformity is to ensure that federal actions: will not cause or contribute to new violations of any federal ambient air quality standards; will not increase the frequency or severity of any existing violations of federal ambient air quality standards; and will not delay the timely attainment of federal ambient air quality standards. Under EPA's general conformity regulation promulgated on 11/30/93, a conformity determination is required when the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action exceed specified de minimis thresholds (based on the CAA's major stationary source levels) for the criteria pollutants.

The general conformity rule exempts certain federal actions from these conformity requirements. For example, transfers of real property which are conditioned in leases or contracts on the property being cleaned up under Superfund and where the federal agency does not retain control over emissions associated with the property under lease are exempt. However, realignment of bases is not a separate exemption, and actions associated with increasing a base's activities may require conformity determinations. In addition, federal agencies that provide approvals or funding for reuse-related activities (such as FAA approval or funding of a civil airport) may also have to make conformity determinations.

A conformity determination is made by meeting one of the following criteria: the total of indirect and direct emissions of the action are specifically identified in the emissions forecast in the applicable SIP's attainment or maintenance demonstration; complete emission offsets

Air Issues Impacting Closing Bases

Competing demands for credits or planning offsets: At each closing base, there are several possible parties interested in obtaining air credits or planning offsets. Air Quality Management Districts or Air Pollution Control Districts are the local or regional agencies responsible for regulating air pollution. Air districts may need air credits or planning offsets for their community banks to use in "funding" small businesses or public agencies. Air districts in nonattainment areas may also plan on using the credits or offsets to show progress toward meeting their requirement to attain the air quality standards.

Reuse groups are interested in obtaining air credits or planning offsets as a means of attracting business and revitalizing economic activity at closing bases. Planning offsets may also be needed for conformity determinations when the reuse activities require some form of federal approval or oversight, such as FAA approval of new airports.

Closing bases may need ERCs to cover the clean-up work at Installation Restoration Program (IRP) sites. An operating unit that is transferring from a closing base to another base may need ERCs to realign to the new location.

Military installations that are remaining open or expanding in the same air basin may need credits or planning offsets for conformity determinations or for new source permits. In the FIP areas (South Coast, Ventura, and Sacramento), military installations may need the credits or planning offsets to meet the declining cap on air emissions.

Once a base is slated for closure, all of the above parties must begin analyzing and communicating their need for ERCs and planning offsets within a fairly narrow window of time. For example, the reuse group must develop a good planning estimate as early as possible so the military can factor this need with those of the IRP sites, realigning bases in the air basin, and in FIP areas, bases with a declining cap on emissions.

Monetary Constraints: If air credits or planning offsets are not available for installations remaining open, the military may need to purchase ERCs in the open market. These credits may not be readily available and may be extremely expensive. Application fees are also part of the transaction cost. The money to apply for and purchase credits will probably come from BRAC funds, which are also the source for clean-up. In many air districts, closing bases may be asked by the reuse groups to maintain operating permits for operations that existed on the base, such as permits for generators, boilers, or paint booths, in order to transfer these permits to new owners and operators. The money to pay for maintaining these permits would probably come from the operations and maintenance budgets for the bases, which may be declining. The process of applying for air credits can be costly in terms of the resources needed to quantify emissions and the application fees. In the face of cleanup costs, commanders of closing bases may not believe money should be spent for maintaining

Air Emissions Checklist for Closing Bases

1) Initial general discussion with the local Air District about emissions inventories on the base. Discuss the following:

   - Consistent source identification
   - Requirements or methods for compiling inventory
   - Rules for use of credits
   - How to fill out application form for ERCs
   - Mechanisms for permit transfers to new owners and operators

2) Brief the Air District on the overall picture at the base; discuss base needs and status

3) Meet with the reuse group to discuss their needs and military needs for air credits and planning offsets. Develop draft list. Discuss planned quantification of emissions on base, current DoD policy on air credits, and current legislation.

   The reuse group should begin quantification of their needs for credits and planning offsets, using the same methods as the base. The reuse group should also identify sources that need direct permit transfer.

4) Quantify all emissions, both stationary and mobile, at the base through a source survey. This survey should include preparation of a detailed list of existing air permits showing location, emission factors, and availability for transfer. In quantifying emissions, consideration should be given to whether the base can apply for ERCs for these emissions or whether they will be needed as planning offsets for conformity determinations.

5) Meetings with the Air District, reuse group, and other military bases in the air basin following quantification of emissions. Discuss:

   - Quantification results
   - Needs for permits, credits, and/or planning offsets
   - Air District mechanisms for transfer of permits, application for credits

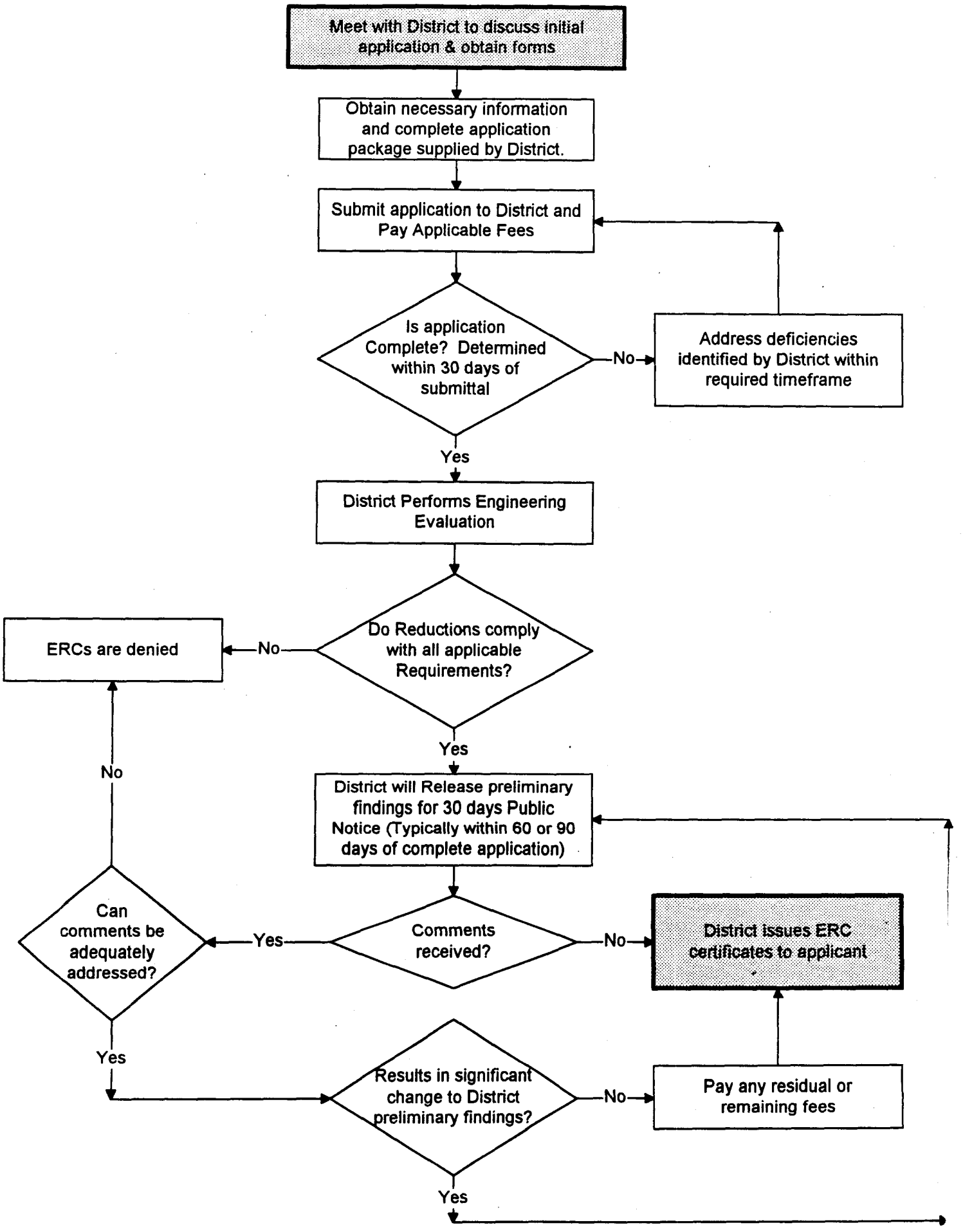
6) Develop draft allocation scheme in consultation with reuse group, air district, and other military bases in the air basin.

7) Receive and review comments from the reuse group, air district, and other military bases.

8) Finalize allocation scheme and implement:

   - Apply for ERCs
   - Arrange permit transfers
   - Document planning offsets for conformity determinations

Procedure to Obtain Emission Reduction Credits



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ANALYSIS OF GENERAL COMPLIANCE

CRITERION 7

COMMUNITY INFRASTRUCTURE

DESCRIPTION: "Pursuant to Public Law 101-510, as amended, on May 5, 1992, the Department of Defense issued guidance with selection criteria for base closure and realignment recommendations. This guidance includes Criterion 7, "the ability of both the existing and potential receiving communities' infrastructure to support forces, missions and personnel." DoD did not provide any specific guidance on how the Services should evaluate this criterion.

ANALYSIS: General compliance with the community infrastructure criterion is analyzed for each service as follows:

ARMY: The Army assigned all installations into operational categories, quantified their military value, and identified possible closure and realignment recommendations. The Army then considered Criteria 5 through 8 as a qualitative assessment of the list of recommendations, and as a means of assessing their financial and operational feasibility. Criterion 7 was addressed under the Operational Requirement called "Quality of Life", the objective of which was to "[p]rovide soldiers and their families a quality of life designed to attract and retain quality volunteers". Community infrastructure indicators included under Quality of Life: community facilities, health care support index, and the Army Communities of Excellence Score. Each of these were derived from the Army's institutional data. In addition, the Army derived community infrastructure information from the Places Rated Almanac. In evaluating its alternatives, the Army examined Criterion 7 in considering overall economic impacts in addition to the economic variables required by Criterion 6.

NAVY: Data for the Navy was generated by certified data call responses. Responses were designed to address the ability of existing infrastructure in the local community to absorb additional Navy personnel and missions. Selected aspects of the Community Infrastructure criterion were measured in the Military Value analysis within the "Quality of Life" subelement. These factors measured off- and on-base housing, child care availability, commute distance, access to education and health care, and crime statistics. Factors were rated and assigned a weight within the military value calculation, which was weighted differently according to its perceived importance within that installation category. Factors which were not fully measured within the "Quality of Life" portion of military value were assessed comprehensively in the data calls submitted by the Navy. The data calls contained more comprehensive listings and statistics on workforce attributes, spouse employment, education options, and ability of local infrastructure to accept growth at various levels.

The Community Infrastructure criterion influenced the Navy's recommendation on one base, NAWC Patuxent River. The Navy BSEC reviewed infrastructure impacts at all sites, and determined that NAWC Patuxent River, Maryland, was being stressed by the cumulative effects

of BRAC recommendations, many of which involved construction of new facilities. Accordingly, the Navy selected alternative sites were found.

AIR FORCE: For its analysis of community infrastructure, the Air Force BCEG developed a number of subelements. The BCEG assigned a color-coded rating scale to assist in evaluating each base. A "Green" rating meant more desirable for retention, "Red" least desirable, and "Yellow" in between. The BCEG also developed grading filters (+ or -) to indicate further distinctions between facilities. Color codes were assigned for each subelement, and were averaged out to a single color code which was assigned for Criterion 7. Subelements examined included: offbase housing, transportation, crime rate, medical care, education, and off-base recreation.

The Air Force analysis relied on various national, local, and service-specific data sources. The Air Force Variable Housing Allowance survey evaluates various cost-related factors for individual bases, and is used to derive the variable housing allowance paid to enlisted personnel. VHA data was used by the Air Force to assess off-base housing and commute information. It should be noted that the objectives of the VHA survey (to measure need for VHA) tend to influence survey responders to maximize negative responses. Thus, quality of life data derived from the VHA survey may appear to show a negative bias towards community infrastructure.

DEFENSE AGENCIES: DLA assessed community impact by collecting data in a number of areas, including local economic indicators, transportation, utilities, workforce availability, housing, education, health care, crime, climate/environment. Questionnaires were completed which included a series of detailed questions concerning each of the topics. For each question, the answer identified a publicly-available source for the data (Bureau of the Census, U.S Department of Commerce, state agencies, local transit authorities, published business directories, and so on). Findings of the questionnaires were presented to the DLA Executive Group for deliberation regarding any significant impacts. The Executive Group concluded that the data did not present any indication that would preclude a recommended receiving community from absorbing the additional forces, missions, and personnel proposed in the recommended realignment scenarios. Community infrastructure was considered adequate for all receiving installations.

CONCLUSION: The services addressed the community infrastructure criteria as required by DoD guidance for the eight criteria. No substantial deviation from criteria was identified.

Crit 7

Economic Impact

Page 11, Question 1: Secretary Widnall, how did you assess the impact of your closure and realignment recommendations on existing and potential receiving communities' infrastructure? Please elaborate. What factors were considered?

Answer: As a general rule, AF active installations are located adjacent to communities that provide outstanding support. In rating community support, we were faced with the difficult task of distinguishing the best of the best. Nevertheless, we approached the evaluation of community support in a very systematic fashion. We adopted essentially the same process and factors for BRAC-95 as used for BRAC-93 to evaluate the ability of both the existing and potential receiving communities' infrastructure to support forces, mission and people. In evaluating Criterion VII, the AF Base Closure Executive Group(BCEG) assessed a number of factors. Nine factors--referred to as subelements--were evaluated: Availability of Housing, Transportation, Shopping, and Recreation; Quality of Education and Medical Services; Proximity to Metro Area; Likelihood of Obtaining Employment and Local Crime Rates. Questions and corresponding grading elements (or goalposts) were developed by the BCEG to assess a community's capability to meet AF needs relative to the nine subelements. The BCEG used an objective, color coded rating scale in order to quantify specific data points relative to the established criterion; "green" represented the highest capability, yellow less so, and red the lowest. Weights were assigned and an overall score was mathematically derived for each installation. Of the 43 active bases evaluated, 18 received ratings of G-; 16-Y+; and 9-Y. The overall Criterion VII grades were considered by the BCEG in the tiering process, and were reviewed by the Secretary of the Air Force.

The Community Infrastructure criteria influenced the Navy's recommendation on one base, NAWC Patuxent River. (Explain.)

Air Force:

Data for Air Force was generated from two primary data sources. One, the Bureau of Labor Statistics, supplied information on _____.

The second was a survey {VHA? Spell} This data source was used by the Air Force to measure _____ This data source was designed for the purpose of _____ However, certain limitations: incentive to show worst-case scenarios.

Community Infrastructure

- 1.a.1. "offbase housing is affordable" <<by whom?>>
- a.2. "Units available for families
  - "Units avail. for singles"
  - "5.3% of off-base housing was rated as unsuitable in latest VHA survey"
  - Median monthly cost of off-base housing based on latest VHA survey
- Transportation systems (including air service & work commute time)
- Off-base public recreation facilities
- Shopping facility
- Local area crime rate

2. Education
   - pupil to teacher ratio
   - academic programs
   - % students going to college
   - off-base education opportunities

3. Spousal Employment
4. Local Medical Care
   - # bed
   - # physicians

Rating of above: 7 subcategories were weighted:

- Offbase housing
- Transportation
- Crime rate
- Medical Care
- Education
- Off-base recreation

sample size data -
Burn. Lab. Stat's.
Data being generated internally.

GAO hasn't been down on criterion 7.
Employment growth & unemployment growth.

Broadest question ≠ broader -

Housing
& Employment
Transportation.

Red / yellow / green system -
goal posts - color code -
numerical source.

yellow / yellowest / green -

color code is for infrastructure at that base.

You cannot conclude that focus on which
we're taking action

Moving soft training out of Hollomon.
Beale has some air qual concerns.

Beale - air quality. It's not our fault that the air is bad.
Boxer & Feinstein letter -

Kirtland air quality - couldn't be a receiver

we didn't close LA, not because of Kirtland's air quality.
both Kirtland & LA HFO labs.
Keeping V lab -

A 3 diff. sub elements made up crit. 2.
1 was air qual.

B After bases were tired & we looked at real world scenarios, operation missions matches & see, could it not?

10 years.

Navy

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ANALYSIS OF GENERAL COMPLIANCE

CRITERION 7

COMMUNITY INFRASTRUCTURE

OK

DESCRIPTION: Pursuant to Public Law 101-510, as amended, on May 5, 1992, the Department of Defense (DOD) issued guidance with selection criteria for the 1993 base closure and realignment recommendations. This guidance includes criterion 7, "The ability of both the existing and potential receiving communities' infrastructure to support forces, missions and personnel." DOD did not provide any specific guidance on how the Services should evaluate this criterion.

ANALYSIS: General compliance with this criterion is analyzed for each Service as follows:

Army: The Army compiled Installation Assessments for each Army installation eligible for closure and realignment. These assessments document Community Infrastructure considerations under Quality of Life and Expandability. Quality of Life was evaluated by ratings for housing and medical care, in addition to a rating from the "Places Rated Almanac." Expandability addresses the workforce capabilities, and utility capacity. In its decision-making process, the Army modified the four Department of Defense Military Value Assessment Criteria to five Measures of Merit. Expandability and Quality of Life were considered in the Army's Measures of Merit. The Army's Analyses and Recommendations Report (Volume III) addressed Community Infrastructure issues for existing and receiving installations for each recommended action.

Navy: The Navy compiled information on community infrastructure for each installation eligible for closure and realignment. Infrastructure factors surveyed included housing availability, education, public utilities, public transportation, health care and recreational facilities. Data was collected on each installation to assess the impact of personnel increases on these infrastructure factors. An analysis of Criterion 7 impacts was done for installations that were recommended for closure or realignment after the review of the Military Value Criteria (Criteria 1 through 4). In some cases the Navy concluded that receiving installations require expansion of, or improvements to, infrastructure at receiving installations. The Navy's Analyses and Recommendations Report (Volume IV) notes when community infrastructure impacts exist due to a relocation.

Air Force: The Air Force completed base-specific questionnaires with Community Infrastructure information for each Air Force installation eligible for closure or realignment. The Air Force's Analyses and Recommendations Report (Volume V) rated existing and potential receiving facilities on the community

infrastructure factors of housing, transportation, recreational facilities, crime rate, education, health care, spousal employment, shopping facilities, and distance to metropolitan centers.

Defense Agencies: Two Defense Agencies are impacted by BRAC-93; the Defense Information Systems Agency, and the Defense Logistics Agency. The Defense Information Systems Agency has concluded that their consolidation will not have significant community infrastructure impacts as it involves relatively small tenants located within the perimeter of existing military bases, not the bases themselves. The Defense Logistics Agency (DLA) completed installation-specific questionnaires that address community infrastructure. DLA took an approach similar to the Army, in that they modified the four DOD Selection Criteria to four DLA Measures of Merit. Some of the factors included in Criteria 7 (Quality of Life, Expandability) were considered in the DLA Measures of Merit. These Measures of Merit were used to recommend closure and realignment actions. Criterion 7 was not specifically addressed in the impact analyses. These impact analyses include a heading of "DOD Selection Criteria 6-8," but primarily focus on the environmental impact, Criterion 8.

CONCLUSION:

There was little direction given to the Services by DOD on how to evaluate Community Infrastructure. The services took varied approaches to take this criterion into account. Each of the services evaluated Community Infrastructure in their decision-making process, and therefore generally complied with the requirement to consider this Criterion.

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ANALYSIS OF SPECIFIC COMPLIANCE
CRITERION 7
COMMUNITY INFRASTRUCTURE

DESCRIPTION: The purpose of this analysis is to evaluate the Department of Defense Services' consideration of community infrastructure in their recommendations of specific installations for closing and realignment. The data on community infrastructure used by the Services in their installation-specific conclusions were evaluated. The methodologies used to consider community infrastructure were evaluated for consistency within each Service. A determination was made on whether the Services complied with Department of Defense (DOD) policy guidance issued pursuant to Public Law 101-510, as amended. Based on the analysis on how the Services considered community infrastructure, recommendations were made on whether a specific installation's status pursuant to BRAC-93 could be revised.

The Services took varied approaches to evaluating this criterion. Criterion 7 is given in DOD's May 5, 1992 policy guidance as, "The ability of both the existing and potential receiving communities' infrastructure to support forces, mission and personnel." No specific guidance was provided on how the Services should evaluate this criterion.

The specific compliance analysis is broken down by Service. The following steps were taken in this analysis:

1. Installation-specific data (compiled in base questionnaires or data calls) were reviewed and compared to the Services' conclusions on community infrastructure in the Recommendations and Analyses Reports (Volumes III-VI).

2. The methodologies used by each Service were evaluated and determinations were made on whether this criterion was applied consistently within each Service, and whether it was evaluated pursuant to DOD's direction.

3. Any discrepancies pursuant to the first two steps were considered in recommending whether a specific installation's status pursuant to BRAC-93 could change.

After evaluating each Service, recommendations for improvements to the community infrastructure evaluation process for BRAC-95 are presented.

ANALYSIS

ARMY

1. Data Evaluation

The Army's process for ranking the value of specific installations involved evaluating five "Measures of Merit." The Measures of Merit were derived from DOD's four Military Value Assessment Criteria. The Measures of Merit incorporate community infrastructure factors, specifically expandability and quality of life. These community infrastructure data are included in the Army's Installation Assessments. These assessments documented community infrastructure by providing ratings from the "Places Rated Almanac", evaluating factors such as off-base housing status, public transportation availability, and health care and education opportunities. The Army's Volume III report includes a discussion of community infrastructure in the "Recommendations and Justification" section for each recommended action. This text on community infrastructure is identical for each action. The Army's canned text mentions that community infrastructure impacts have been considered, and will be addressed. Specific information on how any impacts will be addressed has not been documented. Because this Volume III discussion is all-encompassing, it is not inconsistent with the data compiled on specific bases in the Installation Assessments.

2. Consistency/Compliance

Since the Army includes the same exact text for each recommended action in its Volume III discussion of community infrastructure, the Army is clearly internally consistent in this document. The Installation Assessments consistently address community infrastructure issues in a thorough manner, but do not consistently use the same factors to gauge community infrastructure. For example, in many cases the "Places Rated Almanac" ratings are noted, in others (e.g. Fort Belvoir, Fort Leonard Wood) they are not. Similarly public transportation availability is documented in the majority of cases, but is not universally noted (e.g. not given for Fort Huachuca).

Since the Army utilized community infrastructure factors in it installation selection process, the Army is in compliance with DOD guidance for considering this criterion.

3. Impact on Base Status

There are no recommended changes to any specific base's status due to the Army's evaluation of criterion 7.

<u>NAVY</u>

1. Data Evaluation

The Navy compiled community infrastructure information via data calls from specific installations eligible for closure or realignment. Community infrastructure factors surveyed include housing availability, education, public utilities, public

transportation, health care, and recreational facilities. The data calls rated impacts from hypothetical personnel increases of 20%, 50%, and 100% on these infrastructure factors. The Navy's Volume IV report noted whether community infrastructure impacts would result from specific recommended closure or realignment actions. The only two actions noted in Volume IV as having any significant community infrastructure impacts at receiving bases are the recommended closure of NAS Cecil Field, FL, with relocation of assets to MCAS Cherry Point, NC, and the recommended realignment of missions at NSB New London, CT, to NSB Kings Bay, GA.

The Volume IV Report's conclusions about community infrastructure impacts for these two recommended receiving installations accurately reflect the data call results. The Cherry Point data call notes that a 20% increase in personnel would result in impacts to local public schools, which would require investment to expand schools. In Volume IV, the Navy documented that in FY-96 and FY-97 costs for additional school classrooms in two local communities would results in costs of $36.56M. Similarly, in the case of recommended moves to Kings Bay, the data call notes that increases in personnel will require investments to expand schools and roads. In Volume IV, total costs for these community infrastructure improvements are estimated at $46M.

The Volume IV report also notes community infrastructure impacts for the recommended closure of Naval Air Station, Meridian, MS, with relocation to Naval Air Station, Kingsville, TX. These impacts are described as increased noise, requiring adoption of noise abatement procedures. These should be considered under environmental impacts, rather than community infrastructure. In fact, the Navy includes a discussion on these noise impacts under the environmental attribute of Land Use and Airspace Implications.

The specific compliance review also included selected recommended actions for which the Navy concluded that no significant community infrastructure impacts will occur. In these cases, the Navy's Volume IV accurately reflects the information compiled in specific installation data calls.

2. Consistency/Compliance

The Navy's approach for evaluating community infrastructure impacts was consistently applied across the Service. The Navy has complied with DOD's direction to consider this criterion in its process.

3. Impact on Base Status

There are no recommended changes to any specific base's status due to the Navy's evaluation of Criterion 7.

<u>AIR FORCE</u>

1. Data Evaluation

The Air Force collected specific information on the current status of community infrastructure in base questionnaires. These questionnaires collected information on a wide range of community factors such as housing, transportation, and recreational facilities. The data in the questionnaires was translated into ratings (red, yellow, green) and compiled in the Air Force's Volume V report. Questionnaires for realigning and receiving bases were reviewed, and it was found that the Volume V report accurately translated the questionnaire data.

2. Consistency/Compliance

The Air Force's approach consistently evaluated the current status of community infrastructure, both across the Service as a whole, and across their various flying and operations categories.

The Air Force's Volume V report summarizes community infrastructure ratings for all installations, which demonstrates that community infrastructure was considered in recommendations for closure and realignment. Therefore, the Air Force is in compliance with the general direction given by DOD on this criterion. However, as a result of the approach used by the Air Force, there is no documentation showing that the Air Force considered impacts from specific recommended actions on community infrastructure.

3. Impact on Base Status

There are no recommended changes to any specific base's status due to the Air Force's evaluation of criterion 7.

<u>DEFENSE AGENCIES</u> - Of the Defense Agencies impacted by BRAC-93, only the Defense Logistics Agency is being considered for major closures or realignments with potential community infrastructure impacts.

1. Data Evaluation

The Defense Logistics Agency (DLA) used an approach similar to the Army, in that they revised DOD's four Military Selection Criteria to establish four DLA Measures of Merit in order to rank their installations and determine which to recommend for closure and realignment. These four DLA Measures of Merit include consideration of quality of life, a community infrastructure factor, under Mission Suitability. DLA's use of quality of life included consideration of how the communities surrounding the installations supported DLA's mission. DLA's Detailed Analysis Report (part of Volume VI) documented that points were assigned for quality of life in the installation ranking process. Another of DLA's four Measures of Merit, Expandability, focused more on installation infrastructure (e.g., Is there space to expand?) than

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2. Consistency/Compliance

DLA's consideration of community infrastructure did not appear consistent between installations, as specific installations provided different degrees of detail on community infrastructure in responses to the questionnaires.

Since DLA documented their use of community infrastructure in their Measures of Merit (especially under Mission Suitability), they have complied with DOD's direction to consider this criterion in the installation selection process.

3. Impact on Base Status

There are no recommended changes to any specific base's status due to DLA's evaluation of Criterion 7.

RECOMMENDED CHANGE FOR BRAC-95

Specific direction should be provided to the Services on what should be evaluated pursuant to this Criterion. Specific community infrastructure factors should be given, with a description of how each one should be evaluated. The direction should include a requirement for an impact analysis from each specific recommended action. Those Services that did conduct such impact analyses have much more meaningful evaluations of community infrastructure.

Document Separator

ANALYSIS OF SPECIFIC COMPLIANCE
CRITERION 7
COMMUNITY INFRASTRUCTURE

DESCRIPTION: The purpose of this analysis is to evaluate the Department of Defense Services' consideration of community infrastructure in their recommendations of specific installations for closing and realignment. The data on community infrastructure used by the Services in their installation-specific conclusions were evaluated. The methodologies used to consider community infrastructure were evaluated for consistency within each Service. A determination was made on whether the Services complied with Department of Defense (DOD) policy guidance issued pursuant to Public Law 101-510, as amended. Based on the analysis on how the Services considered community infrastructure, recommendations were made on whether a specific installation's status pursuant to BRAC-93 could be revised.

The Services took varied approaches to evaluating this criterion. Criterion 7 is given in DOD's May 5, 1992 policy guidance as, "The ability of both the existing and potential receiving communities' infrastructure to support forces, mission and personnel." No specific guidance was provided on how the Services should evaluate this criterion.

The specific compliance analysis is broken down by Service. The following steps were taken in this analysis:

1. Installation-specific data (compiled in base questionnaires or data calls) were reviewed and compared to the Services' conclusions on community infrastructure in the Recommendations and Analyses Reports (Volumes III-VI).

2. The methodologies used by each Service were evaluated and determinations were made on whether this criterion was applied consistently within each Service, and whether it was evaluated pursuant to DOD's direction.

3. Any discrepancies pursuant to the first two steps were considered in recommending whether a specific installation's status pursuant to BRAC-93 could change.

After evaluating each Service, recommendations for improvements to the community infrastructure evaluation process for BRAC-95 are presented.

ANALYSIS

ARMY

1. Data Evaluation

The Army's process for ranking the value of specific installations involved evaluating five "Measures of Merit." The Measures of Merit were derived from DOD's four Military Value Assessment Criteria. The Measures of Merit incorporate community infrastructure factors, specifically expandability and quality of life. These community infrastructure data are included in the Army's Installation Assessments. These assessments documented community infrastructure by providing ratings from the "Places Rated Almanac", evaluating factors such as off-base housing status, public transportation availability, and health care and education opportunities. The Army's Volume III report includes a discussion of community infrastructure in the "Recommendations and Justification" section for each recommended action. This text on community infrastructure is identical for each action. The Army's canned text mentions that community infrastructure impacts have been considered, and will be addressed. Specific information on how any impacts will be addressed has not been documented. Because this Volume III discussion is all-encompassing, it is not inconsistent with the data compiled on specific bases in the Installation Assessments.

2. Consistency/Compliance

Since the Army includes the same exact text for each recommended action in its Volume III discussion of community infrastructure, the Army is clearly internally consistent in this document. The Installation Assessments consistently address community infrastructure issues in a thorough manner, but do not consistently use the same factors to gauge community infrastructure. For example, in many cases the "Places Rated Almanac" ratings are noted, in others (e.g. Fort Belvoir, Fort Leonard Wood) they are not. Similarly public transportation availability is documented in the majority of cases, but is not universally noted (e.g. not given for Fort Huachuca).

Since the Army utilized community infrastructure factors in it installation selection process, the Army is in compliance with DOD guidance for considering this criterion.

3. Impact on Base Status

There are no recommended changes to any specific base's status due to the Army's evaluation of criterion 7.

<u>NAVY</u>

1. Data Evaluation

The Navy compiled community infrastructure information via data calls from specific installations eligible for closure or realignment. Community infrastructure factors surveyed include housing availability, education, public utilities, public

transportation, health care, and recreational facilities. The data calls rated impacts from hypothetical personnel increases of 20%, 50%, and 100% on these infrastructure factors. The Navy's Volume IV report noted whether community infrastructure impacts would result from specific recommended closure or realignment actions. The only two actions noted in Volume IV as having any significant community infrastructure impacts at receiving bases are the recommended closure of NAS Cecil Field, FL, with relocation of assets to MCAS Cherry Point, NC, and the recommended realignment of missions at NSB New London, CT, to NSB Kings Bay, GA.

The Volume IV Report's conclusions about community infrastructure impacts for these two recommended receiving installations accurately reflect the data call results. The Cherry Point data call notes that a 20% increase in personnel would result in impacts to local public schools, which would require investment to expand schools. In Volume IV, the Navy documented that in FY-96 and FY-97 costs for additional school classrooms in two local communities would results in costs of $36.56M. Similarly, in the case of recommended moves to Kings Bay, the data call notes that increases in personnel will require investments to expand schools and roads. In Volume IV, total costs for these community infrastructure improvements are estimated at $46M.

The Volume IV report also notes community infrastructure impacts for the recommended closure of Naval Air Station, Meridian, MS, with relocation to Naval Air Station, Kingsville, TX. These impacts are described as increased noise, requiring adoption of noise abatement procedures. These should be considered under environmental impacts, rather than community infrastructure. In fact, the Navy includes a discussion on these noise impacts under the environmental attribute of Land Use and Airspace Implications.

The specific compliance review also included selected recommended actions for which the Navy concluded that no significant community infrastructure impacts will occur. In these cases, the Navy's Volume IV accurately reflects the information compiled in specific installation data calls.

2. Consistency/Compliance

The Navy's approach for evaluating community infrastructure impacts was consistently applied across the Service. The Navy has complied with DOD's direction to consider this criterion in its process.

3. Impact on Base Status

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<u>AIR FORCE</u>

1. Data Evaluation

The Air Force collected specific information on the current status of community infrastructure in base questionnaires. These questionnaires collected information on a wide range of community factors such as housing, transportation, and recreational facilities. The data in the questionnaires was translated into ratings (red, yellow, green) and compiled in the Air Force's Volume V report. Questionnaires for realigning and receiving bases were reviewed, and it was found that the Volume V report accurately translated the questionnaire data.

2. Consistency/Compliance

The Air Force's approach consistently evaluated the current status of community infrastructure, both across the Service as a whole, and across their various flying and operations categories.

The Air Force's Volume V report summarizes community infrastructure ratings for all installations, which demonstrates that community infrastructure was considered in recommendations for closure and realignment. Therefore, the Air Force is in compliance with the general direction given by DOD on this criterion. However, as a result of the approach used by the Air Force, there is no documentation showing that the Air Force considered impacts from specific recommended actions on community infrastructure.

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RECOMMENDED CHANGE FOR BRAC-95

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RECOMMENDED CHANGE FOR BRAC-95

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Document Separator

1995 AIR FORCE BASE QUESTIONNAIRE

Kirtland AFB - AFMC

Section VII

1. Community Infrastructure

Describe the off-base housing situation.

VII.1.A.1 **Off-base housing is affordable**

VII.1.A.2 **Units are available for families**

VII.1.A.2 **Units are available for single members.**

VII.1.A.3 **5.5 Percent of off-base housing was rated as unsuitable in the latest VHA survey**

VII.1.A.4 **Median monthly cost of off-base housing based on latest VHA survey:** $742

Describe the transportation systems.

VII.1.B.1 **The base is served by REGULARLY SCHEDULED, public transportation. The following services are available:**

Sun -Tran of Albuquerque

VII.1.B.2 **Distance to the nearest municipal airport with scheduled, commercial air traffic:** 4 miles

VII.1.B.2 **Airport name:** Albuquerque International Airport

VII.1.B.3 **Number of commercial air carriers available at the airport:** 9

VII.1.B.4 **Average round trip commuting time to work:** 50 minutes

Off-base public recreation facilities:

List ONLY THE NEAREST facility for each subcategory.

	Facility Subcategory Type	Name of Nearest Facility	Distance to:	Drive Time
VII.1.C.1	Swimming pool	Los Altos Park	1	Hrs. 05 Min.
VII.1.C.2	Movie theater	Four Hills Movies	3	Hrs. 04 Min.
VII.1.C.3	Public golf course	Puerto del Sol Golf Course	1	Hrs. 05 Min.
VII.1.C.4	Bowling lane	Leisure Bowl	1	Hrs. 05 Min.
VII.1.C.5	Boating	Cochiti Lake	60	1 Hrs. 15 Min.
VII.1.C.6	Fishing	Isleta Lake	18	Hrs. 30 Min.
VII.1.C.7	Zoo	Rio Grande Zoo	6	Hrs. 20 Min.
VII.1.C.8	Aquarium	Sea World	732	14 Hrs. 00 Min.
VII.1.C.9	Family theme park	The Beach Water Park	4	Hrs. 20 Min.
VII.1.C.10	Professional sports	Albuquerque Dule Stadium	6	Hrs. 10 Min.
VII.1.C.11	Collegiate sports	University of New Mexico	3	Hrs. 15 Min.

1995 AIR FORCE BASE QUESTIONNAIRE

Kirtland AFB - AFMC

VII.1.C.12	Camping facilities	Coronado State Park and Monuments	6		Hrs.	20	Min.
VII.1.C.13	Beaches (lake or ocean)	Cochiti Lake	60	1	Hrs.	15	Min.
VII.1.C.14	Outdoor winter sports	Sandia Peak	20		Hrs.	35	Min.

VII.1.D **Nearest Shopping facility (two major anchor stores plus smaller retail outlets):**

Winrock and Coronado Malls 10 min (2 Miles)

VII.1.E **Nearest Metropolitan center (population in excess of 100,000):**

Downtown, Albuquerque NM 30 min (6 Miles)

Local area crime rate:

VII.1.F.1 **Violent crime rate (per 100,000) in the local area: (Note: The most current annual FBI Statistics Report used as the source document. Violent crime is defined as the sum of homicide, rape, robbery, felony assault, and simple assault.)** 1196

VII.1.F.2 **Property crime rate (per 100,000) in the local area: (Note: The most current annual FBI Statistics Report used as the source document. Property crime is defined as the sum of auto theft, burglary, theft, and arson.)** 6360

2. Education

VII.2.A **The highest maximum allowed pupil to teacher classroom ratio, based on grades K - 12 and using local area ratios:** 24 to 1

VII.2.B **Local high schools offer a four-year English program.**

VII.2.B **Local high schools offer a four-year Math program.**

VII.2.B **Local high schools offer four-year Foreign Language programs.**

VII.2.C **Local high schools offer an Honors program.**

VII.2.D **45.0 percent of high school students go on to either a two- or four-year college**

VII.2.E **There are opportunities for off-base education within 25 miles of the base.**

VII.2.E.1 **Opportunities for off-base VOCATIONAL/TECHNICAL TRAINING provided by the following institutions:**

Albuquerque Technical-Vocational Institution

VII.2.E.2 **Opportunities for off-base UNDERGRADUATE COLLEGE provided by the following institutions:**

University of New Mexico & College of Santa Fe

VII.2.E.3 **Opportunities for off-base GRADUATE COLLEGE provided by the following institutions:**

University of New Mexico & College of Santa Fe

3. Spousal Employment

1995 AIR FORCE BASE QUESTIONNAIRE

Kirtland AFB - AFMC

VII.3.A 91.0 percent of spouses are able to find employment (within 3 months) in the local community.

VII.3.B 86.0 percent of spouses find employment commensurate with job skills, work experience, and education.

VII.3.C 6.6 percent unemployment in the local area (Department of Labor Statistics)

VII.3.D 5.8 percentage rate of job growth in the local area (Department of Labor Stastics)

4. Local Medical Care

VII.4.A	Current ratio of active, non-federal physicians in the community:	3.0 physicians/1000 people
VII.4.B	Current ratio of hospital beds in the community:	5.0 beds/1000 people

Habitat Preservation and the Endangered Species Act

The Federal Endangered Species Act

In 1973, Congress recognized that many species of fish, wildlife, and plants in the United States had been rendered extinct or were in danger of extinction as a consequence of economic growth and development without adequate conservation. Congress declared that these species were of aesthetic, ecological, educational, historic, recreational, and scientific value. The Federal Endangered Species Act (FESA) was therefore enacted to conserve ecosystems upon which endangered and threatened species depend, to provide a conservation program for such species, and to achieve the purposes of international treaties and conventions.

Federal projects may be stopped or redesigned if the effects upon critical habitat cannot be mitigated.

FESA has four major provisions designed to carry out the stated purposes. It:

1. establishes a procedure for the listing of endangered or threatened species;
2. requires Federal agencies to engage in a consultation process with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS), when federally authorized activities may affect listed species;
3. prohibits the "take" of listed species (including not only direct mortality of the listed species, but also "harass and harm," which has been interpreted by the USFWS to include significant modification or degradation of habitat upon which individuals or populations rely for continued viability); and
4. provides for the incidental take of threatened or endangered species.

FESA also requires the designation of "critical habitat," the specific geographic area the species occupies at the time of listing, as well as areas outside its present distribution that are essential for conserving the species. FESA protects critical habitat from destruction or adverse modification which appreciably diminishes critical habitat value for both survival and recovery of the listed species. Thus, FESA places special emphasis on critical habitat, requiring special protection and/or mitigation for adverse impacts that may potentially occur. In some cases, Federal projects may even be stopped or redesigned if the effects upon critical habitat cannot be mitigated.

The California Endangered Species Act

The California Endangered Species Act (CESA) was patterned after FESA, containing many of the same provisions. California state policy is "to conserve, protect, restore and enhance endangered and threatened species and their habitats." The listing process under CESA places species determinations with the Fish and Game Commission. State agencies are required to consult with the Department of Fish and Game (DFG) to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any listed species. CESA also contains a prohibition against the "take" of listed species. While there is no specific designation of critical habitat in CESA, state

agencies are directed to avoid adversely impacting habitat essential to the continued survival of listed species.

State and Federal Regulatory Scheme

The State and Federal regulations affecting habitat preservation and endangered species are found in a number of areas, including FESA, the National Environmental Protection Act (NEPA), Section 404 of the Federal Clean Water Act (Section 404), the Migratory Bird Treaty Act (MBTA), the California Environmental Quality Act (CEQA), CESA, the Fish and Game Code, the Natural Community Conservation Planning Act (NCCP), and the California Fish and Game Commission. Under these regulations, the United States Fish Wildlife Service (USFWS) and DFG have policies and positions which are specific to fish and wildlife habitat protection. Both agencies have broad responsibilities for protecting and managing fish and wildlife resources under their jurisdiction, with the MBTA providing overlapping responsibilities for hunting and fishing regulations in California.

Both the DFG and USFWS review and comment on projects that may impact habitat under NEPA and CEQA. While their comments are only advisory to the lead agency, they often carry considerable weight, coming as they do from the state and federal wildlife agencies. In some cases, an endangered species may be affected; if so, projects cannot be legally carried out until the DFG issues an endangered species management authorization pursuant to CESA and an incidental take is authorized under FESA.

The USFWS plays a role similar to the DFG at the federal level, providing comments for projects subject to NEPA and establishing policies. The USFWS also plays a major advisory role in implementing the Army Corps of Engineers' Section 404 permitting process. The USFWS consults regularly with the DFG on these permits to coordinate comments on wetlands issues and other wildlife concerns. In addition, through its reports under the Fish and Wildlife Coordination Act (FWCA), the USFWS advises Federal agencies on potential fish and wildlife impacts of proposed projects.

The newest tools affecting endangered species are the multi-species Habitat Conservation Plans under CESA and the NCCP program. Both processes develop broad-based programs to manage large habitat areas containing declining species so that they can be protected before listing is required under CESA or FESA. The USFWS has endorsed the State's program and is proposing a special rule under FESA allowing the take of gnatcatchers by those participating in an approved NCCP. These processes can be applied to other areas of California, potentially eliminating the need to develop mitigation strategies on a project-by-project basis. This multi-species approach, pioneered by California, represents the greatest hope in preserving the biodiversity of California and preventing unnecessary environmental "train wrecks." It is an approach that may be particularly relevant for military base reuse plans. ***The Task Force recommends that local reuse entities identify the presence of plant and animal habitats, wetlands, and historic and archeological sites early in their planning process***

and incorporate special considerations for these factors into their planning, including mitigation where necessary. Once these areas of special interest are identified, a comprehensive habitat conservation plan may be an appropriate means of addressing resource conservation on a base-wide rather than parcel-by-parcel approach.

Potential Implications for Base Reuse

Base reuse in California has potentially major implications for fish and wildlife resources, particularly endangered and threatened species. Because California has 335 endangered, threatened or rare plants and animals (see Tables 5-2 and 5-3), former military bases may be a unique opportunity to provide habitat for many of those species. There are large tracts of base lands that have seen little or no use, and have functioned as buffers or de facto wildlife reserves. Due to limited public access on these lands, they may be in better condition than other privately owned lands nearby. Wildlife on the fringe of urban areas often reside in such places.

A comprehensive habitat conservation plan may be an appropriate means of addressing resource conservation on a base-wide rather than parcel-by-parcel approach.

Table 5-2

Endangered, Threatened or Rare Plants and Candidates (11/93)

	California	*Federal*
Endangered	127	44
Threatened	19	3
Rare	68	NA
Candidate/Proposed Endangered	1	43
Candidate/Proposed Threatened	1	15

Total number of plant species listed: 219
Total number of plant species candidate/proposed: 60

Source: Department of Fish and Game, Natural Diversity Database

Table 5-3

Endangered, Threatened or Rare Animals and Candidates (11/93)

	California	*Federal*
Endangered	44	57
Threatened	29	27
Candidate/Proposed Endangered	1	9
Candidate/Proposed Threatened	1	0

Total number of animal species listed: 116
Total number of animal species candidate/proposed: 11

Source: Department of Fish and Game, Natural Diversity Database

Fort Ord in Monterey County and Mather Air Force Base in Sacramento County provide examples of wildlife habitats that support listed species. Fort

Ord's coastal dune systems are some of the last undeveloped sites in the area and Mather's rolling grasslands are dotted with some of the best remaining vernal pools in the Sacramento area. The potential to develop these base lands for residential, commercial, recreational and other purposes is great. Careful comprehensive planning for species and habitat protection as part of the base closure program could reduce the burden on private land owners to protect listed species and habitats on their lands.

Military bases are typically not accessible to non-military personnel and are therefore poorly surveyed for biological resources.

Although Fort Ord has the greatest wealth of threatened and endangered species of any closing base, Table 5-4 indicates that other bases also have significant numbers of protected species. The table lists those bases slated for closure that have federal or state listed or candidate species known to occur on or near them as of December 10, 1993. This is not necessarily a comprehensive list. Military bases are typically not accessible to nonmilitary personnel and are therefore poorly surveyed for biological resources. It is likely that these bases, and possibly others, actually contain greater numbers of rare species than are currently documented.

Table 5-4

Threatened or Endangered Species on Military Bases

Base	*Number of Species*
Fort Ord, Marina/Seaside	17
Presidio, San Francisco	13
Mare Island Naval Shipyard, Alameda	9
El Toro Marine Corps Air Station, Irvine	4
Naval Air Station, Moffett Field, Santa Clara	4
Naval Training Center, San Diego	4
George Air Force Base, Victorville	3
Long Beach Naval Station, Long Beach	2
Mather Air Force Base, Sacramento	2
Norton Air Force Base, San Bernardino	2
Naval Air Station, Alameda	1

Source: Department of Fish & Game, Natural Diversity Data Base

A complete inventory of biological resources is first necessary to identify those species currently present. Areas with the most sensitive resources, such as wetlands and endangered species, should be considered for protecting important habitat. A multi-species habitat conservation planning process could be initiated to develop plans which satisfy development needs of the region while preserving important wildlife values.

Bases closures must also deal with known and potential toxic sites that have both acute and chronic effects on wildlife resources. Toxic cleanup plans should include measures for protecting fish and wildlife resources, both during and after cleanup. Early consultation with the DFG should be encouraged to resolve significant issues early in the process.

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National Park Service (NPS)	-- Natural Resource Trustee coordination if natural resources under jurisdiction may be at risk from releases of hazardous substances -- Consultation under ARARs	-- NEPA cooperator and/or reviewer if interests and/or resources are affected by proposed action	-- May apply to acquire property through federal surplus program -- May advise and support public benefit conveyance applications
Office of Surface Mining Reclamation and Enforcement (OSM)	-- Nothing anticipated in California	-- Nothing anticipated in California	
U.S. Fish and Wildlife Service (FWS)	-- Natural Resource Trustee coordination if natural resources under jurisdiction may be at risk from releases of hazardous substances -- Consultation under ARARs	-- NEPA cooperator and/or reviewer if interests and/or resources are affected by proposed action	-- May apply to acquire property through federal surplus program
U.S. Geological Survey (USGS)	-- May offer technology and expertise to facilitate cleanup	-- NEPA reviewer if interests are affected by proposed action	

Office of Environmental Policy and Compliance 06/06/94

Comment

The Arizona Daily Star
Founded 1877

Stephen E. Auslander, Editor Michael E. Pulitzer, Publisher
James M. Kiser, Editorial Page Editor

EDITORIALS

Give cooperation a chance

A new endangered species suit filed in U.S. District Court here to protect the San Pedro River actually may render a sad disservice. It threatens one of Arizona's few encouraging landscapes where direct, face-to-face dealings between parties in conflict appears likely to ease a pressing environmental crisis.

Already in Sierra Vista, a diverse group of powerful local interests is well on its way to pulling together a genuine management regime to slow the terrible over-sucking of the river basin's water supply. Home-grown, non-bureaucratic and compelled by a shared sense of place, this conclave represents an actual instance of a divided community coming together to thrash out responsible solutions.

Yet now comes an ill-timed suit that will not aid the process of managing water consumption in the San Pedro basin and could well hurt it.

Filed in part by Robin Silver, head of the Phoenix-based Southwest Center for Biological Diversity, the new suit charges that the Army and Fort Huachuca have illegally endangered bald eagles, peregrine falcons and bats in plotting substantial growth at the fort. Essentially, the suit asks a federal court to order the post to comply with the Endangered Species Act by consulting other agencies about the effects of its actions on the species. Which sounds fine.

The problem with this is that it achieves rather little at potentially great expense. For one thing, though the fort has been imprudent in the past, it now participates fully in the valley's so-called Water Issues Group. Asking it to "consult" would accomplish little new.

Likewise, by initiating a legalistic, adversarial federal proceeding in distant courts, the Endangered Species suit could well antagonize parties who are now cooperating and substitute for voluntary, home-grown problem-solving the mandated, top-down adjudications of a remote, bureaucratic government.

To be fair, Silver deserves credit for an earlier suit he filed to protect the San Pedro, which clearly prompted the current round of local negotiations.

And yes, many times lawsuits do represent the authentic last best chance to force change, as they did in the Pacific Northwest, where they finally compelled the U.S. Forest Service to slow down the clear cutting and follow the law in the old-growth forests.

However, lawsuits and the Endangered Species Act have their limits: as at the present moment. With good faith talks on the San Pedro underway, now does not seem the time for new suits, which could divide people, postpone action and harden positions. Rather, now seems the time for talk, for trades, for the slow growth of trust and neighborliness.

And so Silver ought to hold his fire on the lawsuits, for now at least.

If cooperation works, further litigation might impair the real power of local people and local processes to foster the innovative ideas and enthusiastic cooperation on complex issues necessary to save a river.

If it fails, well, by all means, Silver can sue again and again.

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HUACHUCA AUDUBON SOCIETY

POST OFFICE BOX 63 SIERRA VISTA, ARIZONA 85636

December 13, 1994

Mr. Alan Dixon
Committee Chairman,
Base Realignment and Closure Committee
1700 N. Moore Street
Arlington, VA. 22209

Dear Mr. Dixon;

Huachuca Audubon Society of Sierra Vista, Arizona will send a delegation to Washington, D.C. on January 3rd through January 6th.

The purpose of the visit is to educate responsible officials about the serious environmental threat to the San Pedro Riparian National Conservation Area that will result from any expansion of Fort Huachuca, Arizona.

Huachuca Audubon and other environmental organizations in this area believe it would be a mistake for the Department of the Army to expand the mission of Fort Huachuca without having all the facts, particularly the environmental consequences of such action.

We would appreciate the opportunity for our representatives, Dr. William Branan, Director of National Audubon Research Ranch and Mr. Jim Horton, President of Huachuca Audubon Society, to meet with you and discuss our concerns.

We can meet at your convenience any time Tuesday, January 3, through Friday, January 6. Twenty minutes of your time should be sufficient.

Yours Truly;

signed

Jim Horton
President, Huachuca Audubon
Phone: 602-378-2460

HUACHUCA AUDUBON SOCIETY

POST OFFICE BOX 63 SIERRA VISTA, ARIZONA 85636

December 13, 1994

Mr. David Lyles
Executive Director,
Base Realignment and Closure Committee
1700 N. Moore Street
Arlington, VA. 22209

Dear Mr. Lyles;

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Yours Truly;

signed

Jim Horton
President, Huachuca Audubon
Phone: 602-378-2460

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ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue, Phoenix, Arizona 85007
Telephone (602) 542-1557
Fax (602) 542-3383

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

September 29, 1993

William P. Sullivan
Martinez & Curtis, P.C.
2712 North 7th Street
Phoenix, Arizona 85006-1003

Dear Mr. Sullivan:

This letter is the Department's response to your July 19, 1993 and August 10, 1993 letters regarding water supply adequacy for the Sierra Vista area. You expressed an opinion that the Department appeared to be inconsistent in its policy in Sierra Vista when compared to other areas of the state.

In a letter to you dated July 29, 1993, I indicated that we believe we have had a consistent policy statewide but because of the recent Arizona Supreme Court decision, we would revisit the matter as it relates to the Sierra Vista area.

The Department has reevaluated the situation regarding the legal availability of groundwater supplies in the Upper San Pedro basin. This reevaluation has led us to conclude that the cloud of uncertainty regarding the rights of groundwater pumpers in the basin has been lifted sufficiently to allow a finding that water supplies for future subdivisions are legally available.

In 1984, when the Department first expressed uncertainty about the legal availability of groundwater in the San Pedro basin, the situation was different. Pumping for agricultural purposes was continuing adjacent to the river and there were plans for large scale development in the area. Today, most of the agricultural uses have been retired and the focus of development appears to be concentrated in the Sierra Vista/Ft. Huachuca area.

Current groundwater modeling studies indicate that with continued pumping at the current rate of withdrawal for 100 years, the cone of depression in the groundwater aquifer will not directly or appreciably affect the San Pedro River. While the criteria to interpret the recent Arizona Supreme Court decision is not in place, we currently believe that groundwater pumped in the Sierra Vista/Ft. Huachuca area is not appropriable surface water.

SEP 30 1993

→ what's ability of Beale to take additional activities?

KIRTLAND AFB POINT PAPER

Mod nonatt for CO
3 years no emission violation for CO >> petition for maintenence status.

97% of emissions come from vehicles.

Air Force methods:

40% of the capacity criteria is air quality.

Based on assumption that Kirtland's closing because they can't receive ~~the~~ additional missions, i.e. LA AFB.

Reasons why air quality seems to be a non-player:

In running the a.q. scenario,

- Army estimated that Military Value would be the same for Kirtland whether or not air quality was factored in.

The LA AFB could never have been closed & moved to Kirtland because the labs do not duplicate functions.

Air quality sim on undue perjorative weight. ~~Considered air quality too perjoratively~~.

Questions for Kirtland:

What is the so-called emissions growth budget?

Didn't consider Kirtland's ability to sav.

What is it based on?

Does Albequerque air district claim that the existence of such a budget eliminates the need for a conformity analysis?

nonatt → nonint (you still need conformity)

"Treated unfairly": ~~[illegible]~~

Didn't consider Kirtland's ability to ~~[illegible]~~ enact offsets (you still need conformity)

Didn't credit Albequerque's em

ATTAINMENT 10%

GREEN = Attainment for Ozone AND Carbon Monoxide AND Particulate Matter 10

YELLOW = Maintenance OR Nonattainment at Marginal OR Moderate levels for Ozone OR Carbon Monoxide OR Particulate Matter 10

RED = Nonattainment at Serious OR Severe OR Extreme for Ozone OR Carbon Monoxide OR Particulate Matter 10

RESTRICTIONS 40%

GREEN = No Restrictions

YELLOW = Nature of special actions impacting operations with weighted score ≥ 40 for one special action, ≥ 30 for two actions, ≥ 20 for three actions, or lower score

RED = Restrictions for on/off base activities due to air quality considerations AND requirement for implementation of emission reductions. Nature of special actions impacting operations with weighted score ≥ 50 for one action, ≥ 40 for two actions, ≥ 30 for three actions

FUTURE GROWTH 50%

GREEN = Ozone AND Carbon Monoxide in Attainment

YELLOW = Ozone OR Carbon Monoxide is Maintenance OR Nonattainment at Marginal AND No Quantitative limits on Carbon Monoxide

OR

Ozone in Nonattainment at ≥ Moderate AND Total Volatile Organic Compounds ≥ 10% AND Total Nitrogen Oxides ≥ 20%

RED = Ozone OR Carbon Monoxide is in Nonattainment at Moderate OR Serious OR Severe OR Extreme OR have quantitative limits on Carbon Monoxide OR Total Volatile Organic Compounds < 10% OR Total Nitrogen Oxides < 20%

7 Sep 94

ATCH 2

When does budget come in here?

This method was seen as too simplistic — now
This method was tossed out & replaced w/ more detailed runs.

CLEAN AIR ACT IMPACTS

BASE	RESULTS	PROBLEMS
Beale #1	Can add 24 B-52H	N/A
Beale #2	Can add 24 B-52H & 8 KC-135E	N/A
Dover	Can't add 14 C-5A	NOx > budget

12/6/94

ATCH 2

CLEAN AIR ACT IMPACTS

BASE	RESULTS	PROBLEMS
Edwards #1	Can't add 8 KC-135E	NOx & VOC > budget
Edwards #2	Can't add 12 KC-135R	NOx > budget
Hill	Can't add 8 KC-135R	NOx > budget
Kirtland	Difficult to add 635 people(no aircraft)	CO > budget
Luke	Can't add aircraft	CO > budget

12/6/94

CLEAN AIR ACT IMPACTS

BASE	RESULTS	PROBLEMS
MacDill	Can't add 12 KC-135R without district aid	NOx >budget
March #1	Can add 14 C-5 and 8 KC-135E	Stationary sources future & FIP
March #2	Can't add AFSOC to #1	CO & VOC > budget

12/6/94

CLEAN AIR ACT IMPACTS

BASE	RESULTS	PROBLEMS
McChord	Can't add any aircraft	CO > budget
McGuire	Can't add any aircraft	NOx & VOC > budget (KC-10)
Travis	Can't add any aircraft	NOx & VOC > budget
Westover	Probably add 15 F-15	Civilian ops increase will disallow

12/6/94

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CLEAN AIR ACT IMPACTS

– Bases with no major air problems

- Barksdale
- Charleston
- Dyess
- Fairchild
- Little Rock

Cannon
Davis-Monthan
Ellsworth
Grand Forks
Malmstrom

CLEAN AIR ACT IMPACTS

- McConnell
- Mt Home
- New Orleans
- Robins
- Shaw
- Tyndall

Moody
Minot
Offutt
Seymour-Johnson
Tinker
Whiteman

12/6/94

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DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

09 MAR 1995

MEMORANDUM FOR RECORD

Large wing aircraft, next page?

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 15 December 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen Heflebower, AF/PE
Mr. Orr, AF/LGM
Dr. Wolff, AF/CE
Mr. Kuhn, SAF/GCN
Brig Gen Newell, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Col Kraus, SAF/AQX
Mr. Kelly, AF/DPP
Maj Niezgoda, AF/SCXX
Maj Richardson, AF/RTR

The meeting was called to order by Mr. Boatright. On December 14, 1994, the SECAF received a briefing on the work and alternatives of the Medical JCSG. It was noted that the development of these alternatives was largely premature since closure and realignment decisions in the 1995 BRAC process would affect the assumptions on which this study was based. There was also a concern that TRICARE and other consolidation plans be taken into account in the analysis, and that reductions in facilities should avoid being part of the BRAC process if possible, since the mandated actions could not be reversed without future congressional action. The SECAF approved forwarding these concerns to the Medical JCSG.

did it really limit beddown options? or just make them less convenient?

Large Aircraft options were then reviewed by the SECAF. The need for a Special Operations Wing beddown was accommodated by ensuring that each multiple closure allowed beddown room for the Special Ops force structure at one or more of the preferred western U.S. sites. The impact on options due to air quality considerations was discussed, limiting beddown options. The CSAF objected to the Minot closure option which placed bombers at Fairchild, in that it broke up tanker consolidations. Consolidating complimentary mobility assets under a single commander increases flexibility and responsiveness in supporting a wide range of mobility requirements. The wings are organized to enhance readiness, planning, and coordination while offering increased training effectiveness, reduced overhead costs, and an integrated, cohesive mobility mission mind set. As a single source of refueling assets, response time is reduced during TACC tasking of short notice, no-plan, or no-notice global air mobility missions. The location of the Fairchild tanker wing is also ideally suited for the SIOP mission because it optimizes flight time to objective areas. Beale AFB was considered a better receiver for B-52 aircraft should Minot AFB be closed. Finally, the closure of Beale AFB raised considerable concern because of the unique, specialized mission, its relatively high cost, and its considerable potential as a Special Operations Wing beddown site.

Closure of Scott AFB raised several concerns. The movement of the headquarters commands located at Scott AFB would cause considerable disruption to missions continuing to operate at high operational tempo. The mobility control functions performed by Scott AFB would be unable to accommodate this disruption. Moreover, no significant reduction of infrastructure or operational benefit would be gained.

The CSAF objected to the closure of Grand Forks, since this would break up another consolidated tanker force, with the considerations as noted above regarding movement into Fairchild. Malmstrom was noted as having superior missile capabilities, but low cost to close and a limited airfield capability and flexibility. Closure of the airfield alone was directed to be examined.

The Ellsworth closure was examined. CSAF suggested that the command-dedicated aircraft located at Robins which support the unified command headquarters located at MacDill be moved to MacDill in the event the Air Force retains this as an active airfield. A question then arose as to moving the C-130 aircraft from Dyess to Little Rock with the C-130 schoolhouse then being moved to Altus, to reduce the aircraft loading at Dyess. The loading and ops tempo of Dyess with an Ellsworth closure would put Dyess to about maximum capacity without the C-130 moves. COBRA results were examined for all reviewed moves.

At the completion of the review, the SECAF discontinued further analysis of a closure of Scott AFB because of the operational concerns previously raised. Also, because of the concerns raised about the closure of Beale AFB and since the base was a middle tier base, its closure would not continue to be analyzed at this time. The following options were to receive further analysis:

QUESTION VIII.1.D. SUPPLEMENT FOR

_____

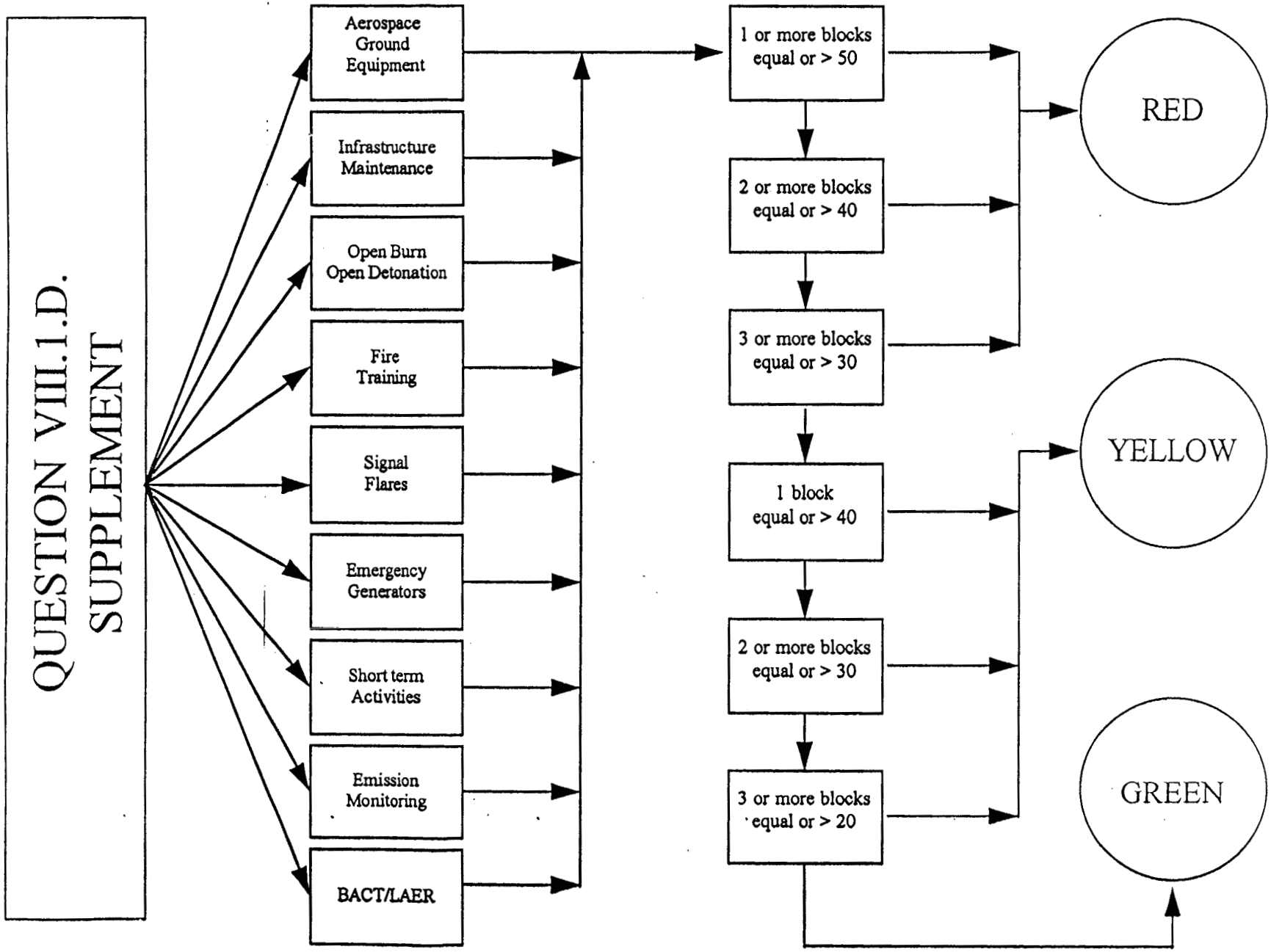
(NAME OF INSTALLATION)

		CHECK (✓) IF YES	CHECK (✓) IF NO
Block 1.	Aerospace Ground Equipment		
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt the operation of portable internal combustion engine (ICE) equipment, to include aerospace ground equipment?		
2.	Does the regulatory agency require permits for AGE or portable ICE?		
3.	Does the regulatory agency require the base to *limit* the hours of operation of the AGE *or* require emission offsets?		
4.	Does the regulatory agency require retrofit emission controls for AGE?		
Block 2.	Infrastructure Maintenance / Public Works		
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt small activities or engines used for infrastructure maintenance (i.e., sewer cleaning, wood chipping, road repair, etc.)?		
2.	Does the agency *limit* the hours of these activities?		
3.	Does the agency require periodic fuel analysis or emission testing of equipment used to support these activities?		
4.	Does the agency require emission offsets for these activities?		
Block 3.	Open Burn/Open Detonation		
1.	Does the state or local air quality regulatory agency *prohibit* open burn/open detonation (OB/OD) or training?		
2.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt OB/OD operations or training?		
3.	Does the agency *limit* the number of detonations to keep the exemption?		
4.	Does the agency require periodic emission testing?		
Block 4.	Fire Training		
1.	If the state or local air quality regulatory agency regulates or *conditionally* exempts fire training activities that produce smoke, do the agency requirements *exceed* the fire training and/or controlled burn requirements for local public fire agencies?		
2.	Does the agency *prohibit* fire training activities that produce smoke?		
Block 5.	Signal Flares		
1.	Does the state or local air quality regulatory agency prohibit the use of signal flares for search & rescue training *or* operations?		
Block 6.	Emergency Generators		
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt emergency operation of generators or engines?		
2.	Does the agency *limit* the hours of emergency operation of generators?		
3.	Does the agency require periodic fuel analysis or emission testing of emergency generators?		

	QUESTION VIII.1.D. SUPPLEMENT FOR _____ (NAME OF INSTALLATION)	CHECK (✓) IF YES	CHECK (✓) IF NO
Block 6. (cont)	Emergency Generators (*continued*)		
4.	If the emergency operation of generators exceeds the exemption threshold, does the agency require an air quality operating permit?		
a.	Does the agency require emission offsets?		
Block 7.	Short-term Activities		
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt short-term (12 months or less) activities (i.e., air shows, exercises, construction or emergency actions.)?		
2.	Does the agency *limit* the hours of operation for short-term activities ?		
3.	Does the agency require periodic fuel analysis, emission testing or require offsets?		
4.	Are any of these activities prohibited?		
Block 8.	Monitoring		
1.	Does the state or local air quality regulatory agency have continuous emissions monitoring (CEM) requirements for any sources at the base which *exceed* the Federal New Source Performance Standards (NSPS) requirements?		
Block 9.	BACT/LAER		
	Do the state or local air quality BACT/LAER emission thresholds (excluding lead) *exceed* the Federal Clean Air Act requirements?		

Block Number	Weighted Evaluation Criteria for Question VIII.1.D. Supplement	~~Weight~~ Value	Block ~~Item~~ Total
Block 1.	Aerospace Ground Equipment		Block 1
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt the operation of portable internal combustion engine (ICE) equipment, to include aerospace ground equipment?	20	
2.	Does the regulatory agency require permits for such units?	10	
3.	Does the regulatory agency require the base to modify the hours of operation of the AGE?	20	
4.	Does the regulatory agency require retrofit controls for AGE?	30	
Block 2.	Infrastructure Maintenance / Public Works		Block 2
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt small activities or engines used for infrastructure maintenance (i.e., sewer cleaning, wood chipping, road repair, etc.)?	5	
2.	Does the agency *limit* the hours of these activities?	10	
3.	Does the agency require periodic fuel analysis or emission testing of equipment used to support these activities?	10	
4.	Does the agency require emission offsets for these activities?	10	
Block 3.	Open Burn/Open Detonation		Block 3
1.	Does the state or local air quality regulatory agency prohibit open burn/open detonation (OB/OD) or training?	15	
2.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt OB/OD operations or training?	5	
3.	Does the agency *limit* the number of detonations to keep the exemption?	5	
4.	Does the agency require periodic emission testing?	5	
Block 4.	Fire Training		Block 4
1.	If the state or local air quality regulatory agency regulates or *conditionally* exempts fire training activities that produce smoke, do the agency requirements *exceed* the fire training and/or controlled burn requirements for local public fire agencies?	20	
2.	Does the agency prohibit fire training activities that produce smoke?	20	
Block 5.	Signal Flares		Block 5
1.	Does the state or local air quality regulatory agency prohibit the use of signal flares for search & rescue training or operations?	20	
Block 6.	Emergency Generators		Block 6
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt emergency operation of generators or engines?	10	
2.	Does the agency *limit* the hours of emergency operation of generators?	20	
3.	Does the agency require periodic fuel analysis or emission testing of emergency generators?	10	
4.	If the emergency operation of generators exceeds the exemption threshold, does the agency require an air quality operating permit?	5	
5.	Does the agency require emission offsets?	10	
Block 7.	Short-term Activities		Block 7
1.	Does the state or local air quality regulatory agency regulate or *conditionally* exempt short-term (12 months or less) activities (i.e., air shows, exercises, construction or emergency actions.)?	10	
2.	Does the agency *limit* the hours of operation for short-term activities ?	20	
3.	Does the agency require periodic fuel analysis, emission testing or require offsets?	10	
4.	Are any of these activities prohibited?	20	
Block 8.	Monitoring		Block 8
1.	Does the state or local air quality regulatory agency have continuous emissions monitoring (CEM) requirements for any sources at the base which *exceed* the Federal New Source Performance Standards (NSPS) requirements?	20	
Block 9.	BACT/LAER		Block 9
1.	Do the state or local air quality BACT/LAER emission thresholds (excluding lead) *exceed* the Federal Clean Air Act requirements?	20	

The supplement has 9 blocks to evaluate the restrictiveness of Air Quality Regulations to base activities.



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Thursday
Friday
Call Susan

DEIRDRE NURRE -- ACTION ITEMS LIST 3/7/94

I. Action items which have come out of service hearings:

Navy: conformity determinations. Call EPA Region 3 and Navy attorney. Did they address the issues?

Air Force: Costs of environmental restoration → Value judgments:

This is kind of a Frank & Madeline question.

Contradictions: Does speeding up cleanup increase costs, or reduce them? Two opinions on that. Various opinions as to whether environmental cleanup costs were considered in costs or closure or not! Sit back on this one; want to see what's presented.

DEIRDRE: Find out EXACTLY how bases are cleaned up under DERA, BRAC, both funds, or neither fund. Can 1 base be eligible for more than one BRAC source? Or does that depend exactly on what bases were closed under what round?

Is DERA both a compliance and a closure fund? Does it apply to closing and non-closing sites?
What are the opportunities which groups have to appeal for extra funds under DERA, or to get supplemental appropriations?
What are the typical routes that a military service pursues when it needs more cash for cleanup?

"Conformity" chart-

How will closure of AFCEE impact env. cleanup on other sites?

Length of schedule for cleanup.

→ call state folks - what are the permitting issues? How you spread one?

Army: No one asked the basic environmental issues here about fast-track producing extra costs. Maybe Ed never added my questions.

- Here's what the state says:
- " " the Army has done:
- Here's a log as it's going to take to get the permit.

1 Ft. Huachuca water supply issues
2 Ft McClellan permitting issues: → smokescreen training and chemweapons incineration?
3 "To tell you the truth, we could do this kind of training other ways" Dugway to Yuma transfer of activity. What permits are needed? Yuma acceptance of mission: What agency has jurisdiction over it?
4 Ft Monroe UXO issues: "the costs of cleanup was taken into account". What exactly does that mean? Conditional closure of McClellan depending upon completion of permit requirements: what if permits cannot be obtained prior to closure decision?
What permits do they need? Air/Stationary Source - Subtitle C Subpart X -
What do their lawyers say that they need?

Need comfortable working definition of "costs of compliance".

matrix

II. Conformity analysis: Go through series of questions with EPA Region III, Navy attorney, et. al.

III. Draft and finalize compliance memos with Criteria 7 & and Criteria 8.

IV. Questions which fell out of the hearings and which belong in the reuse arena

Restoration of UXO and its impact on reuse. Does classification of ordnance as haz waste have a real impact, when all is said and done? Is there some kind of mechanism that could clean it up faster, cheaper, better without calling it CERCLA?

Conflict between the Army housing issues and the interest which reuse groups have in receiving housing for community purposes. Is there any conflict here? do local reuse groups have a conflict with the Army in trying to get property for housing purposes? Is there a direct conflict or has it been skirted?

Ask some kind of question about the Presidio. Pesticides on golf courses. Implications of putting bases into parkland use, when DOI et al doesn't have money to pay for a park on urban properrty in San Francisco. Are there ways to move parkland or natural resource property in to a mixed use that would have some kind of profitablility associated with it? Do natural resouce uses necessarily have to be a negative?

Ask the lending institutions about decision documents.....?

Xerox the GAO paper; send to Kemmerer ✓

Return calls: Linda Rutsch ✓, Region III EPA ✓

Edwards aquifer → quantity & quality.

Kelly – you need to maintain PR with folks in San Antonio Texas certain lines.

Preeminence and Air Force In-House capability subelements. First, aviation physiology is just one of 19 common support functions included in the Brooks AFB laboratory activity, and the priority grades reflect the overall activity. Second, although aviation physiology is important, it can be accomplished by other services or by civilian sources. As a result, although the activity is very important, it is not necessarily required to be accomplished within Air Force resources.

After discussion, the BCEG approved the grades for the Priority subelement and the overall activity and installation scores, as reflected on the slides at Atch 2. The installation grades will be used for the functional value portion of the Criterion I grade.

There being no further matters to discuss, the meeting was adjourned at 1125. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS:
- Priority subelement grades for Brooks Lab
- Including UPT JCSG product in AF analysis
- Luke MOA scores
- McGuire ANG assumptions
- Squadron size and number of units
- Contract Personnel numbers for Criterion VI
- Los Angeles AFB closure assumptions
- Hanscom AFB Unique Facilities
- Kirtland AFB Facility Condition
- Rome Lab Housing grades
- Laboratory Air Quality grades

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. Future Growth grading
2. Lab Grades

DISTRIBUTION:
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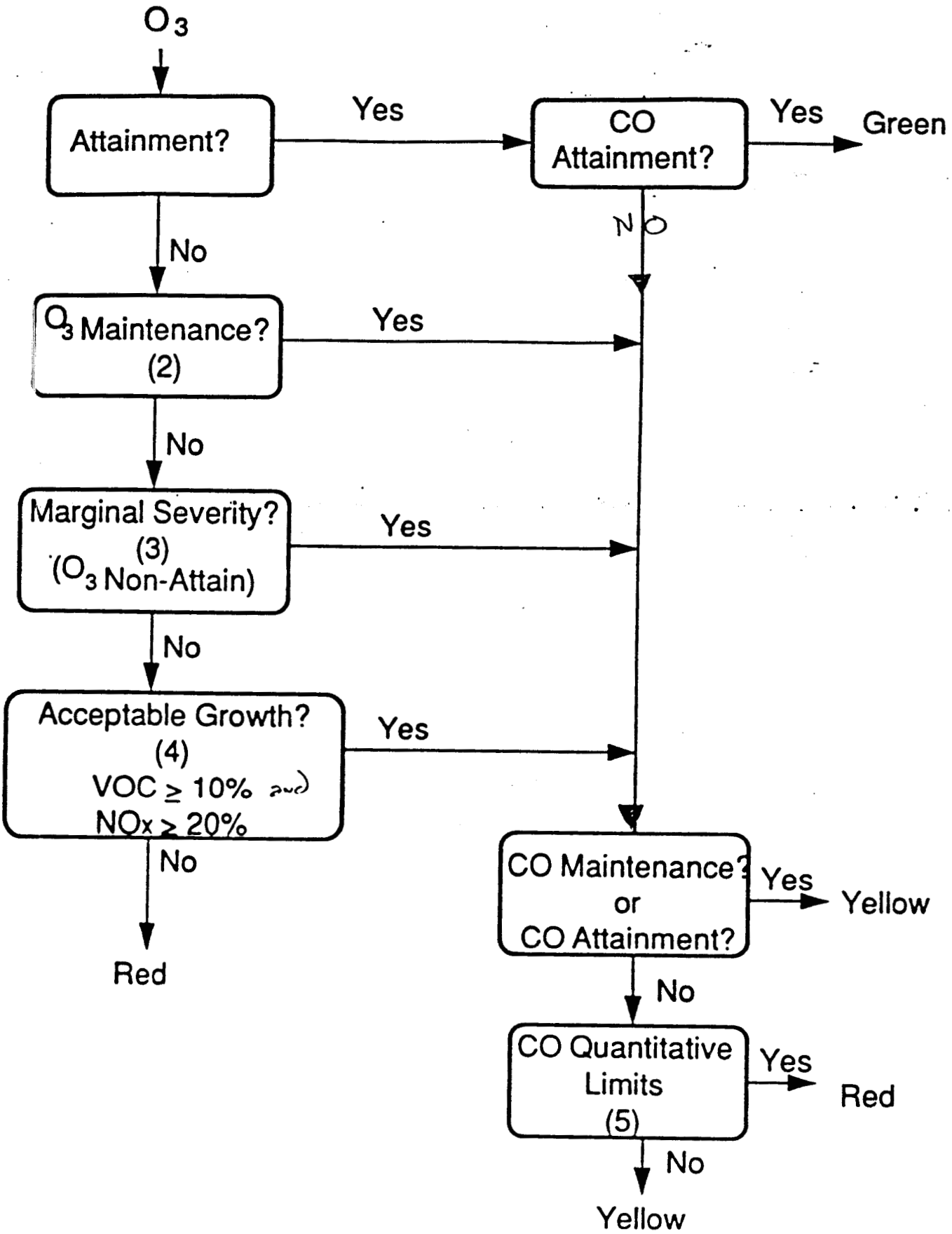
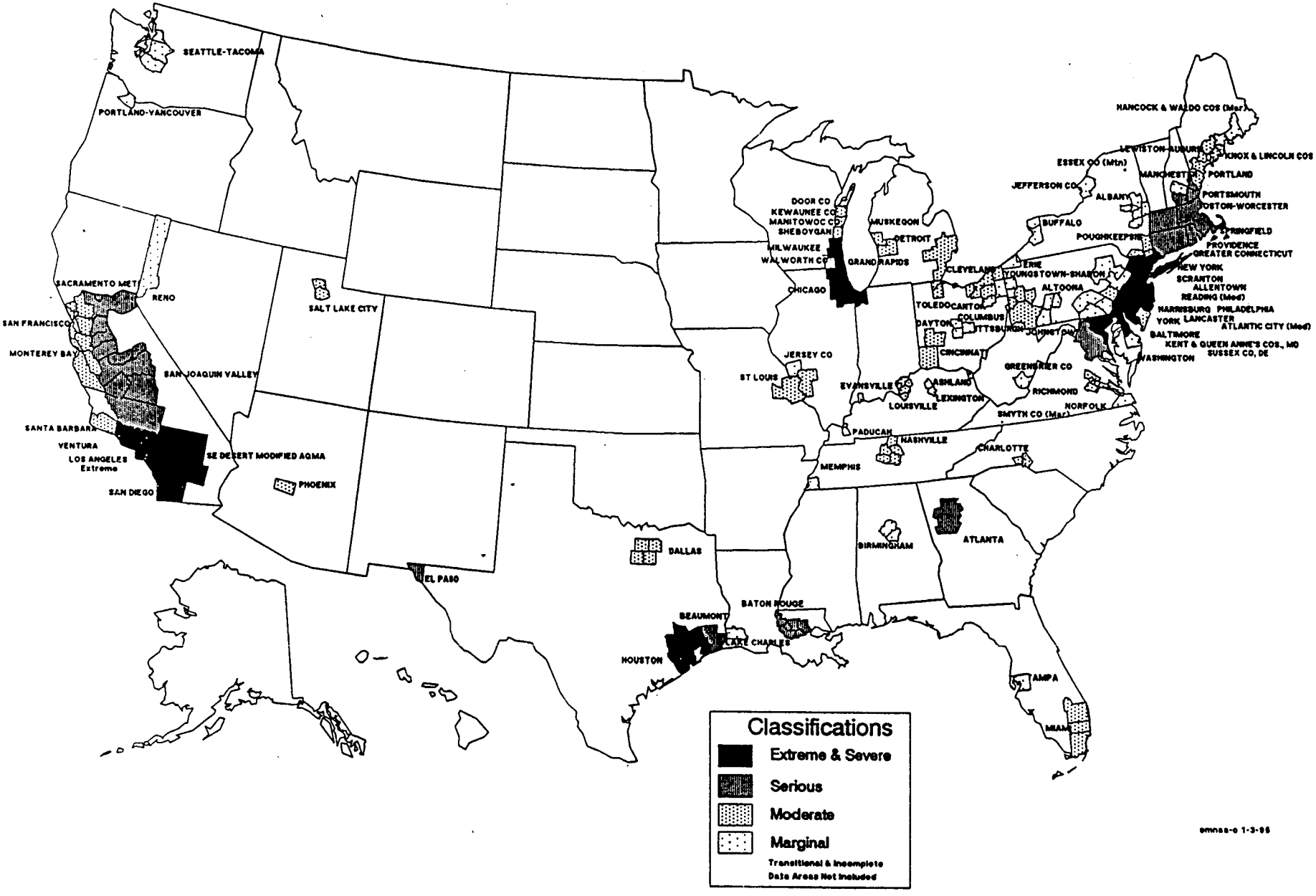
FUTURE GROWTH LOGIC TREE



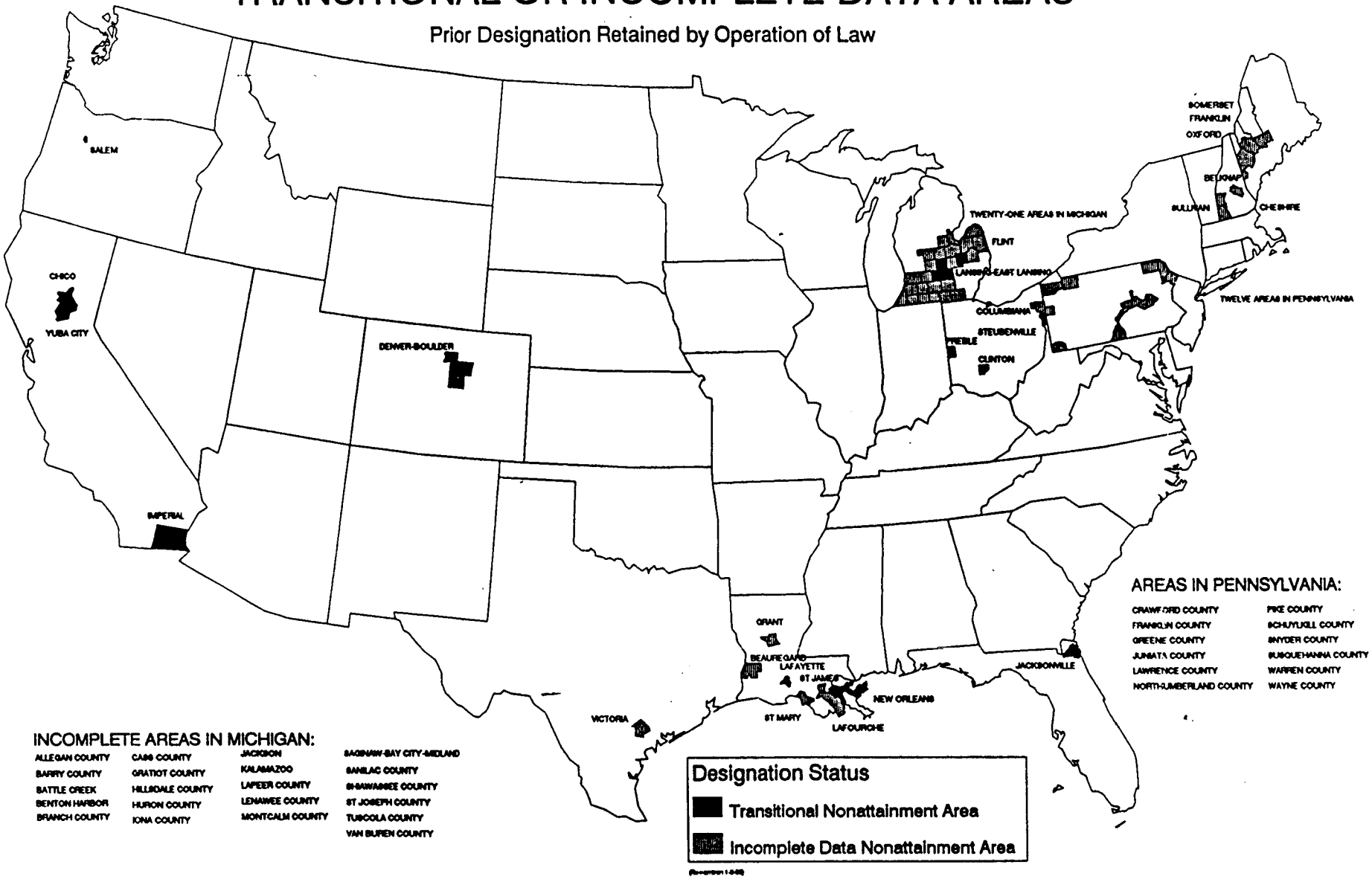
ATCH 1

Classified Ozone Nonattainment Areas



OZONE NONATTAINMENT AREAS
TRANSITIONAL OR INCOMPLETE DATA AREAS

Prior Designation Retained by Operation of Law



INCOMPLETE AREAS IN MICHIGAN:

ALLEGAN COUNTY
BARRY COUNTY
BATTLE CREEK
BENTON HARBOR
BRANCH COUNTY
CASS COUNTY
GRATIOT COUNTY
HILLSDALE COUNTY
HURON COUNTY
IONA COUNTY
JACKSON
KALAMAZOO
LAPEER COUNTY
LENAWEE COUNTY
MONTCALM COUNTY
SAGINAW-BAY CITY-MIDLAND
SANILAC COUNTY
SHIAWASSEE COUNTY
ST JOSEPH COUNTY
TUSCOLA COUNTY
VAN BUREN COUNTY

AREAS IN PENNSYLVANIA:

CRAWFORD COUNTY
FRANKLIN COUNTY
GREENE COUNTY
JUNIATA COUNTY
LAWRENCE COUNTY
NORTHUMBERLAND COUNTY
PIKE COUNTY
SCHUYLKILL COUNTY
SNYDER COUNTY
SUSQUEHANNA COUNTY
WARREN COUNTY
WAYNE COUNTY

Classifications of Ozone Nonattainment Areas[1]

Extreme (2010)[2]

Los Angeles-South Coast Air Basin, CA

Severe (2007)

Chicago-Gary-Lake County, IL-IN
Houston-Galveston-Brazoria, TX
Milwaukee-Racine, WI
New York-N New Jersey-Long Island,NY-NJ-CT
Southeast Desert Modified Air Quality Maintenance Area (AQMA), CA

Severe (2005)

Baltimore, MD
Philadelphia-Wilmington-Trenton,PA-NJ-DE-MD
San Diego, CA
Ventura County, CA

Serious (1999)

Atlanta, GA
Baton Rouge, LA
Beaumont-Port Arthur, TX
Boston-Lawrence-Worcester, MA-NH
El Paso, TX
Greater Connecticut
Portsmouth-Dover-Rochester, NH
Providence (All RI), RI
Sacramento Metro, CA
San Joaquin Valley, CA
Springfield (Western MA), MA
Washington, DC-MD-VA

Moderate (1996)

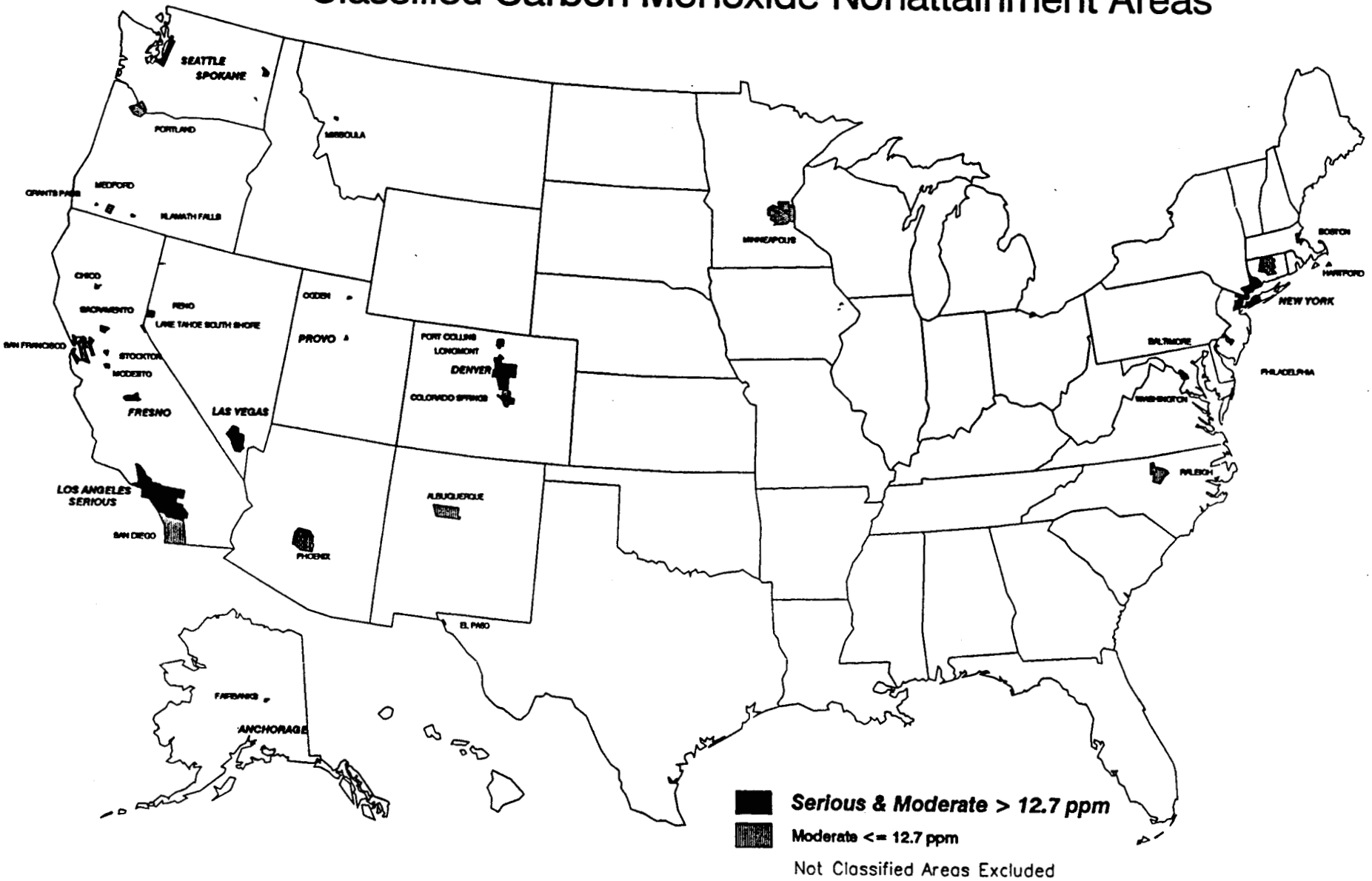
Ashland, KY (Prev Huntington, WV-Ash.KY)
Atlantic City, NJ
Charlotte-Gastonia, NC
Cincinnati-Hamilton, OH-KY
Cleveland-Akron-Loraih, OH
Dallas-Fort Worth, TX
Dayton-Springfield, OH
Detroit-Ann Arbor, MI
Grand Rapids, MI
Kewaunee County, WI
Knox & Lincoln Counties, ME
Lewiston-Auburn, ME
Louisville, KY-IN
Manitowoc County, WI
Miami-Fort Lauderdale-W. Palm Beach, FL
Monterey Bay, CA
Muskegon, MI
Nashville, TN
Phoenix, AZ
Pittsburgh-Beaver Valley, PA
Portland, ME
Poughkeepsie, NY (Previously Marginal)
Reading, PA
Richmond, VA
Salt Lake City, UT
San Francisco-Bay Area, CA
Santa Barbara-Santa Maria-Lompoc, CA
Sheboygan, WI
St Louis, MO-IL
Toledo, OH

Marginal (1993)

Albany-Schenectady-Troy, NY
Allentown-Bethlehem-Easton, PA-NJ
Altoona, PA
Birmingham, AL
Buffalo-Niagara Falls, NY
Canton, OH
Columbus, OH
Door County, WI
Erie, PA
Essex County (Whiteface Mtn), NY
Evansville, IN
Greenbrier County, WV
Hancock & Waldo Counties, ME
Harrisburg-Lebanon-Carlisle, PA
Jefferson County, NY
Jersey County, IL
Johnstown, PA
Kent & Queen Anne's Counties, MD
Lake Charles, LA
Lancaster, PA
Lexington-Fayette, KY
Manchester, NH
Memphis, TN
Norfolk-Virginia Beach-Newport News, VA
Paducah, KY
Portland-Vancouver, OR-WA
Reno, NV
Scranton-Wilkes-Barre, PA
Seattle-Tacoma, WA
Smyth County, VA (White Top Mtn)
Sussex County, DE
Tampa-St. Petersburg-Clearwater, FL
Walworth County, WI
York, PA
Youngstown-Warren-Sharon, OH-PA

[1]As of January 3, 1995 (Transitional and Incomplete Area Not Included) [2]Dates in parenthesis are when the ozone standard must be met.

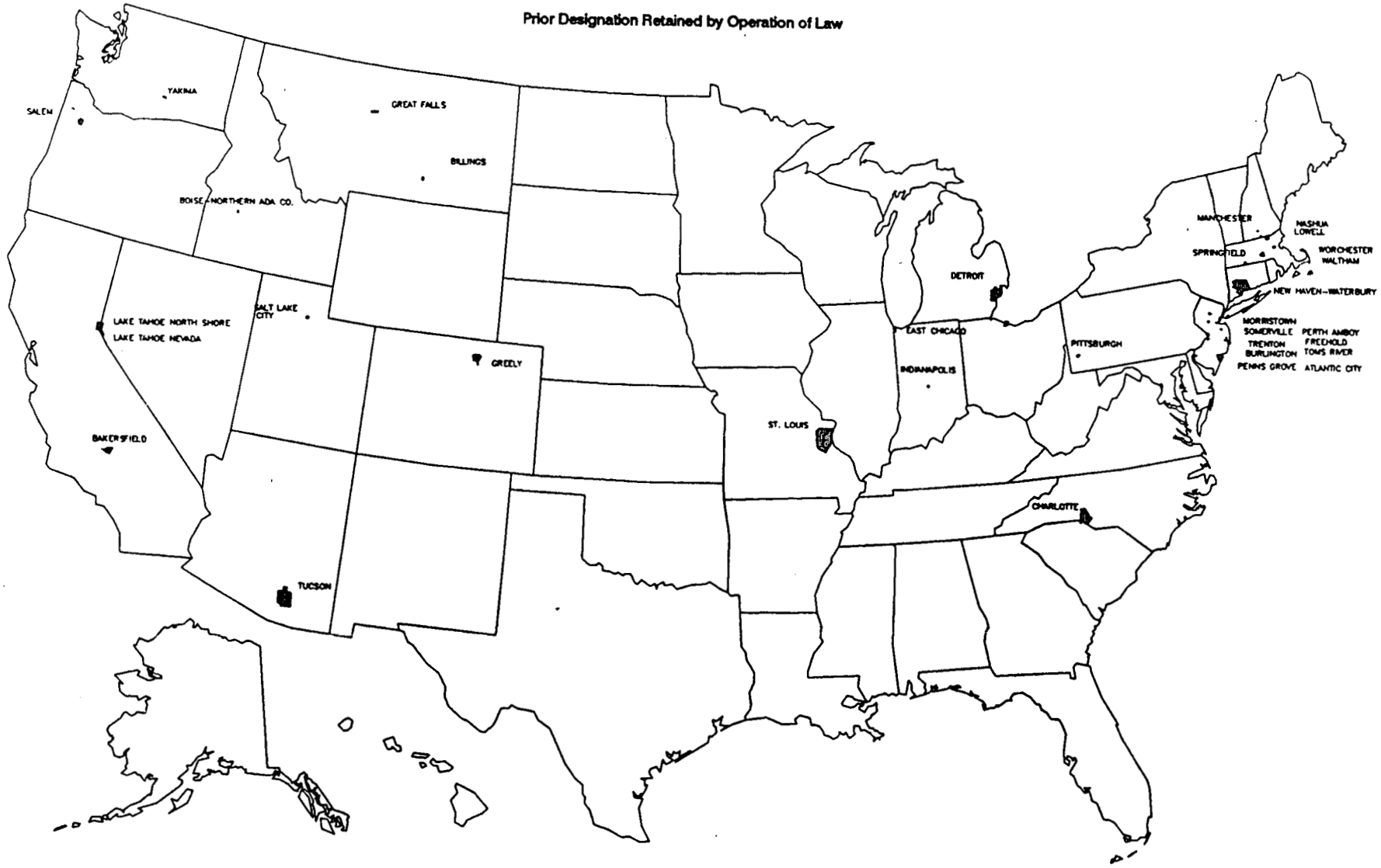
Classified Carbon Monoxide Nonattainment Areas



cmnoa-c 1-3-95

Not Classified Carbon Monoxide Nonattainment Areas

Prior Designation Retained by Operation of Law



cmno-nc 1-3-95

Classified Carbon Monoxide Nonattainment Areas

Listed by Classification

As of January 3, 1995

Serious

Los Angeles South Coast Air Basin, CA

Moderate >12.7 ppm

Anchorage, AK
Denver-Boulder, CO
Fresno, CA
Las Vegas, NV
New York-N. New Jer-Long Is, NY-NJ-CT
Provo, UT
Seattle-Tacoma, WA
Spokane, WA

Moderate <=12.7 ppm

Albuquerque, NM
Baltimore, MD
Boston, MA
Chico, CA
Colorado Springs, CO
El Paso, TX
Fairbanks, AK
Fort Collins, CO
Grants Pass, OR
Hartford-New Britain-Middletown, CT
Klamath Falls, OR
Lake Tahoe South Shore, CA
Longmont, CO
Medford, OR
Minneapolis-St. Paul, MN
Missoula, MT
Modesto, CA
Ogden, UT
Philadelphia-Camden Co, PA-NJ
Phoenix, AZ
Portland-Vancouver, OR-WA
Raleigh-Durham, NC
Reno, NV
Sacramento, CA
San Francisco-Oakland-San Jose, CA
San Diego, CA
Stockton, CA
Washington, DC-MD-VA

Not Classified Carbon Monoxide Nonattainment Areas

As of January 3, 1995

Prior Designation Retained by Operation of Law

Listed Alphabetically

Atlantic City, NJ
Bakersfield, CA
Billings, MT
Boise-Northern Ada Co, ID
Burlington, NJ
Charlotte, NC
Detroit, MI
East Chicago, IN
Freehold, NJ
Great Falls, MT
Greeley, CO
Indianapolis, IN
Lake Tahoe Nevada
Lake Tahoe North Shore, CA
Lowell, MA
Manchester, NH
Morristown, NJ
Nashua, NH
New Haven-Meriden-Waterbury, CT
Penns Grove, NJ
Perth Amboy, NJ
Pittsburgh, PA
Salem, OR
Salt Lake City, UT
Somerville, NJ
Springfield, MA
St Louis, MO
Toms River, NJ
Trenton, NJ
Tucson, AZ
Waltham, MA
Worcester, MA
Yakima, WA

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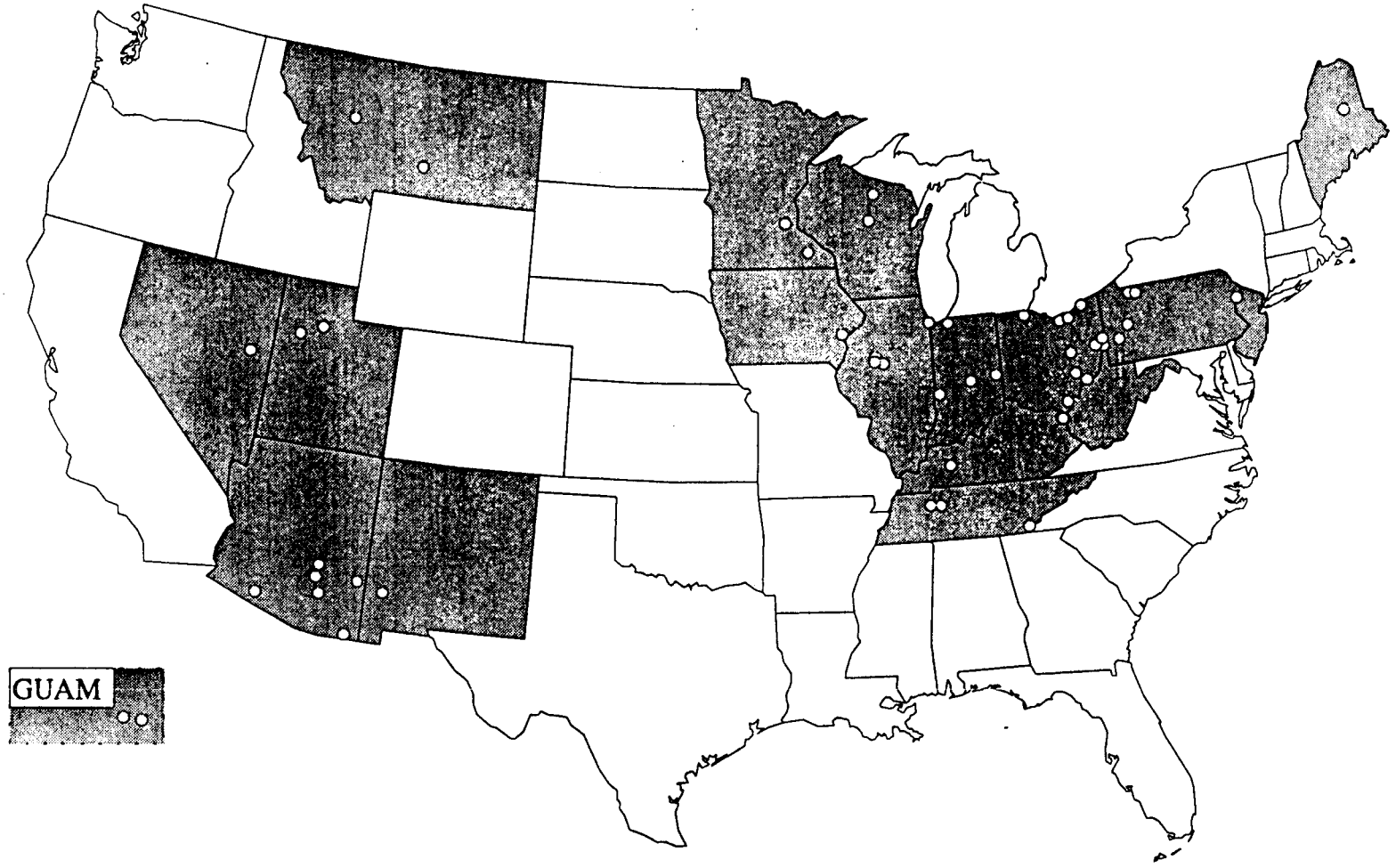
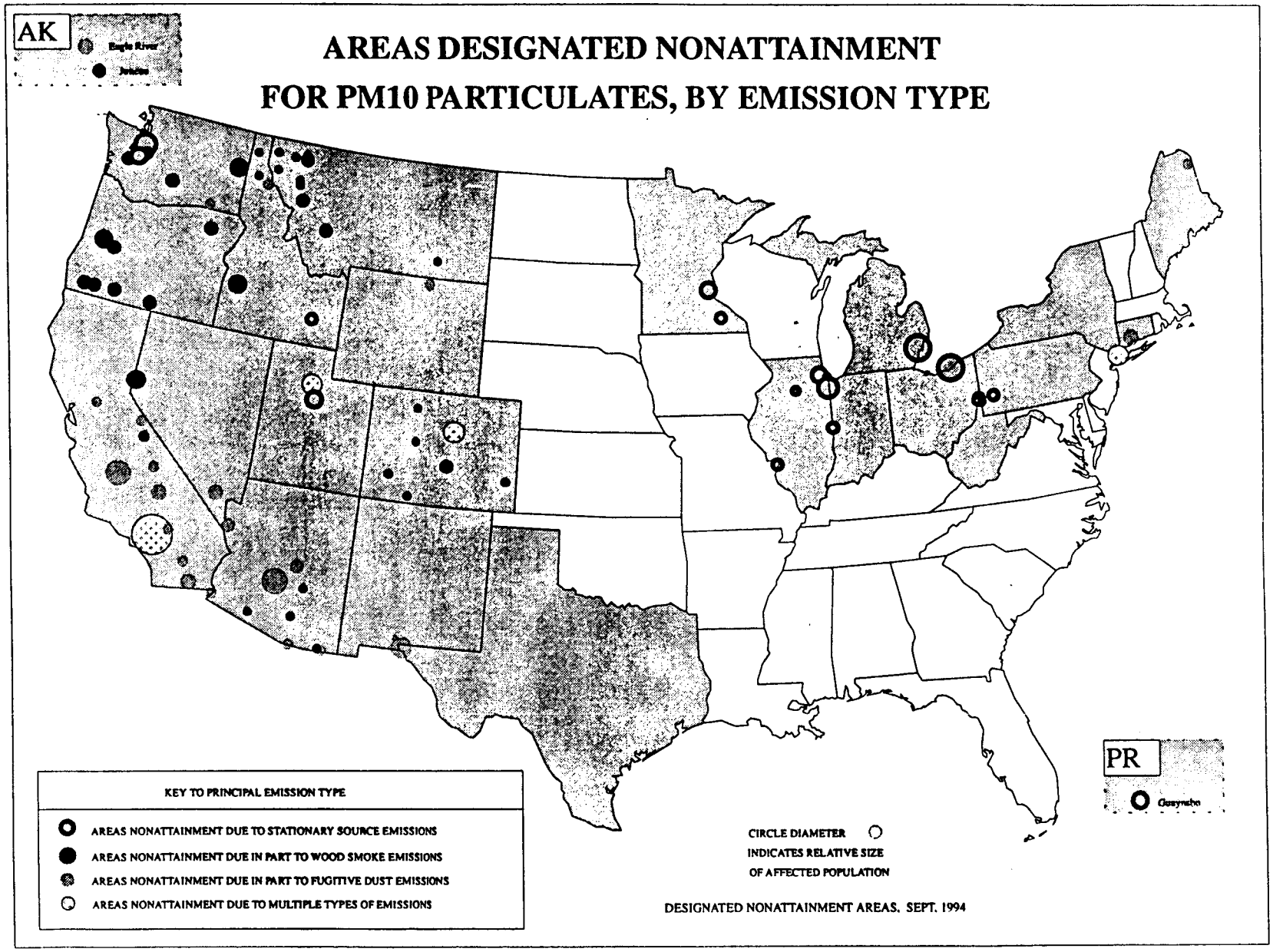
AREAS DESIGNATED NONATTAINMENT FOR SO2



○ DESIGNATED NONATTAINMENT AREAS FOR SO2. Sept. 1994

AREAS DESIGNATED NONATTAINMENT FOR PM10 PARTICULATES, BY EMISSION TYPE



DESIGNATED NONATTAINMENT AREAS, SEPT. 1994

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

04 APR 1995

MEMORANDUM FOR BASE CLOSURE COMMISSION (Mr. Frank Cirillo)

FROM: HQ USAF/RT

SUBJECT: USAF BRAC '95 Depot Information

The attached data is provided in response to your 22 March request for information pertaining to the environmental cleanup costs for the five Air Logistics Centers.

Please refer questions to my point of contact, Lt Col Louise Eckhardt, DSN 225-4578

Jay D. Blume Jr.

JAY D. BLUME, JR., Maj Gen, USAF
Special Assistant to the CSAF for
Realignment and Transition

Attachment:
Table of environmental costs

7257

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

4 APR 1995

MEMORANDUM FOR AF/RT

FROM: HQ USAF/CEP

SUBJECT: Air Logistic Center (ALC) Environmental Cleanup - AF/RT Control Number 257

The information requested by the Defense Base Closure and Realignment Commission for cleanup cost to complete and long-term pump and treat efforts at the ALCs is attached.

G. HAMMOND MYERS III
Chief, Plans and Policy Division

Attachments:
1. ALC Cost to Complete
2. AF/RT Tasker/Routing Sheet

Air Logistic Centers

Cleanup Cost To Complete

Installation	Expected Completion FY	Cost to Complete - FY 95 to Complete* ($K)	Pump & Treat Required	Timing FY	Costs ($K)
McClellan AFB, CA	2034	$ 705,446.00	Yes	2034	$ 130,661.00
Robins AFB, GA	2011	$ 71,938.00	Yes	2000	$ 1,512.00
Tinker AFB, OK	2023	$ 249,007.00	Yes	2018	$ 36,600.00
Kelly AFB, TX	2023	$ 181,949.00	Yes	2023	$ 95,000.00
Hill AFB, UT	2050	$ 235,858.00	Yes	2050	$ 110,000.00
* Includes cost of pump and treat systems					

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Environtl Cleanup driving costs of closure.

reality, almost every base that is being closed is being transferred to a local community, State, et cetera, with no revenue to the government.

Mr. COURTER. The way we handled that last time, and the Commission will have to make that judgment this time, is just to assume that we will get nothing for the sale. There was a lot of talk about how much money we would get.

Our experience the last time, after we examined the history of base closure, was that a lot of that was exaggerated. Communities—special legislation was passed so land that was used by one of the services was given to the community for the homeless, for example, or had to be dedicated for parks.

So, in our assumptions, we just assumed that there would be no profit for the sale. We applied that assumption in every case except for just one where there was a pretty obvious huge market value to the land, and we will probably do it again this time.

Senator MCCAIN. Do you think that you could more realistically assess the environmental costs this time around? Clearly the environmental costs were way out line as compared with the actual costs.

Mr. COURTER. The way I would probably do it, from having one round of experience and also a little bit more time in the private sector examining these issues, is that you take what is estimated and multiply it by a factor of something greater. I have never seen a situation where the Department of Defense or a private contractor underestimated the cost of a clean up. Normally, it is a multiple magnitude, a logarithmic magnitude of increase in costs and clean up. And so, I will look at it with a very jaundiced eye. If they say it only costs $1 million, I will assume that they are off by a lot.

Senator MCCAIN. Sometimes by as much as a factor of 100.

Mr. COURTER. That is right; I have seen it.

Senator MCCAIN. As you know, the overall assumption as to the size of the defense budget is clearly a moving target. Are you going under a set of assumptions that will be changed in the course of your deliberations, given President Clinton's new proposals, or will you just go with the present set of assumptions, and with the knowledge that there will be another round in 1995?

Mr. COURTER. It is a decision that the Commission will make as a commission, but my opinion right now would be the latter, that we are going to go by what is or what was the force structure projections under the former President. If there is a new force structure recommendation coming down in March or April or May, that I am convinced that we will end up thinking that it is best that it be left until the 1995 Commission so that process can be worked by the Pentagon before the next commission gets it.

[See questions answered for the record.]

So, my thinking is that which we do this year is not going to be enough. And based on further projections of reductions in defense spending, there will be work for the 1995 Commission as well.

Senator MCCAIN. Finally, I see that my time has expired. I understand that there is some consideration of economic impact. I think that is certainly something that is in the eye of the beholder, and would tend then to concentrate base closing in better-off States rather than poorer States. So, I would hope we can get from you

have—hopefully, eight commissioners that will be confirmed. We had seven last time, so we have one more commissioner and 30 more days. So, I would like to be able to do that, yes.

Senator GLENN. That is one that is so different because in the criteria, in effect you are establishing bases in some areas, maybe, instead of disestablishing them. So, it is a whole different thing.

You look and the criteria they put out have a whole list of preferred and mandatory different features, community characteristics, office space, the child care or the facilities for child care and so on at these places, in the same building. The health and fitness services. Utilities, maintenance, site features, training, computer center, and others may be tossed into this thing also. So, it is a whole different set of criteria than you have dealt with before.

Mr. COURTER. We are going to have to as well, Senator Glenn, have our attorney look at that issue, and I am sure that the attorney for this committee will have something to say about it.

Senator MCCAIN. Good. We look forward to working with you on that. We have some sites that are up for consideration, as do many States that are represented here on this committee.

Under the environmental restoration, taking that into account, there have been some varied approaches to that as far as taking the cost and the time for environmental restoration into account in determining the cost effectiveness of prospective base closures and realignments. How do you anticipate those costs will be used in these 1993 deliberations?

Mr. COURTER. As much as I mentioned before that I do not give a great deal of credibility to estimates with regard to environmental clean up because you often do not know the true cost until you are actually underneath the ground, cleaning up ordinance——

Senator GLENN. Where will you get your environmental data? Where will you get that from? Who do you rely on on that, because that is the key element?

Mr. COURTER. We have a good relationship and hope to continue that relationship with other government organizations besides the Department of Defense. We are going to have detailees from GAO, and from FAA. And we have EPA as well. So, we will be looking at the best information that those organizations have with regard to the cost of environmental clean up.

I would like to mention, however, that from the standpoint of the Department of Defense, they will argue that EPA mandates and the law requires that eventually, as long as the money is there, the environmental remediation occurs on facilities whether they remain open or whether closed. And so that is something the Commission will take under consideration.

Senator GLENN. That is correct, but there might be a whole different time frame as to if you are having a base that is going to stay there, and one quarter of the base could be sealed off because it has nuclear contamination or whatever. It is a whole different problem that can be dealt with over a 20-year period, maybe, that is not dangerous right now.

On the other hand, if you are dealing with something like one of the bases in our nuclear weapons—we have 17 different major bases in 11 different states. We got involved in this many years ago, and it resulted in all the GAO studies and so on. We now

know that the estimates on that are $160 billion to clean it up over a 20 to 30 year period of time.

Now, whether you take a base like one of those places that is going to be cleaned up eventually, we hope. It does not have to be done right now, and you can seal it off and leave it there. If you had to insist on, yes, to close that base we have to clean it up right now, some of those places would be almost prohibitively expenses.

So I do not know how you factor that into your deliberations. I do not envy you that task.

Mr. COURTER. It is a difficult thing. I know that Congress either has or should weigh in on this particular issue because it seems to me that if you have a situation whereas you say you have some nuclear waste in one five acre area of a 175,000 acre base, it is ridiculous for—if, in fact, it is closed, it is ridiculous to stymie the land being used for its highest and best purpose simply because one corner of it is polluted. So, we hope that Congress sees fit to allow communities to do something with parts of bases.

Senator GLENN. Just to follow up on Senator McCain's question, do you have any figures on what savings or what money has come back to the government as a result of the base closures or the prospective base closures so far?

As Senator McCain said, many of these things are used for the homeless, or States are picking up the bases or certain land areas, as well as local communities. Do we have any figures of what has been saved so far?

Mr. COURTER. Senator, in our report that we filed which was adopted by Congress 2 years ago—1½ years ago, we had some numbers. Whether they were accurate or not, I do not know. It was about two point some odd billion dollars over a 20-year period.

But I suppose, number one, it depends on how long you measure it. If it goes on 100 years, your savings are huge. And if it is 5 to 7 years there are no savings because the cost of closure eats up the advantages in closing. So, it depends on what time frame you make that measure.

My recollection from the last Commission is that the anticipated savings from these actions will result in fiscal year 1992 to 1997 net savings of $2.3 billion after a one-time cost of $4.1 billion. The savings from these actions will total $1.5 billion annually after that period of time.

Senator GLENN. You get your payback down the stream someplace.

Mr. COURTER. Yes. I might add, and that is in our executive summary that is probably in the main document, I might add that the payback period, which is something that motivated us last time and that certainly got our attention, is going to be longer and longer. The decisions become more difficult and more difficult. And whereas, I think, the 1988 thought of payback of 7 years was really far in the future, I think the 1993 and 1995 Commission is going to say, 35 years is reasonable.

Senator GLENN. Thank you, Mr. Chairman.

Chairman NUNN. Thank you, Senator Glenn.

Senator KEMPTHORNE. Mr. Chairman, thank you very much.

It is a pleasure to meet all of you.

consider the cumulative economic impact. And Assistant Defense Secretary David Berteau responded in a letter to me saying, "with respect to the issues you raised, first, we agree that cumulative economic impact should be considered."

But I just want to repeat for emphasis that in your criteria list it does not say cumulative economic impact. It says economic impact. We have not had a chance to see what the cumulative economic impact would be until such time as we have had some closings.

And as you know, Chairman Courter, and certainly Mr. Stuart knows, having been on the Commission, I did not oppose the closing of Pease Air Force Base. So I am certainly not and I do not think one could label me as one who is hypocritically protecting the pork in his State.

I want to point out that I define cumulative economic impact as being the most onerous when bases within a few miles of each other are being closed in a very short period of time. And I think I heard you loud and clearly on that.

Let me ask a question that was touched on by Senator Levin. We are talking in the current discussions, and I hope maybe each of you could respond to this, about significant defense cutbacks. They are dramatic and they are moving very rapidly downward. I understand that it is very clear that you are, based on the answer to question three which you all gave, nonpartisan and nonpolitical in this, and I have no reason to challenge anybody on any of that.

But what concerns me is whether recommendations that are made by the Secretary of Defense for closure, wherever they may be, do they substantially deviate from the criteria for closings which you have all been tasked to look at? And I think the question that I might have for each of you is: If in fact you see that they did deviate, and I am not saying they did, but I am saying if so, are you prepared to take a base off a list, put another base on a list, or whatever? Are you prepared to look very carefully at that if, in fact, you find they deviated from the task that is outlined very clearly for you in the statute?

I will just start with you, Jim, and then go on.

Mr. COURTER. I feel strongly about that. Last time we did, and this time I hope we do the same thing. That is our responsibility. It is our job.

Senator SMITH. Thank you.

Does everybody agree? Does anybody want to comment?

Mr. STUART. I think the record speaks for itself.

Senator SMITH. I think it is very important, obviously, because of the magnitude. I think things that we are looking at.

Mr. Chairman, I do not have any further questions at this time. I might reserve a couple, but at this time I will yield.

I thank you all for your service.

Chairman NUNN. Let me just ask one question, and then I will get to Senator Shelby, who has not had his turn, and to Senator Lott.

Chairman Courter, on the issue of environmental cleanup costs, are we going to reach a point where the military services themselves are reluctant to close bases that have major environmental problems because of the cost?

Mr. COURTER. I do not think we are going to reach that problem. From the standpoint of the Department of Defense, you know, they take the view that cleanup has to occur, whether it stays open or whether it is closed. And we all know the reality is they seem to tend to it faster if it is about to be closed. But they have that affirmative obligation.

From our standpoint, we look at it the same way. You know, I think it would be a perverted result if what came out of this process was a non-closure when all indications were it should be closed simply because the base was so tainted. I do not think that should be the guarantee of a base staying into perpetuity because it is so polluted.

Chairman NUNN. I agree with you completely, but I fear we may get that creeping in subjectively without being acknowledged into decisionmaking.

Let us assume, for instance, that your payback period 8 years. Let us also assume you have X Army Base and they have got a big chemical problem. If you close that base you are going to have to clean it up and the cost to clean up exceeds all the savings over that 8-year period. What do you do in that situation? Let us assume that the net over even a 10-year period was a cost to the government to close that base rather than a benefit?

Mr. COURTER. I think all factors being equal, you vote to close the base.

Chairman NUNN. Is there anything in the guidelines that precludes you from doing that on economic payback?

Mr. COURTER. One of the criteria, obviously, is your payback. And I suppose the numbers could be so preposterous that it would take, you know, 100 years or 500 years to get any money out of closure, does impact on whether you close it or not. There could be overriding issues, such as military value. And if it is worthless from the standpoint of national security, you close it anyway.

But the extreme cost of cleanup under that measure could have an impact and effect, but in the real world, and I think, Senator Nunn, you have seen this as well as I have, no one really can measure with a great deal of accuracy and therefore have a great deal of confidence in the cost of cleanup in the very beginning. Those analyses are horribly wrong.

I have never seen one that is correct. And they are always more costly than you originally anticipate.

Senator LOTT. Mr. Chairman, could I interject a question right there because it relates to exactly that you are talking about?

But cleanup is a factor you have to consider. And suppose you are considering in the category where there are five bases, and you basically have two competing to be closed. One is basically new, environmentally clean, and the other is not. And if they are equal in other categories, then you do obviously have to consider environmental cleanup costs. And I assume that you would be inclined, all other things being equal, to opt for the newer, cleaner base, as opposed to an older one that is going to have a tremendous environmental impact cleanup?

Mr. COURTER. Well, I am not going to say yes or no to that, because it was quite a cleverly worded question. [Laughter.]

We will do the best we can in those very difficult areas.

Senator LOTT. And a very generic question.

Mrs. BYRON. Will the military not have to clean it up on their own, anyhow?

Mr. COURTER. A very artfully crafted question.

Senator LOTT. What was that?

Mrs. BYRON. Will the military not have to clean it up on its own, anyhow?

Senator LOTT. There is clearly a cost factor there that has to be weighed, certainly.

Chairman NUNN. It affects the time frame of the cleanup.

Mr. COURTER. It affects the time frame, and it affects the payback. And a very modern base that has no environmental problems may be more effective from the standpoint of its value to the military as well. So it impacts on other criteria.

Chairman NUNN. I hope the Commission will make sure that we do not get into a situation as you review the services' submissions, where they are reluctant to close bases because they have environmental problems, and end up closing bases that do not have environmental problems. That would be the ultimate, as you mentioned, perversity. Also, it would just be an incentive for perhaps people on the base to make sure they have plenty of environmental problems so that it does not get closed.

I do not think it is preposterous to think that may start happening. I have heard too many people say we cannot close this base because of environmental problems, or we better weigh that. I believe that is a real potential danger.

Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman. Mr. Chairman, I welcome you again and all of the people who have helped do a lot of the work with you. I want to commend you. I thought that in 1991 the Commission did a good job.

These are difficult times, they are tough jobs. There are tough decisions that have to be made.

To some of the new members of the committee, General Johnson, Mr. McPherson, Ms. Cox, Captain Bowman and my former colleague, Beverly Byron, welcome to the Senate again.

It may have already been asked, is the criteria that was used before by the Department of Defense—I understand they will be using this again—to determine the 1993 base closure list—identical to what they used before, I personally think that worked out pretty well.

To me military value, return on investment and impact, including the environmental impact, on both existing and receiving communities are the main focus of the criteria. But military value, I think, should come first, Mr. Chairman.

Mr. COURTER. It does. It does come first.

Senator SHELBY. Do you believe that this basic criteria that was used should be used again?

Mr. COURTER. Yes.

Senator SHELBY. Mr. Chairman, do you believe that your experience, although concentrated, will help you again with the new members?

Mr. COURTER. I think that——

Senator SHELBY. Let me follow up on what Chairman Nunn was talking about, the environmental situation. If you had a base that had deep environmental problems, but you need it to be closed for lack of military value. Would it not be a mistake to close not to close such a base because it had environmental problems? Because most of those environmental problems will get worse and worse and worse.

Mr. COURTER. We went over this. And my opinion is that that should not be a deterrent to a closure, simply because it has an environmental problem.

Senator SHELBY. I think you are right. Mr. Chairman, in your 1991 testimony, you stated and I quote, "we have to have it"—that means live agent training, chemical training. "It saves lives to have our soldiers have intensive training with live agents."

I believe that the 1991 Commission agreed with you that live agent training for our troops. Do you still consider live agent chemical training critical? The Gulf war, I think, indicated that it was?

Mr. COURTER. My feeling really is not changed. I think it is important now. I thought it was important then. I might not, knowing that you would have highlighted that and read it back to me 2 years later, I perhaps would have phrased it somewhat differently.—[Laughter.]

But we are going to look at what the requirements are with respect to training and make our own independent judgment. I believed then and I believe now that the burden, frankly, is on those—if someone is going to say, it is not essential, it is not critical—the burden is on those individuals to prove to me why.

Senator SHELBY. Why?

Mr. COURTER. To prove to me why it is not important?

Senator SHELBY. That is right. Because I think——

Mr. COURTER [continuing]. For them to establish to me why and how times have changed so much.

Senator SHELBY. My time has expired.

Chairman NUNN. Thank you, Senator Shelby. That gets us to Senator Lott.

Senator LOTT. Thank you, Mr. Chairman. And thank you, members of the Commission, for what you are doing to have to do. It is a tough job. I think that our Commission last time, even though it was a gut-wrenching experience for that Commission and for all of us, I think they did a good job, too. And so I wish you all well.

It is kind of like being on the Ethics Committee in the Senate. It is a dastardly job, but somebody has got to do it. And I do think that this is a very distinguished and highly qualified panel to make these tough decisions and we are especially pleased to see our colleague from formerly in the House serving on this Commission. We know she has a lot of knowledge in this area as well as the chairman and all of you.

Having said that—and I felt like you did a good job last time and probably—I personally feel like enough of that has been done. But my question—two questions right up front—do you not feel like you are better prepared this time because we did wind up keeping you in place and keeping some staff? You do have computers and you do—you should be technically better able to do this and to do it

And I am going to make every effort I can, and I believe I can do it successfully, to keep the two apart.

Chairman NUNN. Mr. Stuart, you have been around this track once before and one Commission member actually resigned from the panel last go around because they felt there were too many areas where there would have to be recusal.

Do you have any problems or are you sensitive to problems that others may have? Any suggestions for the Commission based on your experience?

Mr. STUART. Senator Nunn, I really do not think there is anything in my modest portfolio other than Quaker Oats that would involve a potentially serious problem. And the amount the company sells to the military in terms of percentage of the total business is really very modest.

And I—if there is anything that comes up that seems to be critical, I certainly will recuse myself.

Chairman NUNN. Mr. Courter, you are the chairman, are you going to basically assume responsibility of reminding members and discussing with them areas that not only might be a conflict, but might have the appearance of conflict?

Mr. COURTER. I think that is a good idea. I will, and I am sure that counsel will assist me. And we will stay on top of it. The last thing we need is some sort of suspicion that we are not objective. It would ruin our work product, and we do not want that.

Chairman NUNN. Based on your past experience, what potential areas do you find most difficult in the conflict of interests?

Mr. COURTER. For me or for other commissioners?

Chairman NUNN. Just for the Commission, not necessarily for you, but I would not exclude that, but almost for the Commission in general?

Mr. COURTER. I think——

Chairman NUNN. What sort of things should they be alerted to and should we be alerted to?

Mr. COURTER. What we should be alerted to is landholding, homes, real estate near a base that may be impacted by a closure. Obviously, when you vote to close something, the value of that particular holding is diminished. So that is something that often people do not look at. They are always looking at what is listed on the American or New York State Exchange. But also landholding is something that people should look at.

Also, I think what your counsel should look at is, for those of us, for example, that are in the practice of law, look at not only the clients that we represent, but who pays us. Because although sometimes it is a one to one ratio, sometimes it is really not. That is another area that should be scrutinized by your counsel and White House counsel and Defense counsel.

And then there is the obvious, the obvious ones. For example, the whole environmental area. Everybody recognizes the fact that even though the Department of Defense has an affirmative obligation to clean everything, those bases that are under closure or ordered to close will be attended to first. And I think that led to Sandy Trowbridge's proffered decision to step down from the last Commission, because he was on the board of directors of Waste Management. So that is another alert.

I do not know that we have any Waste Management situations here, but there are other companies besides Waste Management in that business. So those are three areas that everybody should be alerted to.

And it is not a type of thing, for example, it seems to me that if someone stumbles upon an appearance of a conflict of interest later on when that subsequent review process takes place, there is nothing—there should be no feeling that one is less ethical because there is a potential conflict of interest as long as it is handled the right way.

And I think that is what you want. That is what the public wants. I mentioned before that during this whole process, the press and people would stop us and stop me and say, I cannot rule, I cannot vote because I am from New Jersey or I was a member of the Armed Services Committee. General Duane Cassidy was stationed at a military base.

I mentioned it in humor, but it is true. The only way to avoid any allegation of a preposterous conflict is to have a panel of Frenchmen rather than Americans, that have some familiarity with the infrastructure and our national security needs. And so everything to a degree is a balance.

I think we pulled it off last time appropriately and with your help, Senator, and your staff's help and our staff, we will do it again.

Chairman NUNN. Well, I appreciate it. I hope each of you will be sensitive, because in the final analysis, you will have to be the judges and you will know things that no one else knows. You will have to make sure that you are clear with your own conscience and that you are doing what you think is in the best interest of the United States, considering the criteria and the law.

I am absolutely certain there is not a single nominee here who wants to serve on the Commission, he or she has because some maneuvering scheme to further feather his or her own nest or to help friends and so forth. I know that for a fact. I have no doubt about that.

So really, I am talking about the perception more than I am conflict. I believe all of you want to serve on this Commission because you are willing to sacrifice your time, energy, and effort and in some cases, you may not know it now, but you may even be sacrificing old friends once you take your position on a lot of different areas.

You are doing it because you feel the need to for the country and I am deeply grateful for that. So I really do not believe any of you want to serve for any reason other than that.

The emotions of every base closure affecting communities are very broad and people will be looking, in the final analysis, as to whether they believe anybody has tainted the process. That will be done not only politically, but it will also be done legally in numerous legal challenges perhaps to the procedures.

So I just ask all of you to be alerted to it and as Chairman Courter said, do not feel reluctant to come back to the committee and inform us if you have a problem or to inform the chairman if you have a problem or to seek help from general counsel. Do not be re-

luctant to lay those out, because we believe and know that your own integrity is unquestioned or you would not be here today.

Mr. MCPHERSON. Mr. Chairman, if I could add just one more thing. As someone who has just been reading about the 1991 Commission activities and its manner of proceedings, it seems to me that this is clearly a case where the public's opportunity to see everything that happened is the best evidence that the public has that there are no special interests being served.

All these Commission hearings, everyone of them, has been, in 1991, was open to the public. They were on C-Span. It is very difficult to cut a deal on behalf of a special interest when you have got a whole line up of people and a lot of witnesses, when a lot of raw emotions are out there in the community.

You just cannot do it. So, the openness of the process would seem to me the best thing, to me, as well as the consciousness of the members would seem to be a pretty good protector of the public interest.

Chairman NUNN. That is a good point. Senator Thurmond, do you have other questions? I have just a few.

Senator THURMOND. I have a few.

Chairman NUNN. Let me ask just one more and then I will turn it over to you.

Mr. Courter, one of the amendments to the Commission's underlying authority requires the data provided to the Commission by the Department of Defense be certified as accurate and that it be provided within 24 hours to Senate and House of Representatives.

Have you worked out arrangements with the Defense Department to make sure this is met, or will you work out those arrangements?

Mr. COURTER. We broached that topic with the Secretary of Defense's counselor and special assistant, and they assured us that very soon we will be working out some methodology to achieve that.

Chairman NUNN. Do you also believe you have achieved the degree of independence from the Department of Defense in terms of staffing and so forth with the new amendments and procedures?

Mr. COURTER. Yes, we did. Those new amendments were very helpful, and the fact that we were in existence last year was helpful as well.

Chairman NUNN. Good. Senator Thurmond.

Senator THURMOND. Thank you, Mr. Chairman. Commissioner Stuart, the BRAC, B–R–A–C, rules do not permit the inclusion of environmental clean up costs in the competition of the economic budget impact and savings resulting from an installation closure and a realignment. We all know that these costs may be the most expensive part of the program.

In your opinion, if all other factors are equal, do you recommend closure of an installation with a low or a high estimation of environmental clean up costs?

Mr. STUART. Senator Thurmond, I believe we discussed that issue a little bit when you were out of the room. I think the answer is, as Chairman Courter said so effectively, even though the environmental costs might look horrendous, if the military value has

ceased to exist we should proceed to bite the bullet and close the base despite those environmental costs.

Senator THURMOND. Captain Bowman, based on your long association with Naval shipyards, especially nuclear capable yards, would you give us your views on how difficult it would be to reconstitute such a facility if the need ever arises?

Captain BOWMAN. It would be very difficult. Would you like me to elaborate on that?

Senator THURMOND. A little bit, but not too long.

Captain BOWMAN. Clearly, the capabilities of the Naval shipyards in the nuclear area were built up over a long period of time. There are special skills, special equipment. They are, in many senses, a national treasure. They cannot be built up over a short period of time.

The rigid requirements by the Naval nuclear propulsion program make it such that in order to start with no capability and to achieve capability takes years. I am not competent, without further study and consultation with others, to come up with that number. But it is a significant period of time.

Senator THURMOND. Captain Bowman, I had to step out for a while, but I was in the room when Senator Nunn inquired of all of you about the situation in the line of questioning he just went through. I would like to ask you this.

You have had an exceptional Navy career, and now a successful civilian career. I have not doubt that your contribution to the Base Closure Commission can be valuable. I had some concerns about your past and current associations with the Portsmouth Naval Shipyard, and the perception that this association might influence your decisions.

Since you and your family live in Kittery, Maine, can you assure this committee that you will make an impartial judgment should Portsmouth or any other Naval shipyard come before the Base Closure Commission for closure?

Captain BOWMAN. Yes, sir. I have already answered that several times, and the answer is the same each time.

Senator THURMOND. I was out of the room previously.

Captain BOWMAN. Yes, sir, I appreciate that. But the answer is I will make an objective, fair, impartial decision. And I feel that I can do that.

Senator THURMOND. Would you describe any current or past association with the Seacoast Shipyard Association, an organization dedicated to the welfare and development of the Portsmouth Naval Shipyard?

Captain BOWMAN. To my knowledge, I certainly have not—well, I am trying to think now. At some time in the past, I probably gave it moral support when I was the shipyard commander. Other than that I cannot think. I never attended a meeting, never talked to them. I have no affiliation with that group.

Senator THURMOND. Since your time from the Navy, have you ever made public statements in support of the Portsmouth Naval Shipyard?

Captain BOWMAN. Public statements? No, sir.

Senator THURMOND. You have not made public statements in support of the Portsmouth Naval Shipyard?

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Denver Estrey

Ex-Army secretary may join base-closing panel

S.F. resident pledges not to favor state installations

By Herbert A. Sample Sac. Bee 1/4/95
Bee Washington Bureau

WASHINGTON – Michael Stone, a former secretary of the Army and now a San Francisco resident, is a leading contender to be chosen by President Clinton for the 1995 military base-closure commission, it was learned Tuesday.

Stone, 69, was one of two recommendations recently made to Clinton by incoming Senate Majority Leader Bob Dole, R-Kan.

Although Stone lives in California, he said in an interview that if named to the panel, he would not show any favoritism to the state's military installations. He also said he was not familiar with the concerns involving the potential closure of Sacramento's McClellan Air Force Base.

Gov. Pete Wilson had lobbied Dole to nominate Stone as a California representative.

Stone's nomination may have knocked out of contention retired Air Force Lt. Gen. Robert McCoy of Fair Oaks, who is a former top-ranking officer at McClellan. It is unlikely two residents from the same state would be named to the panel.

Clinton did not officially announce his nominees Tuesday, even though there was some question as to whether the deadline for him to submit a list fell on Tuesday or today – or even if he was bound by a deadline.

A White House aide would only say the president will unveil his choices "soon."

Under the base-closure law, the majority leaders in the Senate and House each suggest two persons to the president for placement on the eight-member commission. The minority leaders get one recommendation each.

Dole's other choice was Wendi Steele, a Texan who was a congressional liaison for the 1991 base-closing commission and a former military affairs aide to U.S. Sen. Don Nickles, R-Okla.

The recommendations of incoming House Speaker Newt Gingrich, R-Ga., House Democratic leader Richard Gephardt of Missouri or Senate Democratic leader Thomas Daschle of South Dakota have not been made public.

In those cases when the law directs congressional leaders to recommend individuals to a president for nomination to a government post, presidents traditionally accept those recommendations.

Clinton, who has already selected former U.S. Sen. Alan Dixon, D-Ill., to be the panel's chairman, is entitled to one other nomination of his own choice.

Stone said in an interview that he does not yet know if Clinton will name him. But if he does make it onto the panel, Stone said he will look at the issues from a national perspective and not consider himself "California's representative."

"If the people on the commission do their job and the data that (Defense Secretary William) Perry submits in March is thorough and the hearings of the commission amplify that data and the commission keeps politics out of it ... I think we can be hopeful that California will be treated fairly," he said.

He stressed that there is still a need to eliminate unnecessary installations for a military that is undergoing significant reductions. And Californians should not expect to be exempted despite the "onerous" hits the state took in previous base-closing rounds, he said.

"There are a lot of California bases still open and it's unrealistic to believe that some California facility will not be on the services' list and therefore will be submitted by Perry" to the commission, he said.

The Pentagon's recommendations for base closures are more often than not accepted by the commission, he noted.

He said he is unfamiliar with issues of particular relevance to McClellan, which provides 14,000 jobs in the Sacramento region. But he knows of the facility from his Army secretary days when McClellan proposed shifting electronics repair work from the Sacramento Army Depot.

Stone, who was a top official of Sterling Vineyards in Napa Valley before moving to Washington in 1982, gained a lengthy exposure to military issues as secretary of the Army from 1989 to 1993.

Before that, he served as undersecretary and assistant secretary of the Army, and with the Agency for International Development.

Wilson has demanded the appointment of a Californian to the base-closing commission, saying it needs someone knowledgeable about the state's "key role" in the national defense. One Californian was on the 1993 commission, Rebecca Cox, wife of Rep. Christopher Cox, R-Newport Beach.

Republican Reps. John Doolittle of Rocklin, Wally Herger of Marysville and Richard Pombo of Tracy have been pushing Gingrich to make McCoy one of his recommendations. But it is not likely both Stone and McCoy would be named.

The confusion over the nomination deadline stemmed from a provision in the base-closure law that gave the president until Jan. 3 to nominate the commission's members – or the base-closure process is canceled.

To get around that section, Clinton quietly sent a "dummy" list of nominees to the Senate on its last day at work early last month. The Senate adjourned without taking action, effectively killing those nominations. But a White House aide said Clinton had technically met the Jan. 3 deadline and therefore could submit his real nominees at a later date.

To complicate matters, however, both the House and the Senate passed resolutions in late November changing the legal deadline from Jan. 3 to today, and it was unclear whether Clinton must meet the new deadline.

APPEARED IN MINI-CLIPS

Beware → see two GAO stories.
Bather / It seems that in response to these types of stories we need to have ready-info on successes i.e. our tracking system needs to be up to date.

a result of this "bottom up" approach, the mixed waste treatment configuration that would result from implementation of the draft STPs includes inefficiencies and duplication in the number and type of treatment alternatives proposed, the report says. To help eliminate these redundancies and provide a bridge between the draft and proposed STPs, DOE established an Options Analysis Team comprised of site and headquarters representatives to identify accommodations necessary to blend the draft STP configuration into a sensible national configuration of treatment systems to achieve efficiencies and economies over building multiple facilities at different locations to treat similar wastes.

Five treatment configurations that reflect treatment objectives important to DOE and the states were identified:

(1) Draft Site Treatment Plan Baseline Configuration-- Treatment options DOE proposed to the states in their draft STPs. This "bottom up" configuration is to be used as the baseline for developing the remaining three configuration scenarios to be analyzed.

(2) Quick Start Configuration-- A mixed waste treatment configuration that emphasizes the use of existing facilities, including DOE and commercial facilities, and mobile treatment units.

(3) Centralized Treatment Type Configuration-- A regionalized configuration based on the type of mixed waste treatment needed and waste volume. This configuration would consolidate a large number of small facilities for specific treatment types into a smaller number of facilities located in geographically strategic areas.

(4) Modified Centralized Treatment Configuration-- A revised version of the Centralized Treatment Type Configuration. This configuration consolidates facilities for specific treatment types, but minimizes cost and provides a least cost reference point.

(5) Options Analysis Team Proposed Configuration-- This mixed waste treatment configuration balances the advantages and disadvantages of each of the previous four scenarios, based on six evaluation areas:

a. Use of existing treatment facilities
b. Number of new treatment facilities
c. Volume of waste transported across state lines
d. Cost
e. Time required to complete treatment
f. Opportunities for use of alternative treatment technologies.

DOE's next step is to estimate and compare alternative configurations. A source at DOE thinks department management as well as the DOE field Policy Coordination Group will approve a configuration to be released in the proposed STPs to the states or EPA for negotiation purposes.

DOD earning far less than predicted from closing bases

ENVIRONMENTAL CONTAMINATION MAJOR OBSTACLE TO BASE REUSE, GAO SAYS

• Environmental contamination is the biggest obstacle to the productive reuse of property at many closing military bases, congressional investigators say in a recent report. The U.S. General Accounting Office finds that property sales revenue from closing bases will be far less than the Defense Department has estimated. Citing a number of reasons for delays in property transfer, GAO says contamination at many bases will impede redevelopment.

The report, dated Nov. 1, concludes that 88% of property at closing bases reviewed will be retained by DOD or transferred to other federal agencies and state or local jurisdictions at no cost. At bases to be turned over to communities, transfers in many cases are being held up by environmental contamination, according to GAO.

"All the closing bases we visited had environmental cleanup that needed to be done, which in many cases is the most difficult obstacle to getting property into productive reuse," the report says.

GAO is currently drafting a report specifically addressing environmental cleanup at closing bases (*see related story*).

Other reasons GAO cites for delays in base transfer include disagreements between federal agencies, homeless providers, American Indian tribes and local entities over reuse plans; and changing laws and regulations designed to improve the transfer process.

The transfer of property at no cost, federal reuse grants to communities, and delays in the transfer process are reasons that revenues from closing bases have fallen short of DOD estimates, according to the report. DOD originally projected that revenues from the sale of military base property would be $4.1 billion; the department in 1994 reduced the estimate to $1.2 billion. To date, only $69.4 million has been generated, and an additional $22.2 million is expected from pending sales, according to GAO. Of this total of nearly $92 million, about $19 million comes from the transfer of funds from one federal agency to another, GAO says.

Rep. Al McCandless (R-CA), who requested the GAO report, charges that the promise of big savings from closing military installations has not been met. McCandless says that communities surrounding closing bases are burdened by the

transfer to other federal agencies as opposed to the private sector.

"[I]f the Administration is to meet its stated goals in the base closure process — job creation and deficit reduction — it cannot afford to transfer 88% percent of the land at no cost to government or non-profit organizations," McCandless says.

McCandless calls for a review of the base closure process, saying the country cannot afford to have the process turn into "a federal property give-away program." McCandless asks, "Is the primary purpose to create jobs and reduce the deficit, is it to remove the burden from DOD of managing unneeded facilities as quickly as possible regardless of the costs, or is it some combination?" The congressman says the nation cannot afford "a billion dollar federal property giveaway program," and urges the 104th Congress to "vigorously investigate" the issue.

McCandless, who is retiring, is the ranking minority member of the Government Operations legislation and national security subcommittee.

In response to the GAO report, the Defense Department says revenues from land sales have been less than estimated for a number of reasons, but that overall the base closure process will yield significant savings vital to the military mission. One reason is the difficulty in selling lands that are in remote locations or "require extensive environmental cleanup prior to sale," according to a Pentagon statement. Another contributing factor is the presence of federal laws requiring that surplus land be made available to other public entities at little or no cost. Despite these circumstances, "the department expects to achieve substantial economies from base closures, savings that are critical to the long-term vitality of our armed forces," DOD says.

GAO PROBES ENVIRONMENTAL OBSTACLES TO PROPERTY TRANSFERS AT CLOSING BASES

Congressional investigators are examining environmental cleanup at closing military bases, in an attempt to identify issues that impede the transfer of base property.

The U.S. General Accounting Office (GAO) is expected to release a report on cleanup at closing military bases in December. The study comes on the heels of another GAO report that concludes that revenues from the sale of base property have fallen far short of DOD expectations. The earlier report says that at many bases environmental contamination is the greatest obstacle to turning closed installations over to productive reuse (*see related story*).

The upcoming report will address the difficulties in cleaning up bases, the impact of contamination on the Defense Department's ability to transfer property, the federal government's liabilities from environmental contamination, and DOD's long-term plans for addressing pollution problems at closing bases, according to GAO.

The report was requested by Rep. George Miller (D-CA). Miller became concerned about the impact of contamination at closing bases when a facility in his district was closed under the 1993 round of closures, according to a congressional staffer. Miller was concerned about the potential for the base to be adequately cleaned up for redevelopment, the staffer says. The congressman asked GAO to look at bases closed under the earlier two rounds to gauge the progress of cleanup efforts.

GAO is currently drafting the report, and expects to release it to requesters in late December, according to a GAO source.

HANFORD ADVISORY BOARD DEBATES RESPONSE TO PROPOSED CLEANUP CHANGES

Members of the Hanford Advisory Board (HAB) say they are struggling to come to agreement on comments the group will likely submit to the Department of Energy on proposed changes to the cleanup agreement at the department's Hanford, WA facility. Sources say that the group for the most part supports the proposed changes, but charges that DOE has failed to budget enough money for the changes.

DOE in September proposed a new set of cleanup milestones for the tri-party agreement in an effort to speed and refocus cleanup efforts along the Columbia River. The changes are expected to save DOE $100 million in cleanup costs over the next five years, DOE says.

The agreement, signed Sept. 30, allows DOE, EPA, and the Washington State Department of Ecology to refocus Hanford dollars on the cleanup of the contamination along the Columbia River, which is adjacent to the site. After almost nine months of negotiations, federal and state officials reached agreement on five major issues surrounding Hanford cleanup (see *Superfund Report*, Oct. 19, p.11).

A source with the HAB says at the next meeting of the board—Dec. 1—the environmental restoration subcommittee will submit a recommendation to the full board for consideration. The source says the first recommendation drafted by the ER subcommittee was rejected by the board, which could not agree on how to address its concern over the possible lack of funding for the new milestones. The source says that initially there were concerns over whether or not to address the scope of the new milestones without addressing the budget question.

A draft of that recommendation states that the board "agrees in principle" with the general refocusing of the

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The Washington Post
FRIDAY, JANUARY 27, 1995

DEFENSE & DIPLOMA

Number of Base Closings To Be Smaller, Perry Says

When he was defense secretary, Les Aspin said 1995 would be "the mother of all base closing" years. Since then the Pentagon and Congress, with competing pressures to cut costs and protect local economies, have geared up for the mother of all fights over how many more installations will be shut down.

Yesterday, however, Defense Secretary William J. Perry reversed course and announced that the final round of closings "will not be as large as the last one."

Speaking to the nation's mayors, who are in town for an annual conference, Perry acknowledged that, having already closed 70 major facilities, "everything we do from now on is going to be very difficult."

"It is not that we don't need to close more bases from the point of view of saving infrastructure, but simply . . . we have closed all of the bases that were relatively easy to close," he said.

Perry did not provide details, but a high-ranking Pentagon official said it has become clear in the last several months that the services "have less money to do closures" because the upfront cost of closing bases has turned out "to be greater than anticipated." Also, the services, which already have expressed concerns that further budget cuts will affect overall readiness, do not want to divert any extra funds into closing installations.

"It's been pretty clear the defense budget is tight," said the official. "Because the secretary has made a conscious decision to focus on readiness, other things have been reduced."

In the last round of closings in 1993, 130 installations, including 31 major bases, were selected for shutdown. An additional 120 facilities were closed in the previous two rounds in 1988 and 1991.

Defense officials could not give a reason for the shift in direction yesterday. Closing bases is a highly charged political issue in local communities, where they often are major employers, and the 1996 campaign season would fall just about the time many of the bases would be shutting down.

Closing bases also has turned out to be unexpectedly costly. The Pentagon will spend $15 billion to close the 70 major bases, Perry said. It had hoped to recoup most of that money by selling the property, "but that just didn't pan out," said a Pentagon spokesman. "The market isn't there."

Perry will submit his list of proposed base closings to an independent commission in March. It will send its own list to Congress, which must approve or disapprove it without changes.

— Dana Priest

G, responds to Julie on the #s (many small installations)

Document Separator

Jerome

Oakland May Be on Base List

Unconfirmed reports say Army wants it closed

2/11/95

By Rick DelVecchio
Chronicle East Bay Bureau

SF

Pentagon officials gave Deputy Defense Secretary John Deutch their recommendations for base closures yesterday, amid unconfirmed reports that the Oakland Army Base is among 40 sites the Army wants to abandon or scale back.

Deutch heard the Army's suggestions to close or realign some 40 sites, a senior official told reporters. The official declined to specify which sites were chosen by the Army, but said a report by Scripps Howard News Service that the list included bases, arsenals and training areas was "very accurate."

The recommendations are not final and are expected to change between now and when the Pentagon reveals its final recommendations by March 1.

Lee Halterman, general counsel to Representative Ron Dellums, said the secretary of the Army has not informed the Oakland congressman of any decision to recommend the Oakland base for closure. "I'm 100 percent certain that if he'd made that decision, we'd know that," Halterman said.

With 2,000 military and civilian workers, the 53-year-old Oakland base is one of the two busiest military sites remaining in the Bay Area. As a result of military recommendations approved by an independent commission in 1993, several naval sites in Alameda, San Francisco and Vallejo will close over the next three years.

Secretary of Defense William Perry has said additional closures are necessary because the military's infrastructure has been cut less than 20 percent while troop cutbacks have been higher than 30 percent over the past several years.

Judy Miller, a base closure aide to Governor Wilson, said further cuts in California are inevitable. "It's totally impossible for me to think that we'd escape without even one on the list," she said.

The state has 22 bases large enough to have a major economic impact in their communities. Eight are in Northern California. They include the Oakland Army Base, Concord Naval Weapons Station, McClellan Air Force Base in Sacramento and the Defense Language Institute in Monterey.

That Army planners would make a case to close the Oakland base has some logic, experts say, because the Army's presence has been much reduced throughout the state and because the service is shrinking from 18 active-duty divisions to 10.

The Military Traffic Management Command uses Oakland and eight leased ports on the Pacific and Gulf coasts and in Alaska, Hawaii and Asia for transporting supplies and equipment throughout an area reaching from the Mississippi River to the Horn of Africa. Officials speculating on the upcoming round of base closures said it is plausible that the Army may try to save money by combining sites.

The task for advocates of Oakland would be to argue that the base is a natural for any consolidation. It is the Army's transportation headquarters for half the world and a site so busy that nearly all of its 3.5 million square feet of space is occupied.

The lobbying has already begun. Insisting that no additional bases should close in California, Senator Dianne Feinstein has been in touch with all the military service chiefs. Wilson met with Perry Wednesday to seek assurances ~~that California will not be discriminated against by military planners because the state's tough environmental laws make it relatively expensive to operate here.~~

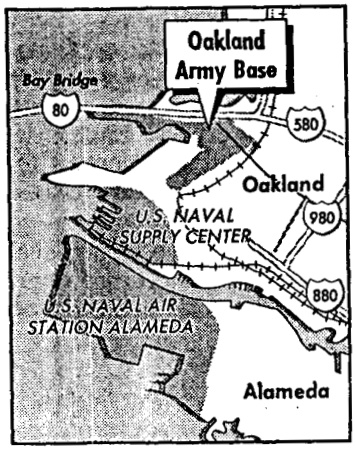
Perry will send his recommendations to the independent Base Closure and Realignment Commission, which will hold hearings before sending a closure list to President Clinton on July 1.

California will lose 22 bases because of closures ordered in 1988, 1991 and 1993, displacing 200,000 workers and leaving communities struggling to convert the sites to civilian uses. Because of toxic contamination and inadequate roads and utilities, many sites are likely to remain vacant for years.

Chronicle wire services contributed to this report.

OAKLAND ARMY BASE

- **Type of unit:** Military traffic management command (transportation); under Army jurisdiction and staffed by Army, Navy and Air Force personnel. Hub for surface transportation of all Army material and goods from the Mississippi River to the Horn of Africa.
- **Property:** 422 acres (98 percent occupied); warehouses, family housing and office space
- **Personnel:** 143 military, 2,000 civilian
- **Date of operation:** December 1941
- **Cargo tonnage:** 3.65 million tons (fiscal year 1994)



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APPEARED IN MINI CLIPS

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Oakland closure could cost area at least 2,000 jobs

Oakland Tribune 2/10/95

By Ben Charny and Yasmin Anwar
STAFF WRITERS

OAKLAND — The Oakland Army Base is reportedly one of 40 military installations nationwide that the Army wants to close, a move that could cost the area more than 2,000 jobs.

Oakland officials say the closure, which would be years away, could initially send 1,934 civilians to unemployment lines and result in the transfer or mustering out of 143 military personnel.

"We were informed we would not be on any list," said a surprised military policeman at the Oakland Army Base Thursday evening, who did not want to be identified.

The Oakland base would be one of 22 military installations that already have been ordered closed in California and the ninth in the hard-hit Bay Area.

After the initial shock, city and federal officials interviewed late Thursday said the base closure could be positive for both the city of Oakland and the Bay Area.

It would free up 422 acres of prime real estate on the Bay shoreline near the Bay Bridge. The parcel is now under the control of the Port of Oakland.

But Port of Oakland spokeswoman Lynne Joiner said the port has no plans for the site, and is taken aback by news of the Army base's possible shutdown.

"We have no designs on the Army (base)," Joiner said. "Frankly, I think we've already got our hands full.

Joiner was referring to the port's ambitious plan to lease 400 acres vacated by the shrinking Naval Supply Center for a major railroad terminal.

Coincidentally, on Tuesday the city of Oakland approved a Joint Powers Reuse Authority, a committee of federal, state and local officials who will help direct the closure of Oak Knoll.

According to reports from Washington, months of internal debate ended Thursday when Secretary of the Army Togo West briefed Deputy Secretary of Defense John Deuth about the Army recommendations.

Deuth and his boss, Secretary of Defense William Perry, will review the recommendations from all the armed services and by March 12 make their own recommendations to the Base Closure and Realignment Commission.

The Navy, Marine Corps and the Air Force have separate lists of the facilities they recommend be closed. The Army's recommendations are not final.

Jeff Young, a spokesman for one of three divisions operating at the Oakland Army Base, said late Thursday the base has not been contacted about any possible closures. It was, however, anticipating the release of a list on March 1.

"Oh God, when is it going to stop for California, especially the Bay Area?" said Oakland Councilmember Ignacio De La Fuente after learning of the reported list.

Oak Knoll Naval Hospital in Oakland and the Naval Air Station in Alameda were both slated for closure during the last round of military closures. So far, eight Bay Area bases have either shut down or are in the process of closing.

Three earlier rounds of base closings resulted in 83 bases closed and 104 realigned. Overseas, the Army is closing 656 facilities.

Aside from the Oakland Army Base, some of the more notable bases that the Army wants to close include Fort Chaffee, Ark., and the Picatinny Arsenal in New Jersey.

"We're going to jump on this issue," De La Fuente said. "Obviously we're going to work starting tomorrow on this particular issue."

Area representatives will try to fight the closure, as they did in the case of the Alameda Naval Air Station, said Sandre Swanson, district director for Rep. Ronald Dellums (D-Oakland) and a member of the East Bay Conversion and Reinvestment Commission.

The fight to save the Alameda Naval Air Station focused on its strategic location. Swanson said the commission will have to evaluate the Army base to determine what argument it should make to keep it open.

"We'll deal with it," Swanson said. "It's news we don't like to receive, but we'll deal with it."

Downsizing, instead of closing, would be best for the Oakland Army Base, Swanson said.

"Downsizing can be painful," Swanson said. "No one wants to see that happen. But it might mean an expansion of the Port, and that could be a net plus."

In the short term, however, losing 2,000 jobs will be "painful," Swanson said. "I don't think any community can handle that."

Wire services and staff writers Dan Vasquez and Kathleen Kirkwood contributed to this report.

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Document Separator

Army recommends closing 2 more bases in state

San Jose 2/10/95

■ **Close inspection:** Oakland, Fort Hunter-Liggett are on the latest hit list.

SJ Mercury News Staff and Wire Reports

WASHINGTON — If the Army has its way, the next round of base closings will see the shutdown of two California bases — the Oakland Army Base and Fort Hunter-Liggett — but Monterey County's Defense Language Institute again will be spared.

Scripps Howard News Service reported that the Army is recommending to Secretary of Defense William Perry that the military close or realign a total of 40 bases, arsenals, training areas and a medical center.

Although the Army's recommendation is an important step in the base-closing procedure, it is far from final.

"It's got to come out of the secretary's office before it's meaningful," Lee Halterman, an aide to Rep. Ron Dellums, D-Oakland, said Thursday.

Perry will review the recommendations from all the branches of the armed forces and then, by March 1, make his own single list of recommendations to the independent Base Closure and Realignment Commission.

The commission will hold hearings this summer before recommending closings to President Clinton on July 1. Congress then must approve or reject the entire list with no changes.

The Oakland Army Base, established in 1941 on 422 acres, has 143 military personnel and 1,934 civilians who manage military cargo.

Halterman called the base an important and versatile transportation hub for the military. He said it played a large role in Operation Desert Storm.

Fort Hunter-Liggett is a 165,000-acre test facility at Jolon, 20 miles southwest of King City in Monterey County. Some Pentagon officials want to keep Hunter-Liggett open because it is a test site for missile programs.

The Defense Language Institute dodged the base-closing bullet in 1993, when supporters argued successfully that it would be prohibitively costly to relocate. With 800 instructors and nearly 3,000 students, the DLI is the military's premier language institute.

Of the 40 sites on the Army's hit list, 15 are small facilities such as power stations and housing areas. The other 25 are divided between installations that will be closed and those that will be realigned, which usually means made smaller, officials said.

Some of the more notable facilities that the Army wants to close are Fort Chaffee, Ark., and Picatinny Arsenal in New Jersey.

Three earlier rounds of base closings resulted in 83 bases closed — including Monterey County's Fort Ord — and 104 realigned. Overseas, the Army is closing 656 facilities.

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Teaming up in support of McClellan

Leaders join in bipartisan bid to keep base off closure list

By Herbert A. Sample Sac. Bee
Bee Washington Bureau 2/11/95

WASHINGTON – Sacramento's civic leaders put on something of a new bipartisan political face Friday in support of McClellan Air Force Base, saying they'll need a strong group effort to keep it off a base closing list.

The Department of Defense is due to issue its list of recommended base closures on March 1, kicking off a four-month analysis by the Defense Base Closure and Realignment Commission.

That list is being closely held by Pentagon officials because of its political sensitivity. On Friday, Deputy Secretary of Defense John Deutch reportedly was briefed by the Navy on its closure proposals.

His boss, Secretary of Defense William Perry, will review recommendations from all services in the next two weeks.

Perry was one of the several Defense Department and commission officials visited on Thursday and Friday by Sacramento officials, including Mayor Joe Serna Jr., Board of Supervisors Chairman Roger Dickinson and Metropolitan Chamber of Commerce President Roger Niello.

Joined at a press briefing Friday afternoon by two Democratic and two Republican Sacramento area congressmen, the group repeatedly stressed that the 1995 effort to retain McClellan will be a bipartisan one.

The meeting "is the first time I can remember a bipartisan gathering of the delegation from the Sacramento region" on McClellan, said Rep. Vic Fazio, D-West Sacramento, in whose district McClellan is located.

"It's particularly gratifying to see the kind of bipartisan support that is demonstrated by those seated around this table," said Dickinson, who also represents McClellan.

During the 1993 base closing round, there were some behind-the-scenes tensions between Democrats Fazio and Rep. Robert Matsui of Sacramento and GOP Reps. John Doolittle of Rocklin and Richard Pombo of Tracy, although the four and their staffs privately worked together on occasion too.

"I think, frankly, there were questions over the last two years whether or not everybody participated," Matsui said. "That's why I think it was very important that we demonstrated it" this year.

Doolittle, in whose district many McClellan workers live, said the difference between 1993 and this year is that Republicans now control the Congress "and so we're needed."

"I'm encouraged that things have changed because McClellan is important to all of us, Republican and Democrat," he added.

Despite the cooperative atmosphere, the Sacramento leaders had little to report about how tight-lipped Pentagon officials regard McClellan, although that is not an unusual result of lobbying trips by local leaders from any community worried about a nearby base.

The officials visited included Sheila Widnall, secretary of the Air Force; James Klugh, assistant secretary of defense for logistics, and David Lyles, staff director for the base closure commission.

"We basically reaffirmed the fact that the same kind of case we made in 1993 to save McClellan we may have to make all over again," said Serna.

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Pentagon Plans to Seek Fewer Base Closings

■ **Military:** State is likely to be spared a devastating blow like the one it suffered in 1993, Administration officials say.

LA

By ART PINE
TIMES STAFF WRITER

1/27/95

WASHINGTON—The Pentagon will recommend fewer military bases for shutdown in 1995 than it did in the last big round of base-closings two years ago, and California is likely to escape the heavy impact that it suffered in 1993, Clinton Administration officials said Thursday.

The disclosure that this year's round of base closings will be smaller was made by Defense Secretary William J. Perry. He did not say how many bases the Pentagon ultimately will seek to close. In 1993, 35 major bases were ordered shut, seven of them in California.

Perry did not address the outlook for California but some well-placed officials suggested that the state is unlikely to be as heavily affected, both because it was hit so hard in 1993 and because its economy still has not bounced back fully.

Most of the major military installations left in California are considered crucial to the needs of the services—such as the San Diego naval station, which is to become the Navy's West Coast hub—or are huge training facilities that cannot easily be closed.

Perry's announcement came as a surprise. Until now, Pentagon officials had been hinting that the new round of base closings, which will be decided in September, would be about as large as last year's because it is the last of four rounds of shutdowns authorized by Congress.

Administration strategists had been suggesting that the Pentagon would try to close as many bases as it can this year because maintaining a large number of bases is siphoning money away from training, modernization and weapons acquisition.

Two years ago, Les Aspin, Perry's predecessor as defense secretary, predicted that this year's round would be "the mother of all base closings." And Perry himself said last December that the 1995 round would be about the size of that in 1993.

But Perry said Thursday that this year's recommended cutback will be smaller because the military services already had shut most of the facilities that clearly were not needed and because there is not enough money to close a large number of additional installations.

The Pentagon expects to spend $15 billion for environmental cleanup and other initial closing expenses to shut down about 70 installations ordered closed in 1988, 1991 and 1993. Once the bases are shut, the Pentagon will save $4 billion a year.

Perry said Thursday that "in the previous three [rounds] we closed all the bases that were relatively easy to close. Everything we do from now on is going to be difficult."

APPEARED IN MINI-CLIPS

Pentagon Chief Backs Off 1995 Base-Closing Goal

Facing Stiff Resistance From the Military

By ERIC SCHMITT
Special to The New York Times

WASHINGTON, Jan. 26 — Facing resistance from the military services, Defense Secretary William J. Perry today backtracked from a top Pentagon goal and said that the round of base closings this year — which had been expected to be the largest of four — would be smaller than anticipated.

In a speech to the United States Conference of Mayors, Mr. Perry said that fewer bases would be ordered closed than in 1993 because "in previous rounds we closed those relatively easy ones." He added, "Everything from now on will be more difficult."

Afterward, Mr. Perry said he scaled back the Pentagon's original goal in recent weeks after the military services told him it would be too difficult and too costly in the near term.

Fewer base closings would also send aftershocks through the Pentagon and the country. While many communities would be spared economic turmoil, fewer closings would also shrink the long-term savings the Pentagon had been counting on to help pay for troop salaries and new weapons after the turn of the century.

Three separate independent commissions, which met in 1988, 1991 and 1993, decided to close 70 major installations. It takes five to six years to shut a base, which in the short term is very costly. Mr. Perry said today that it would cost $15 billion to close and clean up the 70 bases, but by the end the decade the Pentagon would save more than $4 billion a year by doing so.

By Mr. Perry's own admission, the military is keeping open more bases, depots, shipyards and laboratories than the shrinking post-cold war military needs, bleeding money from training and operations accounts. He said today that the overall size of the military had dropped by 33 percent in the past eight years, but that the number of installations had shrunk by only 20 percent.

As recently as last fall, lawmakers and senior Pentagon officials anticipated even larger long-term savings from the closings this year, which some officials predicted would be larger than the three previous rounds combined.

But as the military services began to consider what they would actually close, they dropped hints to Mr. Perry that their original estimates were overly ambitious. The services are to submit their final recommendations to Mr. Perry in the next few weeks.

Mr. Perry does not make the final decision on base closings, but he has tremendous influence. By March 1 he will submit a list of recommended closings to an independent commission, which can add or subtract bases. Under the base closing legislation, Congress would have to approve or reject the panel's decision as a whole later this summer.

The Defense Secretary gave the first signs of pulling back a month ago when he told reporters that he expected the 1995 round of decisions to be "about the size" of the 1993 round, when 35 major bases were ordered closed and 27 others were reduced — and in some cases expanded.

But in recent weeks, the secretaries of the armed services have told Mr. Perry that after the three previous rounds there were no more obvious closings, and their reduced budgets could not pay for the cleanup of a large number of bases. "We're down to the tough choices, and the question of how much money we have for closing and cleanup," said one senior Defense Department official, who spoke on condition of anonymity, as did others in the agency.

Another official said, "In a time when our budget is under considerable pressure, we are constrained by the up-front costs of closing." The official said that even with fewer base closings than planned this year, the military would still reap billions of dollars in long-term savings from the reduced number of bases.

Pentagon officials said today that they might ask Congress to approve legislation authorizing additional base closings in the future, depending on the recommendations the services submit to Mr. Perry.

While the Navy accounted for most of the base closings in 1993, the Army is expected to provide the majority of the closings this year. Army officials had expressed concern about closing many of its bases in the United States before troops from deactivated units in Europe could be reassigned to posts stateside.

"We're taking very seriously the goal of tailoring the cold-war infrastructure to the post-cold war Army of 495,000 people," said a senior Army official. Its strength is now about 530,000.

Nonetheless, the Army is not expected to recommend closing either Fort Carson, Colo., or Fort Riley, Kan., two large and very expensive bases with larger training areas.

APPEARED IN MINI-CLIPS

Huff to head toxics control agency

Appointment is part of shake-up

By Stephen Green
Bee Capitol Bureau

SACTO BEE 1/27

Veteran state agency head Jesse Huff was named director of the Department of Toxics Substances Control on Thursday as part of a management shake-up by the Wilson administration.

Huff, who chairs the California Integrated Waste Mangement Board, was former Gov. George Deukmejian's finance director. He replaces William Soo Hoo, who has been named chief counsel for the Office of Environmental Health Hazard Assessment.

A spokesman also confirmed Margaret Phelps, a deputy to Soo Hoo who had charge of overseeing the cleanup of hazardous waste sites, has left state service.

The department's more than 1,100 employees have responsibility for waste sites and regulate the hazardous waste industry, working with industries to prevent pollution and responding to toxic spills on highways.

Currently, it is facing the loss of 120 positions, in part because of declining revenue from various waste hauling and disposal fees.

Critics contend, though, that there are worse problems.

"We've been warning of mismanagement and over-staffing for several years and now they are facing layoffs," said Chris Voight of the California Association of Professional Scientists union. "Morale is absolutely rock bottom."

Sierra Club lobbyist Mike Paparian said that the department "has been the source of ongoing scandal, controversy and extreme political sensitivity."

Neither Soo Hoo nor Phelps could be reached for comment.

Sean Walsh, Gov. Pete Wilson's spokesman, said the changes are "a win, win for environmentalists, scientists and the industry. Jesse Huff has shown he is a man who can move quickly and get a job done . . . He's served admirably for four years at the waste board."

The legislature gave the board responsibility for a 25 percent reduction in garbage disposal statewide by the end of this year, Walsh pointed out, and Huff has the board on track to meet that goal or come close to it.

Mark Murray of Californians Against Waste agreed that Huff has done a good job. "He has close ties to the garbage industry, but he's been honest and hasn't wavered (from attaining) waste-reduction goals," Murray said.

Soo Hoo's new job is a lateral move since he will continue to be paid $95,052 per year, Walsh said. But he will be directing an office with 128 positions rather than running a department with more than 1,100 employees.

As for Phelps' departure, Walsh said any new director should be allowed to choose his own management team.

Huff, 51, will be paid $102,800 annually. He has worked in legislative and state agency jobs since the 1970s. Jody Sparks of the watchdog Toxics Assessment Group in Davis said she sees Huff's appointment as a further politicization of the department. Both the governor's office and the state Trade and Commerce agency representing business interests have had increasing say in operations, she said.

Walsh insisted Huff was chosen because he's a "can-do manager."

Jesse Huff

Critics say the agency he will head has been mismanaged and hindered by poor morale.

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Document Separator

A few interesting cases
- UXO at Fort Ord
- Keystone group v. Rocky Group
- Transfer of property to Indian tribes
- Lemy's on EJ
- New Soil Cleanup Levels

standardization of EPA cost recovery procedures under CERCLA 107 (a). Regulation recommended by Management Review. **Contact:** Lisa Comer (703-603-9068)

Status: The proposed rule was published on August 6, 1992 (56 FR 12826) and public comment ended November 5, 1992. **EPA is reviewing a recent court decision overturning the agency's lender liability rule to determine if the cost recovery rule will also be threatened. The agency would like to promulgate the rule this fall.**

LENDER LIABILITY - EPA rule clarifies when secured lenders may be held liable for Superfund cleanup costs. **Contact:** John Fogerty (202-260-8865)

Status: EPA released a final rule April 24, 1992 and it was published in the *Federal Register* April 29. **The U.S. Court of Appeals for the D.C. Circuit invalidated the rule Feb. 4. and on June 14 denied a petition for rehearing. The U.S. did not appeal the decision to the Supreme Court. The intervenors filed an appeal Oct. 26. The U.S. filed a response on Nov. 16 and the Chemical Manufacturers Association filed a brief in opposition on Nov. 23. The Michigan AG filed a brief in opposition on Nov. 29 (*see story this issue*).**

CONFLICT OF INTEREST - Agency-wide rule would set out new requirements for contractors for reporting potential conflicts of interest. **Contact:** Calvin McWhirter (202-260-9165)

Status: Proposed rule first published in the Federal Register, April 26, 1990 and returned by OMB in June 1990. **The final rule was approved by OMB on March 29 and was published in the *Federal Register* on April 19.**

REPORTING EXEMPTIONS - The rule, first proposed May 1983 (48 FR 23552), interprets types of hazardous substance releases exempt from CERCLA section 101(10), which defines "federally permitted" releases. **Contact:** Hubert Watters (703-603-8739)

Status: Proposed rule published July 19, 1988 (53 FR 27268). Public comment closed Oct. 19, 1988. **The rule is no longer on EPA's list of regulatory activities because it is not considered a priority.**

CONTRACT LABORATORIES - The rule describes procedures for EPA to deal consistently with Contract Laboratory Program labs under investigation for alleged fraud. Contact: Chuck Sands (703 603-8857)

Status: Proposed rule was published in May 20, 1992 (40 FR 21576). **Agency staff have written a preliminary rule, which has been sent to the Assistant Administrator's office for review. The agency hopes to release the rule in about a month.**

Federal Facilities

ARMY EXCLUSION OF ORDNANCE FROM STUDY SPURS ACTION BY REGULATORS

Over the objections of state and federal regulators, the Army has excluded unexploded ordnance from a cleanup study at a major California base. Regulators prior to the release of the study had warned that they would challenge such a move. The Army's action triggers a formal dispute resolution process on whether UXO will be handled as a Superfund regulated waste at the facility. The outcome of the dispute could set a precedent for how unexploded ordnance will be regulated at all military sites.

Army officials Dec. 5 submitted their draft final remedial investigation/feasibility study (RI/FS) for Fort Ord Army base, a closed facility, excluding ordnance from the report. EPA and the state Department of Toxic Substances Control have repeatedly warned that the exclusion would likely trigger the formal dispute resolution mechanism under the Federal Facilities Agreement (FFA) for the base. In response to the Dec. 5 decision a state official says, "We will most likely initiate the dispute mechanism at this time." An EPA official echoes the state's position.

Regulators are awaiting further documents which the Army says are forthcoming. The documents are expected to address UXO, but the issue is that the Army is dealing with UXO outside of the Superfund process, according to a state source. The facility is on the national priorities list. EPA and the state are initiating the process spelled out under the FFA, which calls for a 30-day period in which project managers and supervisors attempt to informally resolve the dispute. Since the holidays are approaching, that time-frame may be lengthened, according to the EPA official for Fort Ord. However, the official notes that the agency must file a formal complaint at the end of that time period if the matter is not resolved, or the draft final RI/FS will become final.

The EPA official says that on the same day the RI/FS was published, the Army sent the agency separate correspondence indicating that additional information would be forthcoming. The official says the additional information will be reviewed before making any final decision, but that "ultimately the question is over [who has final authority]," indicating that EPA may not be willing to compromise if the Army maintains its decision to exclude UXO from the Superfund process.

The dispute stems from the Army's interpretation of its authority under the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA) that it has sole responsibility for determining how unexploded ordnance will be addressed at its facilities. The state and EPA have adamantly opposed this view.

In October, the Army submitted a draft RI/FS which failed to address the UXO present at the base. EPA and state regulators submitted comments challenging the Army's exclusion, and warned that a formal dispute resolution would be invoked if the Army did not respond satisfactorily. If the parties do not resolve their differences in informal discussions, the matter gets elevated to increasingly higher levels of management. If the matter is still not resolved after that point, it will be referred to the EPA administrator to make a final determination.

While federal policy group holds off on options paper

STAKEHOLDER GROUP LIKELY TO ADDRESS FURTHER PRIORITY-SETTING

"Keystone" Comm Here

Members of a federal facilities stakeholder committee that in 1993 offered recommendations addressing federal government cleanup issues are planning to reexamine and possibly expand on a priority-setting approach the committee proposed to federal agencies for prioritizing cleanup activities when budget cuts occur. A workgroup within the Federal Facilities Environmental Restoration Dialogue Committee (FFERDC) recently decided to revise an interim report that outlines the priority-setting approach and addresses other federal facility cleanup issues. The entire committee is expected to hold a meeting in January.

At the same time, a separate group of federal agency representatives has readjusted its schedule for releasing an options paper that is aimed at improving federal agency cleanups and cleanup management, including the offering of priority-setting options, according to an administration source. This source says the White House-led Federal Facilities Policy Group—which involves a number of federal agencies with a stake in cleanup and is co-chaired by OMB Director Alice Rivlin and White House Office of Environmental Policy Director Katie McGinty—will release an options paper by the beginning of next year. The paper is currently under review by Rivlin and McGinty, and following that examination, will be reviewed by the policy group members, according to the administration source. This source says development of the paper is taking longer than had been expected. The policy group's goals include setting priorities for cleaning up federal facilities and improving the cleanup budget.

Lenny Siegel is a FFERDC member who is concerned that the White House group is not representative

Policy group representatives briefed members of the FFERDC at a recent November meeting of the FFERDC priority-setting workgroup. According to one FFERDC member, the representatives "didn't tell us much," adding that if there is a clear direction as to where the federal policy group is going on priority setting, it was not conveyed in the briefing. Another FFERDC member says that he believes the policy group has not made much progress. According to one administration source, the options paper will include options on priority setting, improving the budget allocation system, and the paper will discuss increasing efficiency and productivity. Another administration source says the paper started out as being more than 100 pages and is in the process of being distilled. He says the policy group has attempted to assess the performance data of federal agencies' cleanup programs, and has also examined whether priority setting should be included in the report.

The funding and priority-setting workgroup of the FFERDC met Nov. 17-18, while the public participation workgroup met Nov. 21-22. The dialogue committee was originally convened by the Keystone Center and includes representatives from federal agencies involved in cleanups, EPA, tribal and state governments and environmental, community and labor organizations.

The priority-setting workgroup of the FFERDC at the meeting decided to revise its interim report released in April 1993. However, the entire FFERDC has not yet met to approve that decision. According to FFERDC sources, the workgroup in revising the report is interested in addressing the role of local governments and environmental justice issues. Either a revised interim report or a final report would likely be ready by the end of 1995, another FFERDC member says. Also, the FFERDC expects to receive more information from the interior and agriculture departments on their contaminated site investigations, a workgroup source says.

The priority-setting approach the interim report has set out will likely be considered during the report's reexamination and given some fine-tuning, the source says. This source says that he believes there needs to be a greater amount of detail on how transfers of money between sites should be done. The dialogue committee's interim report recommends a "fair share" approach to distributing congressional budget cuts across the board of a federal agency's cleanup program if such cuts occur. The recommendations also allow for funds to be shifted between facilities if there are some urgent needs at certain facilities, and the affected stakeholders have been consulted, according to the source. In addition, if shifting funds away from a facility would result in an agency's failure to meet certain legal requirements, then the shift is not recommended unless agreement is reached with regulators on the missed requirements, the source says. Certain other stipulations apply in these situations.

Meanwhile, the Department of Defense recently issued a memorandum calling for the consideration of the dialogue committee's fair share approach to pro-rate congressional reductions in light of a $400 million cut to the fiscal year 1995 Defense Environmental Restoration Account (DERA). The department had requested $2.18 billion. According to the Nov. 1 memo from Deputy Under Secretary of Defense for Environmental Security Sherri W. Goodman, "In distributing

Stakeholder group questions legality of process

TASK FORCE TO EXAMINE TRANSFER OF BASE PROPERTY TO AMERICAN INDIAN TRIBES

An interagency task force has been formed to clarify government policy on the transfer of surplus military base closure property to Native American tribes. An organization representing the interests of state and local governments is contending that an existing interim federal policy violates President Clinton's program for base closure communities and may undermine economic revitalization in those communities. Many of those properties are undergoing cleanups under Superfund and are the focus of community task forces working on recommendations for future use.

The task force consists of representatives from the Defense Department and the Department of the Interior, the latter of which has a trust relationship with American Indian nations. A DOI source says the task force includes high-level officials from both departments and that the White House is also involved in the discussions.

At issue is a DOI interim policy regarding the acquisition of excess and/or surplus DOD base closure property by American Indian nations. Various tribes have so far sought property at several base closure sites, including some on the Superfund national priorities list—Cecil Field in Florida; Williams Air Force Base (AFB) in Arizona; Griffiss and Plattsburgh AFBs in New York; and March AFB in California. The proposed policy was unveiled in September by DOI Assistant Secretary for Indian Affairs Ada Deer. In a Nov. 10 letter to Deer, the National Association of Installation Developers (NAID) raised concerns that the policy was at odds with Clinton's "five-point program" for base closure communities. The program is designed to speed the transfer of properties to communities for redevelopment.

NAID is a federally-funded group representing state and local governments, economic development authorities, military installation reuse authorities and other entities concerned with the reuse of former military properties.

The president's program is "based upon the premise that the economic revitalization of impacted communities is served best by an integrated planning process fostered by the statutory requirement for a single Local Redevelopment Authority [LRA]," the NAID letter points out. The group contends that the DOI policy "may undermine the President's program and slow down the economic revitalization of base closure communities by encouraging Indian tribes to seek to acquire base closure property in advance of, and without coordination with, federally recognized LRAs." The letter states that tribes should participate in the LRAs rather than allowing DOI to "exercise a Federal preemptive right to acquire the property on behalf of Indian Tribes in advance of a comprehensive reuse plan."

The interim DOI policy states that the department will give strong consideration to tribal requests for the acquisition of DOD property if the tribe's current land holdings are within a 25-mile radius of the properties and if the requested properties are located in the same state where a majority of the tribe's land holdings are located. Tribal proposals must also justify the need for the property and give priority to uses that facilitate health and safety as well as environmental justice issues and/or economic development opportunities.

Sources explain that the Federal Property Act of 1949 gives federal agencies first rights to property no longer being used by another agency. The question being tackled by the task force is how that policy affects DOI's efforts to obtain surplus federal property if it is doing so on behalf of a tribe.

A NAID source says his organization would prefer to have tribes work directly with community reuse committees to jointly determine the fate of closing base properties. He says at the sites where that has happened, "mutually agreed solutions have been found." For example, he points out that the Gila Tribe in Arizona has agreed to become a full-time partner in community efforts to create an airport authority at Williams AFB. But the source says tribes have been asked to join community reuse committees at other sites, but have turned down the offers to instead pursue the property through DOI.

A DOI source says the department has its own task force working on a final policy; that group's next meeting is in January. She says the policy will provide guidance to DOI's Bureau of Indian Affairs and will have to take into consideration environmental justice issues. The source says the matter will have to be resolved at Assistant Secretary Deer's level.

Another DOI source says that Indian tribes "don't have the political power some of these communities have" and adds that "we don't believe things have been going in their favor." He says the issue has been brewing for about a year. Tribal sources could not be reached for comment. A DOD source says the issue is under review and that the department's general counsel's office is looking into the issue. It is not known when the interagency task force will develop any recommendations.

cases over the next year.

According to the release, the first case involves four parcels of property believed to be owned by the same party, at which community members charge that the sites are being used for illegal dumping and storage of hazardous materials. The second case deals with the alleged illegal operation of a trash transfer station, the release says. Members of the community charge that potentially hazardous materials are being dumped at the station, that is near a residential area. And the third case revolves around a business which is allegedly discarding trash around a site. Members of the community have complained of noxious odors and headaches from the fumes.

As cases are referred to the network, a steering committee will make final the determination on which cases it can accept. Actual members of that committee have not yet been determined, but will be selected from the Boston Bar Association, Alternatives for Community and the Environment, the Environmental Diversity Forum, the Massachusetts Black Lawyers Association, the Massachusetts Public Health Association, the Lawyers Committee for Civil Rights Under Law of the Boston Bar Association, the Tellus Institute, the Dudley Street Neighborhood Initiative, the Roxbury Neighborhood Council and the Massachusetts Department of Environmental Protection and EPA, the press release says.

FFERDC TO EXPLORE EXPANDED DEFINITION OF ENVIRONMENTAL JUSTICE

A workgroup of the Federal Facilities Environmental Restoration Dialogue Committee (FFERDC) is grappling with whether to incorporate economic concerns into their work on environmental justice issues. The workgroup, which held meetings Nov. 17-18, focuses on funding and priority setting issues.

Lenny Siegel, director of the Pacific Studies Center, presented a paper during the meeting in which he proposed a broader definition of environmental justice.

"Though most people think of environmental justice as overcoming the disproportionate concentration of people of color around hazardous waste sites, the issue is actually much broader. It melds environmental, social, and economic factors in communities of color and other disadvantaged communities. Thus, solid environmental justice policies must simultaneously address the problems of people who have been exposed to environmental and economic inequity," the paper says.

Siegel used as an example the community surrounding the Hunter's Point Naval Shipyard in San Francisco, CA, which is listed on the national priorities list. He said local workers and contractors should "receive a significant share of cleanup and other closure work," and that "the same demands" are emerging at other Superfund sites in the south, in Alaska, and on Indian lands. "Unfortunately," Siegel said in the paper, "little of the work has been made available to members of the affected communities."

He offered four reasons for this: (1) Set-asides and other rules requiring minority or local contracting have been poorly written and are "miserably" enforced; (2) training programs are not organized or timed to match actual employment needs; (3) cleanup work is organized in a sporadic fashion; and (4) most contracts are awarded regionally or nationally, minimizing the opportunity for local hiring or contracting with "small, local or disadvantaged" businesses.

Siegel said he has developed a program at Hunters Point with two objectives that directly relate to the working group's mission. First, Siegel says he wants contracting agencies to develop a workplan that predicts contracting and employment opportunities so that training and community development institutions can "promptly" assemble a workforce. And second, he wants "multiple tasks" to be timed to provide steady employment, not "peaks and valleys" of activities. Sponsored by San Francisco State University's Urban Institute, the project—which is called the California Economic Recovery and Environmental Restoration Project—has helped to "facilitate" a meeting on the subject that will bring together representatives from the Navy, the City and County of San Francisco, educational institutions, and the Bayview/Hunters Point neighborhoods. Ideally, Siegel said, the project will assist community-based organizations to "recruit, screen, and employ" local help.

As for the FFERDC, Siegel said it has established an ad hoc committee on contracting issues and is scheduled to meet in January.

Siegel's paper prompted a response from several members of the working group. Sam Goodhope, counsel with the Texas Attorney General's office, says he dislikes Siegel's attempt to broaden the working group's scope. "This committee was created for the purpose of setting priorities at federal facilities cleanup sites. I'm convinced that we already have too much on our plate to worry about minority subcontracting or historically-underrepresented businesses. Those things are important, but they are beyond our expertise and simply not relevant to our task."

Goodhope said the FFERDC should address issues such as the impact that environmental pollution has on military service groups and their families. Historically, he said, service personnel have remained silent about such environmental issues for fear of being transferred. He cited one instance where two service members were asked why their wives were complaining about the facility's condition. "Needless to say," Goodhope added, "they got their wives to stop."

Goodhope said the committee should implement some procedures to undermine what he termed a "climate of fear. We need to create some sort of whistle blower provisions to encourage people to speak out on these issues," he said.

FFERDC will hold a plenary meeting sometime early next year.

Administrative Improvements

According to Briggum, the reauthorization bills—which died in Congress in October when House leaders failed to reach agreement on a rule that would have governed floor action on the bill—"are clearly not the starting point" for a new reform debate. Briggum said that it is still too early to judge how the committee elections will affect where that point will be, but added that the strong Republican push to eliminate retroactive liability "will come fast" as the new Congress convenes.

"It's a difficult issue," Briggum said, adding that on one hand Congress has pledged no new taxes, but at the same time many believe that liability for past actions that were legal at the time is unfair. Many have questioned how Superfund liability would be paid for if retroactive liability were repealed. It is going to be "a challenge for people to figure out [how to deal with the] competing goals," she said. And several contentious issues that were left unresolved during the last debate may serve to slow the process this time around, according to Briggum. Those issues may include a debate over how natural resources damages should be calculated. "It's a huge issue" partly because there is a "large amount of potential liability," Briggum said. Other issues include whether to include radioactive materials on the list of hazardous materials and state authority issues.

While a comprehensive reform package remains an urgent goal of the business community, Briggum says that if it becomes clear that there is extensive delay, EPA should undertake efforts to reform the program administratively. But both Briggum and Krablin pointed out that administrative reforms may not aid some groups in seeking relief from the law, including municipalities, lenders, insurers and small businesses.

Krablin outlined several administrative reforms that the coalition would like to see implemented. In the area of public participation, Krablin said increased early involvement and the establishment of community working groups would benefit the Superfund process. In that same vein, enhancing the technical assistance grants program and preparing equity studies and pilot projects would aid in increasing public participation. In addressing remedy selection, EPA could continue the development of generic or presumptive remedies, issue its long-awaited soil trigger levels guidance, expand groundwater technical impracticability waivers, and take into consideration land use issues, Krablin said.

In the area of liability, the agency could increase the use of its settlement tools and pilot alternative dispute resolution projects, pilot the reform bills' ability-to-pay provisions, issue guidelines addressing the liability of prospective purchasers and increase the use of mixed-funding, Krablin said.

Policy

DRAFT SOIL SCREENING LEVEL GUIDANCE TO BE RELEASED THIS MONTH

At a public information meeting on Dec. 1, EPA announced that its soil screening level (SSL) guidance, which will provide site managers with target risk levels for approximately 107 chemical contaminants, will be available for public comment Dec. 15. The long-awaited guidance has been held up several times, but is expected to become final early next year.

In 1991, EPA asked the Office of Emergency and Remedial Response (OERR) to conduct a study to outline options for accelerating the rate of cleanups at national priorities list (NPL) sites. The study found that the current investigation/remedy selection process takes over three years to complete because each site is treated as a separate problem, requiring the preparation of site-specific risk assessments, cleanup levels and technical solutions. OERR used the study as the catalyst for developing the SSL standards.

The study proposed that standardizing the remedial planning and remedy selection process would significantly reduce the time it takes to start cleanups and would improve consistency in the approach to site remediation.

The public comment period for the guidance will run through Feb. 15, after which it will be updated and sent to site managers around the country, David Cooper, the author of the guidance said.

Cooper explained that three pathways have proven to be the most common routes of human exposure to contaminants in residential settings: ingestion of soil; inhalation of volatiles and "fugitive" dusts; and the migration of contaminants through soil to an underlying potable aquifer. Cooper said the models and assumptions used to develop the SSLs are representative of a "reasonable maximum exposure" in a residential setting. The Superfund program's method of estimating the high end, Cooper said, is to combine an arithmetic average value for site concentration with high-end values for intake and duration. The estimates are then compared to chemical-specific toxicity criteria approved by the agency, such as those found in the Integrated Risk Information System (IRIS) and Health Effects Assessment Summary Tables (HEAST). Cooper also noted that SSLs will not automatically trigger the need for response actions or define "unacceptable" levels of contaminants in the soil. Instead, they are designed to give engineers an analytical tool for determining whether a more in-depth site evaluation is necessary.

A draft of the guidance made available at the meeting provided a sample problem for determining the soil screening level number for soil contaminated with cadmium swallowed by a child.

In step one, the problem envisions that a child living near a contaminated site might accidentally swallow small amounts of soil—up to the size of one half an aspirin tablet—each day. This, the draft says, is about 200 milligrams (mg) of soil per day. Assuming that the child would be present near the site for approximately 350 days a year, the sample determines that the child could swallow 70 grams of soil each year. Over a six-year period, this would total 420 grams, or .42 kilograms (kg).

The next step is to determine how much of each toxin might cause harm to a person. The draft notes that this depends on the size of a person's body, which is set at 15 kg, or 33 pounds, for this example.

The sample problem looks at cadmium, a bluish white metal that often appears in solder and batteries. Lab tests have found that for each kilogram a person weighs, a very minute amount of cadmium each day, 0.0005 milligrams, would be just enough to cause a harmful effect. For a child weighing 15 kg, the total amount of cadmium necessary to cause an effect in one day would be 15 times 0.0005, or 0.0075 milligrams.

If cadmium were swallowed at this rate for one year, the total yearly amount necessary to cause an effect would be 2.74 mgs. If cadmium were swallowed at this rate for six years, 16.4 mgs would be just enough to cause harm to the child.

The example concludes by comparing the amount of toxin necessary to cause an effect with the amount of soil that could be swallowed from step one. By dividing 16.4 mg by the .42 kg of soil that could be swallowed, the problem finds that there must be 39 mg of cadmium per 1kg of soil for the child to be at risk.

Cooper explained that this was the method used to set risk levels for each of the contaminants studied. Cooper said the SSL draft guidance will be listed in the Dec. 15 issue of the *Federal Register*.

PROPOSALS FOR REGIONAL DELEGATIONS OF AUTHORITY ACCEPTED BY OSWER CHIEF

The Assistant Administrator for the Office of Solid Waste & Emergency Response (OSWER) has accepted 11 proposed delegations of authority that are designed to ensure that Superfund decisions are being made at "the most efficient and effective level." The delegations in the report mainly deal with regional activities.

The delegations are the product of a Superfund Delegations Workgroup study that was released in November.

According to Seth Lowe, one of the report's authors, the workgroup believes the proposed delegations will streamline the current process and result in a "tremendous" cost savings to the Superfund program. EPA Region II Superfund Branch Chief Ron Borsellino says the regional representatives on the workgroup wanted to give the regions greater decision-making powers in order to avoid what he termed "unnecessary, red-tape delays" in the cleanup process. According to the report, "Redelegation of authority to lower levels can save time and resources, thus increasing program efficiency."

Some of the delegations accepted by Elliott Laws, OSWER assistant administrator, are as follows:

- Regional administrators will be able to redelegate to the on-scene coordinators the authority to initiate emergency removals costing up to $200,000.
- Regional administrators will be able to invoke the emergency waivers (i.e., to spend more than $2 million for removals) at sites costing up to $6 million in removal funds subject to a regional allowance ceiling; they will also be able to redelegate to division directors.
- Regional administrators will be able to redelegate to division directors the authority to invoke the consistency waiver (i.e., to spend more than $2 million for removals at proposed and final National Priorities List sites).
- Regional administrators may obligate the fund to pay CERCLA claims for reimbursement, including preauthorizing mixed funding settlements, through the use of a "Claims Delegation Report" issued by the Assistant Administrator for OSWER.
- Regional administrators are no longer required to pursue headquarters consultation when making imminent and substantial endangerment determinations.
- Regional administrators will no longer be required to pursue headquarters consultation when entering into administrative orders on consent.
- The remedy delegation report will no longer be required for federal facility records of decision.

With the exception of one delegation that would have allowed OSWER to carry out hazardous substance research programs, all 11 of the recommended delegations have been approved for implementation by the administrator, the report says.

The workgroup, in the report, claims that its recommendations try to "balance the need for national consistency and accountability in the implementation of the Superfund program with the need to increase program efficiency and speed." Accordingly, the recommendations try to reduce the amount of effort required to complete a particular agency action. "Certainly," the report says, "the implementation of these recommendations will streamline the

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Lassen sets battle plan for possible depot fight

By Jane Braxton Little 1/29/95
Bee Correspondent Sac. Bee

SUSANVILLE – It's not on any military base closure list yet but officials throughout Lassen County are campaigning to save Sierra Army Depot as if their lives depended on it.

The area's economic life may depend on it.

The base in the high sage desert between Susanville and Reno is the rural county's largest employer, issues its largest payroll and is responsible for 37 percent of the county's personal income.

"The thought of losing an employer of the magnitude of Sierra Army Depot sends fear into all corners of this community," said Jack Lensing, president of the Lassen County Chamber of Commerce.

Lensing, Susanville Mayor James C. Jeskey and Lassen County Supervisor Lyle L. Lough are spearheading save-the-base efforts that range from a massive citizens' letter-writing campaign to lobbying trips to Washington, D.C.

The area has already suffered economically from recent reductions in the timber industry, said Jeskey. Losing the military base would be "an unbearable blow," he said.

"Northern California has had a difficult time economically due to our isolation and dependence on ... natural resources. We aren't taking any chances on Sierra Army Depot," Jeskey said.

The base, widely reported as the Army's largest West Coast depot for nuclear weapons, was built in 1942 as an ammunition storage and shipment facility. It currently stores 418 million pounds of ammunition, enough to fill nearly 4,000 rail cars stretching over 36 miles, said Larry Rogers, a spokesman for the depot, which sits on 96,500 acres east of Honey Lake. Army officials will neither confirm nor deny the presence of nuclear weapons at Sierra Army Depot.

Military base closures commissions in 1991 and 1993 ignored Sierra Army Depot. But late last year an internal Army evaluation ranked it third among the three Western Army bases that store munitions. If its munitions storage is relocated, the entire base could be closed within six years, Rogers said.

That makes it a prime target for the next base closure list. The initial 1995 list will be sent by Defense Secretary William Perry to the base closure commission on March 1, but nothing will be final until the last week in June.

Rep. Wally Herger, R-Rio Oso, has challenged the Army's evaluation criteria and berated Army officials for failing to recognize the Lassen County facility as the most cost-effective of its kind. Sierra Army Depot operates at less than half the average cost of similar facilities, he said.

"Sierra Army Depot is not only an important local employer, but it is also doing right by the taxpayer. It makes no sense to close it," Herger said.

Lough, the Lassen County supervisor, said Army officials used faulty information in their evaluation of Sierra Army Depot's military importance.

"Their cost-of-operations numbers were wrong and their strategic assumptions were wrong," Lough said.

Army officials have not made their evaluation report public and have not commented on the criticisms, said Rogers.

Depot supporters hope to "neutralize" the effects of the report, said Jolena Voorhis, an assistant to Gov. Pete Wilson working to retain military bases in California. In addition to data they consider incorrect, critics of the Army study said it does not recognize a recent shift in Sierra Army Depot's emphasis from munitions to tactical support systems.

"For 50 years, bombs and bullets were the name of the game here. It's no longer the main thing we do," said Rogers, the depot spokesman.

The base now stores mobile water purification systems, fuel stations and mini-dwelling units that can be shipped to a military site. The systems are also being used for humanitarian efforts and were recently sent to Mississippi for flood relief, to Florida during a hurricane and to Rwanda, said Rogers.

The new mission could reduce some of the criticism generated over the years by the noise and smoke at the base caused by the detonation of old munitions. Sierra Army Depot also has been the site of several demonstrations protesting its reported role in storing and shipping nuclear weapons.

Generally, however, Lassen County residents have welcomed the base as an ally and partner in their rural community.

"Army personnel participate in our activities. We've always been good neighbors and we want to make sure they're here for us to continue the relationship," said Jeskey, the Susanville mayor.

Sierra Army Depot spends around $5 million on purchases in Lassen County, said Robert K. Sorvaag, Lassen County community development director. If it were to close, the loss of the base's 1,300 civilian and military jobs would affect another 1,950 retail and service jobs – about 30 percent of the work force, he said. Sorvaag predicted that unemployment would rocket to over 19 percent, nearly double the current level.

Lough vowed to post the addresses of state and federal representatives "on every bulletin board in the county." He hopes to generate several thousand handwritten letters of support for Sierra Army Depot, he said.

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THE

BASE REUSE REPORT

JANUARY *Economic Development, Planning and Redevelopment of Military Bases* 1995

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1995 Military Base Closures: 'Past the Fat, the Meat–to the Bone'

By Tom Philp

Communities in California with military bases must come up with a "better mousetrap" as they craft campaigns to keep their bases off this year's list of facility closures.

That's the warning from the state's chief strategist, Judy Ann Miller, who warns that potential devastation of the local economy should not be the only argument to keep the base off what is expected to be an extensive list of closures. Communities must stress the "military value" of the local bases as well, she said.

"We have to consider all (bases) vulnerable in the state of California," Miller said. "We're past the fat. We're past the meat. We're to the bone."

The elaborate process to decide on the closures is scheduled to begin in earnest this month with the naming of the 1995 Defense Base Closure and Realignment Commission.

Meanwhile, officials in charge of each military branch have been coming up with their own lists of recommended closures. On March 1, Defense Secretary William Perry is scheduled to present that list to the commission.

"Everyone is potentially on this list," said Wade Nelson, a spokesman for the commission. "There is hardly anything left that is not a significant military installation. Most people would say that the easy ones have been closed in the first three rounds of this process," referring to the closures announced in 1988, 1991 and 1993.

As the stakes have risen for the communities clinging to their military bases, so has the sophistication of their lobbying campaigns.

Representatives of more than 100 communities with active military bases have already traveled to the commission's headquarters, in an office building in Arlington, VA, to begin the homework for their 1995 campaigns.

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BRR Interview: Alan Dixon

New BRAC chair urges greater concern for post-closure impact

By Sigrid Bathen

Illustration by Gaylord Bennett

A former U.S. Senator and Illinois state legislator, Alan J. Dixon was confirmed by the U.S. Senate last October as chairman of the Defense Base Closure and Realignment Commission. A member of the Senate Armed Services Committee and chairman of its Subcommittee on Readiness, Preparedness

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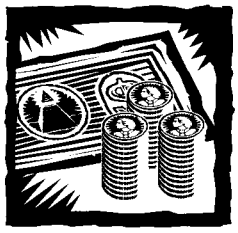

FINANCE & ECONOMICS

The 'Ripple Effect':

When military bases are shut down or scaled back, much more is lost than soldiers

by John Howard

When military installations are shut down or scaled back – the favored bureaucratic euphemism is "placed in transition" – much more is lost than soldiers, weapons or on-base civilian jobs. A military base is a nexus of economic activity, sustaining a myriad of local businesses, and the ripple effects of closure are felt far beyond the barracks. "Each closure is different, painful in its own way. You learn lessons on a case-by-case basis. Making the transition can be very, very painful," said one local official familiar with the closure of Fort Ord in Monterey County, Calif.

To date, those transitions appear to have been most painful in California: For decades, the state has taken 21 cents of every defense dollar. Now, as the U.S. retrenches from the Cold War, California and other states are feeling the pinch.

Twenty-two bases have been ordered closed or realigned in California in five years. More cuts will be announced in March by the Defense Base Closure and Realignment Commission, which will decide which of the nation's 470 remaining military installations – including 67 in California – will be closed or down-sized.

More than two-thirds – about 69 percent – of Defense Department personnel cuts nationally have occurred in California. Although estimates vary, the impact on the Golden State could total about $7 billion in lost personal income and entails the loss of the equivalent of about 33,000 medium-sized businesses. This, on top of a painful recession and the highest unemployment of any major industrial state.

"When future closures are coupled with job losses stemming from the already announced based closures, hardly a community in the state will not feel the negative economic impact," says a grim state Chamber of Commerce report.

Moreno Valley is a case in point, the victim of a double-whammy of base realignment and recession. There, the ripple effect was dramatic.

During the 1980s, the western Riverside County community near March Air Force Base literally exploded in population – from 20,000 at the beginning of the decade to more than 120,000 by 1990, the fastest growth rate in the United States. But the boom was deceiving: About half of all adult residents commuted out of the area to jobs, many to defense-industry jobs in Orange and Los Angeles counties. Then, the recession sent unemployment spiraling. Defense industries closed, mortgage failures increased and retail sales plunged. Economic conditions in the sprawling bedroom community deteriorated.

> *"They gave away the family jewels to finance the mall."*
> **–ART PICK**

A long-awaited regional mall a mile from the the base finally geared up in 1992 after years of anticipation, but by then the recession had taken its toll and the hoped-for tax revenues fell far short of projections. Too short, in fact, to pay the interest on a $13 million debt, forcing local authorities to scramble for high-interest refinancing. The transition of March to a reserve base means the loss of about 4,000 jobs – people who spend money at the mall. The scaling back of March, a fixture in the region since 1918, has had a destabilizing effect on the entire area.

"The overall downsizing of the defense industries had a dramatic impact on Moreno Valley," said Art Pick, head of the Greater Riverside Chambers of Commerce. "The impact was more profound because Moreno Valley didn't have a stable base to begin with, to the point that our unemployment was much higher than our neighboring county to the north." Dreams of March as the linchpin of a stable economy faded. It is typical of the staggering economic impact of a base closure on the surrounding region.

"They gave away the family jewels to finance the mall," Pick noted.

In contrast, the Fort Ord closure reflects a happier tale, largely because of the natural advantages of Monterey County. There, the base – which is being closed rather than realigned – has been converted to a state university campus. It will accept its first class, 600 to 900 students, in the fall of 1995. Businesses near the base were affected negatively, but the city of Monterey is weathering the storm, partly because the region is attracting a professional, academic and research contingent focused on the base and other military institutions that remain, such as the Defense Language Institute and the Naval Post-Graduate School. Although the loss of several thousand personnel caused a softening of Monterey's rental market, new renters from Salinas, Watsonville and other nearby areas came into the community to fill the gap–former commuters lured by the chance to live, as well as work in Monterey, which has a permanent population of about 32,000.

"What we're seeing now more than anything else is the evolution of a number of businesses and new business

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BRAC DEVELOPMENTS

Depot is about to become the new corporate and manufacturing headquarters for Packard Bell Electronics. *(See Case Study below)*

And near Monterey, Fort Ord is on its way to becoming the latest member of the California State University system. Despite the state's ongoing budget crisis, Williams is convinced that money for CSU/Monterey "is not a big question mark. Money was put in the budget this year, which was unprecedented. Additional campuses are absolutely going to be necessary."

The bases furthest along in the reuse process, while fortunate to have found major corporate suitors, share one thing in common. The planners managed to resolve local community differences quickly, and move on.

Where local communities continue to struggle to find a consensus, the closing bases invariably are not as far along in the conversion process. At El Toro Marine Corps Air Station, for example, Orange County has withdrawn from a joint powers agency. Now this agency and the county may make separate bids to the Marines for future control of the base. The primary dispute is over the future role of the base airport.

And at the former George Air Force Base in San Bernardino County, a litigious struggle among local communities over control of the base has stalled conversion plans.

"Litigation is terrible," said Bopf. If communities decide to settle their differences in court, he added "nobody is going to win."

Meanwhile, all eyes are on Washington, where huge political changes have made the base closure process even more unpredictable.

If previous closure processes are any indication, California and other states will soon get the first hints of what they truly face.

"There are usually leaks between January and March," said Nelson of the closure commission. If the Defense Department has recommended closure of a local base, "people start to hear that in January and February. Or they hear rumors." BR

CONTACTS:

***Ben Williams** Governor's Office of Planning and Research, (916) 322-3170*
***Bill Bopf**, executive director of the Inland Valley Economic Development Authority, (909) 885-4832*
***Judy Ann Miller**, Office of Military Base Retention, (916) 323-4446*

Tom Philp is a staff writer for the Sacramento Bee *who has covered military base closure issues.*

Army Depot-Packard Bell Conversion: A Success Story

By Tom Philp

In mid-summer of 1994, Sacramento officials seemed bold with their goal to quickly find enough rent-paying business tenants to pay the $1.3 million annual maintenance bill for the city's one-time Army Depot. Once the site of 3,000 solid federal-paying jobs, the base, on the 1991 closure list, was nearly empty.

Then the telephone rang. It was the kind of nibble that cities dream of. It was a major corporation seeking a new home – fast.

By the beginning of September, the deal was almost done. Packard Bell Electronics, whose Southern California headquarters was damaged in the 1994 Northridge earthquake, was moving to the former Army Depot and planned to reuse virtually the entire base. Sacramento had prevailed over a competing bid from Utah and also over some Southern California communities who courted Packard Bell, but who couldn't come up with the site or facilities that were as ideal as the Army Depot.

"I don't think that type of success story will be the norm," said Ben Williams, the director of base retention and deputy director of the state Office of Planning and Research.

However, Sacramento officials say other communities can apply many of the same techniques that helped to seal the deal with Packard Bell. Examples:

1. Teamwork with local and regional trade groups. The Sacramento Area Commerce and Trade Organization first sold Packard Bell on the competitive advantages of the region. "When it was time to talk about the specific property, that's when (SACTO) handed it off to us," said city Economic Development Director Bill Farley.

2. Friendly relations with fellow governmental agencies. Once Packard Bell showed interest, city officials quickly worked behind the scenes with Army officials to deal with other state and federal agencies that wanted pieces of the base. "The strategy was to first ask these other agencies to voluntarily withdraw their requests for property, which they did," said City Councilman Darrell Steinberg.

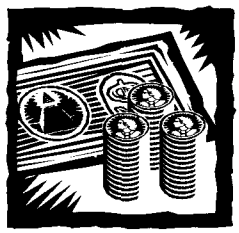
3. State legislation to provide tax credits that would give Sacramento the advantage over an alternative site in Utah.

4. And a realistic reuse plan that anticipated the $19 million in renovation expenses, money the city will loan to Packard Bell.

"It is really important for the community to have a vision for the reuse and to stick to that vision," Steinberg said. BR

CONTACTS:

***Bill Farley**, economic development director, City of Sacramento, (916) 264-7223*
***Darrell Steinberg**, Sacramento City Council, (916) 264-7006*



FINANCE & ECONOMICS

The 'Ripple Effect'

continued from page 4

activity ramping up to support the university," said Fred Cohn, an assistant to the Monterey city manager. "The transition is painful, but we've sensed that when the evolution is complete we'll be healthier than before. But, of course, the evolution is painful."

The closure also reflected a pattern emerging throughout the country. Those businesses close to the closed base suffered the most, particularly the limited, mom-and-pop operations dependent for their trade on base personnel. But the larger companies, especially those linked to national chains, did better. And those with a regional customer – such as major automobile dealerships – did best of all. Moreover, new residents who live on campus can avoid the costly local housing market.

Merced County's Castle Air Force Base, too, has taken a pro-active approach in its closure. As buildings become vacant, a joint powers authority with close links to the Washington, D.C.-based National Association of Installation Developers, markets the facilities to attract businesses, hoping to supplant an economic base that once supported a total of 14,000 base personnel and dependents. The goal, one Air Force official noted, "is to get the facilities leased out before the military leaves."

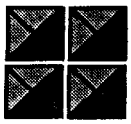
"The closure of a military base that includes a large scale of civilian employment leaves a gap in the regional economy that must be filled with alternate basic employment," notes a study by the Real Estate and Land Use Institute of the California State University.

Filling that gap is the whole ball game. BR

CONTACTS

Steven A. Nukes and Associates, San Luis Obispo, Calif. (805) 541-2077
Dick Martin, executive director of joint powers authority for Castle Air Force Base, member National Association of Installation Developers. (209) 357-3370

John Howard is a political and business writer for the Associated Press Capitol Bureau in Sacramento, Calif.



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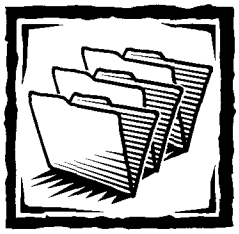


CASE STUDY

Mare Island

Vallejo officials get high marks from base closure experts

By Daniel C. Carson

When two researchers took a hard look at the City of Vallejo back in 1985, they discovered an economy dangerously overreliant on its biggest civilian employer – the naval shipyard at Mare Island.

"Vallejo has always been and remains a one-company town," reported Judy Schneider and Wendy Patton. "Its fortunes, features, composition, and resources have been tied to production at Mare Island shipyard," they warned, and the town faced dire consequences should it ever be closed.

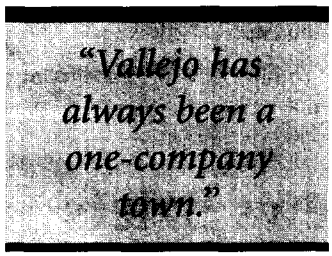
Last year, such long-held fears about the fate of the 136-year-old base in Northern California gave way to the harsh new realities of base closure. The decision of the U.S. Base Closure and Realignment Commission to shutter Mare Island in April 1996 has left the community scrambling to remedy the financial and human damage caused by the base closure and to find new uses for the island (actually a 5,400-acre peninsula) that will resuscitate an ailing economy.

After losing a last-ditch lobbying fight to save the base, local officials are getting high marks from base closure experts and others for moving aggressively to deal head-on with the social problems and economic challenges that can result when 7,700 civilian and 1,800 military jobs disappear. U.S. Secretary of Labor Robert Reich publicly praised those efforts as a model for the nation during a recent visit to the base.

Within 13 months after the decision to close Mare Island was finalized, the Vallejo City Council adopted a Reuse Plan for the base that is destined to become part of the community's General Plan. Rather than strive for a single new use, the Reuse Plan divides the island into 13 sub-areas and calls for a mixture of housing, heavy and light industry, and educational uses.

The headlands at the southern tip of the island, with their scenic vistas across San Francisco Bay, would be added to a nearby regional park, and the existing base golf course would be expanded and improved. Some of the older buildings and drydocks would be become part of an historical quarter.

Some lowland areas would continue as a dumping ground for dredge spoils – a surprisingly valuable commodity to ports which are hard-put to find anyplace to unload such environmentally hazardous materials.



The plan was fashioned with the help of economic and marketing consultants, but its main impetus came from a 52-member committee appointed by Mayor Tony Intintoli. A city known in the past for its warring political factions came to a surprisingly easy consensus about how best to transform its military ugly duckling into a future economic golden goose. Only one other base in the 1993 round of U.S. base closures finished that task more quickly.

With the reuse plan in place, city officials have pushed ahead with negotiations with the Department of Defense to assume control of the island, first with a master lease and eventually through a land transfer. The locations and extent of toxic contamination are being inventoried so that clean-up can begin even before the base is shut down. Military equipment and property that might be turned to civilian use are also being cataloged so that swords can be turned into plowshares.

Plans are afoot to set up a non-profit marketing organization to convince developers and businesses to take advantage of the island's harbor and railway lines and other assets. The city has already kicked off its marketing of Mare Island, wining and dining its strongest prospects for relocation there at an October lunch at the officer's club.

If it has done well in dealing with the real estate issues, the community has also taken an innovative approach to the social and human fallout.

With the help of an $8 million grant from the U.S. Department of Labor, Private Industry Councils from Solano and Napa counties have collaborated in the establishment of an on-base center to train hundreds of shipyard steamfitters, shipwrights, and boilermakers for new careers. In addition to learning new skills, the center offers counseling, job and relocation assistance.

Thousands of shipyard workers are taking advantage of the U.S. Department of Defense's Priority Placement Program, which moves them to jobs at other defense installations, or electing to accept financial incentives for early retirement. As a result, two rounds of layoffs have been cancelled and base officials are hopeful that no more than 900 will be laid off in 1996.

The Solano Economic Development Corp. (SEDCORP), a local economic development agency, was commissioned to study which off-base businesses and workers will be caught in the economic wake as Vallejo's largest local payroll evaporates. A task force created by the mayor is determining how to leverage a $2.3 million federal grant and shore up the city's "safety net" of social welfare programs that are at risk of being overwhelmed with unemployed and emotionally distressed families.

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years ago, has raised $400,000 to try and save the 50-year-old Army base, which *Gazette-Telegraph* Editor **Jon Stapleton** said pumps $600 million into the Colorado Springs economy each year, employing 21,000.

Several experts quoted in the series urged that communities be thoroughly prepared when attempting to halt a base closure. "Time is your enemy," said **Paul Hirsch,** a former BRAC Commission staffer. "If you wait until next spring, it's already too late." Communities like Colorado Springs, the series noted, begin months – and even years – in advance to develop strategy, raise money, hire lobbyists and travel to Washington D.C. to meet with BRAC staff.

"The BRAC Commission is not your enemy," **Capt. Peter Bowman,** a retired Navy officer and BRAC commissioner, told the *Gazette-Telegraph.* "It can be your best friend – if you know how to use it."

Denver

DENVER'S LOWRY AFB: 'HAVE A CONTINGENCY PLAN'

On the site of Denver's 1,800-acre, 59-year-old **Lowry AFB,** which was closed Sept. 30, 1994, conversion plans are well underway. Redevelopment officials don't claim an immediate turnaround – after all, 12,000 government and civilian jobs were lost – but hope eventually to generate more than 10,000 jobs on the base.

Thus far, an 800-student community college campus has been established on the grounds, utilizing existing Air Force training classrooms. A museum has been opened, and base housing is being refurbished to attract new tenants (100 of the 687 base houses have already been rented). The commissary has been converted into offices and labs for a blood center. Other business tenants on the base include two private schools and the Denver Public Library.

"We went through a terrible recession in the '80s before the rest of the nation did," **Bonnie Turner** of the Denver Office of Economic Development told the *Sacramento Bee,* which sent reporter **Sam Stanton** to Denver to see how officials there were handling a major base closure. "We've now been coming out of that, so the closure is actually happening at a time when our economy is expanding."

Lowry's base closure survivors urge other communities to plan ahead. "There was not a contingency plan in place," redevelopment coordinator **Jim Meadows** told *The Bee,* which tweaked Sacramento officials for failing to have a contingency plan if **McClellan AFB** is closed. "You're much better off to have a contingency plan."

Stanton, who researched and wrote the Christmas Day, Page One Lowry piece, observed: "Such talk is heresy in the halls of power in Sacramento . . . Rather than discuss what might be made of McClellan if it falls under the ax of the 1995 round of base closings, officials in Sacramento are adamant that such talk must not be heard, not even in whispers."

Washington D.C.

GAO SAYS PENTAGON FALLING SHORT IN PROPERTY SALES

The U.S. General Accounting Office concluded in a recent report that the Pentagon is falling far short of revenue projections from the sale of closed property. According to the GAO, the Department of Defense had hoped to gain $4.1 billion from those sales, but less than $70 million has been realized.

"It is taking more and more defense dollars now to close bases in the hopes of saving money five, six years downstream," a Senate staffer, who was not identified, told the *Washington Times* in a Nov. 30 story.

Ohio

GAO URGES GOVERNMENT TO RECONSIDER OHIO CLOSURE

Congressional investigators said last month that the government should reconsider closing **Newark AFB** in Heath, Ohio. In a copyrighted account originally published in the *Cleveland Plain Dealer,* the Associated Press reported Dec. 18 that the unusual circumstances plaguing the planned privatization of Newark should prompt officials to reconsider.

"We believe that the problems being faced in implementing this decision are of such an unusual nature to warrant revisiting planned closure and privatization," said the General Accounting Office report. Citing budgetary overruns (the base closure group has settled on $62.2 million for the closure budget, nearly double the original $31.3 million estimate), the GAO also recomputed the BRAC estimate of the "payback period" in which the savings of closure would "cancel out" the costs, saying the payback period could be 17 to 100 years.

San Diego

U.S. MAYORS, CALIFORNIA GOVERNOR CONSIDER BASE CLOSURES IN CONFERENCES

In two separate conferences back-to-back in San Diego, Calif., last month (Dec. 1994), the U.S. Conference of Mayors and the Office of California **Gov. Pete Wilson** pondered the impact of base closures on their states and communities.

Former U.S. Sen. **Alan Dixon,** recently appointed chairman of the Base Closure and Realignment Commission, was a featured speaker at the Mayors' Conference *(see BRR Interview, p. 1),* while BRAC staffers held forth at Gov. Wilson's widely publicized conference, "BRAC '95: Holding the Line."

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Document Separator

Or Esther See also article in St Bay Bish

Dellore

These articles on Lowry + Mather were on the 1st Page of the Sac Bee

New development reincarnates closed military bases

By Sam Stanton
Bee Staff Writer

SAC BEE 12/25/94

DENVER – Through the gray mist of a brewing snowfall, the outline of the mothballed B-52 is barely visible. Not far from it, the sliced-up fuselage of another warplane rests on the ground.

They are landmarks in a sprawling expanse of land that resembles a ghost town, a place overrun with flocks of geese and crowded with empty, yellow-brick buildings that have plywood covering the windows and red "X" marks taped on the locked doors.

"That means the building has been pickled," George Peck says as he leads a visitor on a tour of the abandoned two-lane streets of Lowry Air Force Base. "They've cut off the water, flushed out the drains and put antifreeze in the toilets."

It is standard procedure in a post-Cold War world where base closures have crippled the economies of cities nationwide and elected officials have taken the blame for not planning better for such fates.

LOWRY AFB

Denver using former post as economic springboard

This military outpost lowered its flags and turned out the lights less than three months ago, taking the last of 12,000 government and civilian jobs from the Denver area. Barren, windswept acres are about all you might expect to find here.

Except there is more.

Like a community college campus serving more than 800 students. And a federal program with 400 other participants. And a new museum, and refurbished base housing with new tenants, and a commissary that is being turned into offices and labs for a regional blood center.

There is a golf course and classroom space and a business office that has managed to lure new tenants ranging from two private schools to the Denver Public Library.

And there are numerous other plans on how to use the 1,800 acres that became available in the heart of the Denver area after the base shut down Sept. 30.

What you will not find is a flurry of finger-pointing over whether the city should have been better prepared for the loss of the 59-year-old base, because when the Pentagon told officials in 1991 that Lowry was closing, local officials hunkered down and set about planning what to do with it.

"There was not a contingency plan in place," said Jim Meadows, a former homebuilder who came to Lowry from Bakersfield to oversee its redevelopment. "I don't think it ever hurts if you have a contingency plan on what to do.

"You still have to go through what some people have likened as analogous to a death in the family. You still have to go through the grieving and the anger, and then get on with what you're going to do.

"But, in reality, my personal opinion is you're much better off to have a contingency plan."

Such talk is heresy in the halls of power in Sacramento, where local officials grimly muster for yet another battle to save McClellan Air Force Base from closure.

Rather than discuss what might be made of McClellan if it falls under the ax of the 1995 round of base closings, officials in Sacramento are adamant that such talk must not be heard, not even in whispers.

"It's not that I have an ostrich-in-the-sand mentality," said Tom Eres, president of the city's Chamber of Commerce and a leading player in the "Save McClellan" effort. "We believe that, given a level playing field, McClellan is virtually an irreplaceable asset to the Department of Defense."

Such talk has been common since McClellan became a serious target of the base-closing gurus in Washington two years ago.

And officials trying to keep McClellan and its 14,000 jobs intact are loath to even discuss an afterlife for McClellan, even despite warnings from such people as former Mayor Anne Rudin, who believes the city should be prepared for the worst.

"The reason I don't want to talk about a Plan B is because, especially under the previous administration, Plan B was always Plan A," Sacramento Mayor Joe Serna Jr. said. "That's just not something that's acceptable to me.

"It doesn't mean that we're not interested in it. That's not where the policy battle should be fought. The policy battle is to save McClellan."

The theory that there should be no talk of reuse for the base is twofold:

- Some worry that any such talk immediately gets transmitted to Pentagon officials who are looking for bases to close and will take contingency planning as a sign that locals are ready to give up the fight.
- And others say any word that there is planning for the future damages local efforts to galvanize support for keeping the base open.

"Frankly, to be talking about a plan would be sheer speculation and sends the wrong signal to the business community," Eres said. "It could be a very depressing kind of a notion for a number of people who may well take the position that if we're talking about a plan, then the ballgame is over."

The support of the business community

APPEARED IN MINI-CLIPS

Continued

MATHER AFB

County hopes site will boom with help of federal funds

By Steve Gibson SAC BEE 12/25/94
Bee Staff Writer

Mather Air Force Base is not a ghost town.

More than 900 people work at full-time jobs at various sites at the sprawling 5,700-acre installation.

"There is life at Mather – but we've got a perception problem," acknowledged Robert Leonard, director of military base conversion for Sacramento County. "The base is so big, it's hard to see what we've already done."

Closed since Sept. 30, 1993, the installation has since been designated by Sacramento County as "Mather Field: California's Business Airport."

A slick county brochure predicts Mather will eventually be an air transportation hub, an industrial center, a business and education center, a regional environmental park and recreational destination.

But there's no commercial development yet. A handful of government agencies accounts for virtually all of Mather's employment and activity.

Security guards now are stationed at the gate, and a steady stream of military personnel, retirees and their dependents – about 950 per day – continues to visit the hospital and clinics operated by McClellan Air Force Base.

Hundreds of golfers drive onto the base each day to use the 18-hole championship golf course run by the Sacramento County Department of Parks and Recreation.

Mather's state-of-the-art air traffic control tower is shut down, but dozens of California National Guard helicopters and government firefighting aircraft continue to land and take off from the base runway.

While there's no civil aviation activity at Mather now, private development is expected to start early next year, Leonard said.

Sacramento County is expected to receive an $8.25 million federal Economic Development Agency grant to help convert Mather to civilian use and generate more jobs. In the mid-1980s, before it was targeted for closure, Mather employed nearly 8,000 people, most of them military personnel.

Today, people come to the base for different activities. For instance, the Rancho Cordova Parks and Recreation District is running the gymnasium and sports complex just inside the main gate.

The Sacramento County Office of Education operates a vocational training center near the flight line.

The county Fire Department is using part of the base's motor pool for fire engine repairs.

Community churches are using base chapels.

In a building facing the flight line, a Sacramento law firm has leased a suite of offices.

And dormitories and motel-like buildings are being converted into a transitional housing center for the homeless with $12.8 million from a federal grant. The Sacramento Housing and Redevelopment Agency expects to begin operating the homeless center in the spring.

In February, a child care center is expected to open, funded with federal Head Start program money and administered by the Sacramento Education and Training Agency.

In 1996, construction of a $25 million nursing home and clinic will start. The U.S. Department of Veterans Affairs selected Mather to develop next to the base hospital the 120-bed nursing home and 100-bed clinic.

"When we talk about reuse, we mean it," said Cathy Dizon, a legal assistant with Yim, Okun & Watson, a firm that specializes in base closure issues and has Sacramento County as one of its clients.

Said Anne Moore of the Housing and Redevelopment Agency: "We're in effect creating a new town out there."

Leonard said the two biggest parts of the reuse plan are major parcels that eventually will be deeded by the Air Force to Sacramento County – the 2,800-acre airfield-industrial site and a 1,400-acre regional park.

He said final lease documents won't be signed until disputes over utilities and environmental issues are resolved, possibly early next year.

After long-term leases are signed with the Air Force, the county then will execute a lease with Airborne Express, which is ready to break ground on a $3.5 million air freight facility on the flight line, Leonard said.

"Once that happens, we expect the other air cargo operations – Emory, DHL and UPS – at Metro Airport to relocate to Mather," he said. "Airborne Express is not going to start construction until they can be assured they'll have electricity and phone service. That's why we've got to get the utilities issue resolved."

Roy Murray of the Air Force Base Conversion Agency acknowledged that much of Mather's antiquated infrastructure and utilities are not in the best of shape.

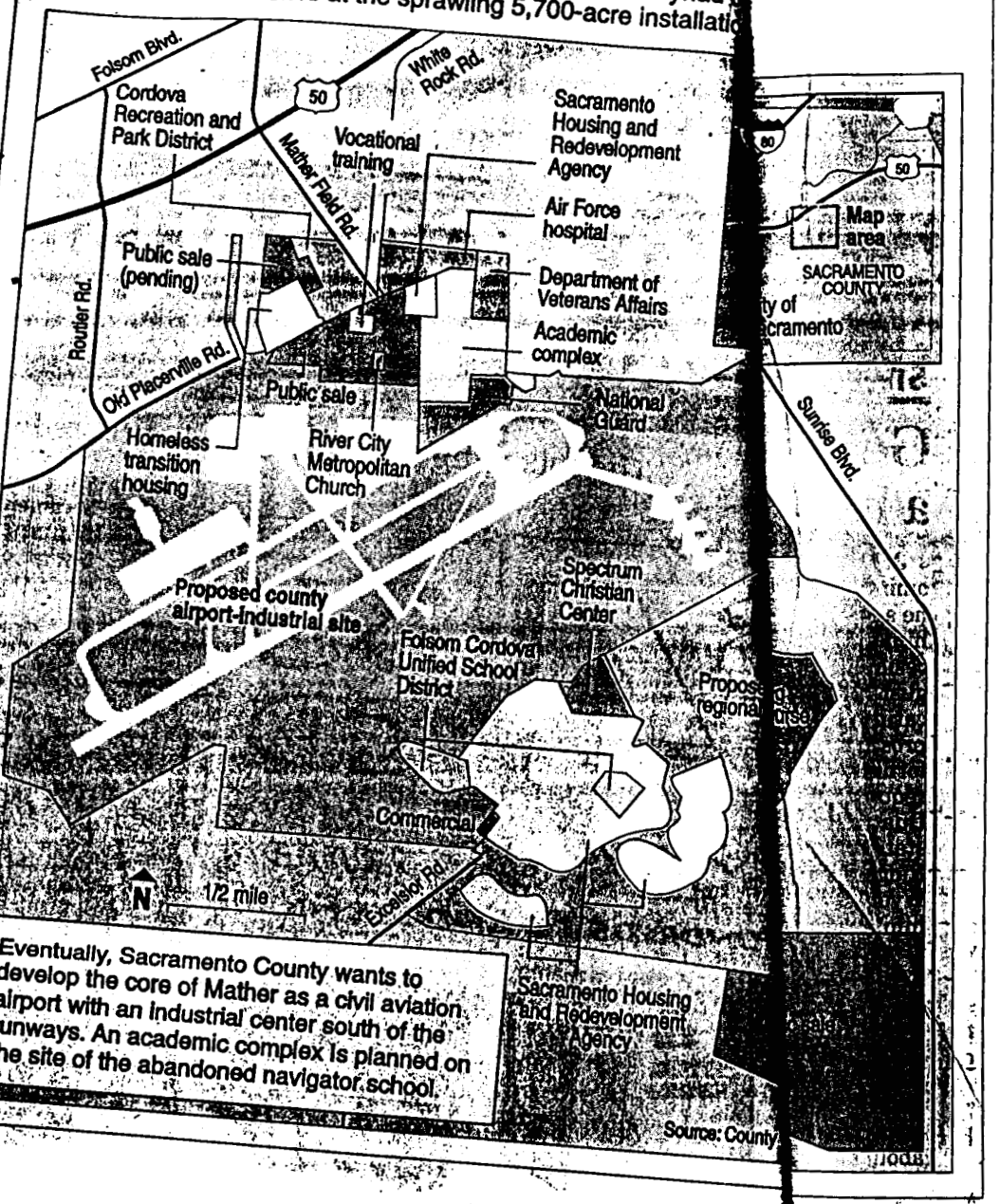
"They are in reasonable to good shape," Murray said. "Are they working now? Yes. The question is, how much longer will they continue to work? Some are 30 years old."

Don Nielsen, CEO of the Rancho Cordova Chamber of Commerce, said he thinks most of the roadblocks to commercial development have been removed.

Continued

Developing Mather

More than 900 people already work full time jobs in a myriad of activities at various sites at the sprawling 5,700-acre installation



Eventually, Sacramento County wants to develop the core of Mather as a civil aviation airport with an industrial center south of the runways. An academic complex is planned on the site of the abandoned navigator school.

Source: County

e graphic/Steve Johnson

APPEARED IN MINI-CLIPS

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Pentagon Chief Backs Off 1995 Base-Closing Goal

Facing Stiff Resistance From the Military

By ERIC SCHMITT
Special to The New York Times

WASHINGTON, Jan. 26 — Facing resistance from the military services, Defense Secretary William J. Perry today backtracked from a top Pentagon goal and said that the round of base closings this year — which had been expected to be the largest of four — would be smaller than anticipated.

In a speech to the United States Conference of Mayors, Mr. Perry said that fewer bases would be ordered closed than in 1993 because "in previous rounds we closed those relatively easy ones." He added, "Everything from now on will be more difficult."

Afterward, Mr. Perry said he scaled back the Pentagon's original goal in recent weeks after the military services told him it would be too difficult and too costly in the near term.

Fewer base closings would also send aftershocks through the Pentagon and the country. While many communities would be spared economic turmoil, fewer closings would also shrink the long-term savings the Pentagon had been counting on to help pay for troop salaries and new weapons after the turn of the century.

Three separate independent commissions, which met in 1988, 1991 and 1993, decided to close 70 major installations. It takes five to six years to shut a base, which in the short term is very costly. Mr. Perry said today that it would cost $15 billion to close and clean up the 70 bases, but by the end the decade the Pentagon would save more than $4 billion a year by doing so.

By Mr. Perry's own admission, the military is keeping open more bases, depots, shipyards and laboratories than the shrinking post-cold war military needs, bleeding money from training and operations accounts. He said today that the overall size of the military had dropped by 33 percent in the past eight years, but that the number of installations had shrunk by only 20 percent.

As recently as last fall, lawmakers and senior Pentagon officials anticipated even larger long-term savings from the closings this year, which some officials predicted would be larger than the three previous rounds combined.

But as the military services began to consider what they would actually close, they dropped hints to Mr. Perry that their original estimates were overly ambitious. The services are to submit their final recommendations to Mr. Perry in the next few weeks.

Mr. Perry does not make the final decision on base closings, but he has tremendous influence. By March 1 he will submit a list of recommended closings to an independent commission, which can add or subtract bases. Under the base closing legislation, Congress would have to approve or reject the panel's decision as a whole later this summer.

The Defense Secretary gave the first signs of pulling back a month ago when he told reporters that he expected the 1995 round of decisions to be "about the size" of the 1993 round, when 35 major bases were ordered closed and 27 others were reduced — and in some cases expanded.

But in recent weeks, the secretaries of the armed services have told Mr. Perry that after the three previous rounds there were no more obvious closings, and their reduced budgets could not pay for the cleanup of a large number of bases. "We're down to the tough choices, and the question of how much money we have for closing and cleanup," said one senior Defense Department official, who spoke on condition of anonymity, as did others in the agency.

Another official said, "In a time when our budget is under considerable pressure, we are constrained by the up-front costs of closing." The official said that even with fewer base closings than planned this year, the military would still reap billions of dollars in long-term savings from the reduced number of bases.

Pentagon officials said today that they might ask Congress to approve legislation authorizing additional base closings in the future, depending on the recommendations the services submit to Mr. Perry.

While the Navy accounted for most of the base closings in 1993, the Army is expected to provide the majority of the closings this year. Army officials had expressed concern about closing many of its bases in the United States before troops from deactivated units in Europe could be reassigned to posts stateside.

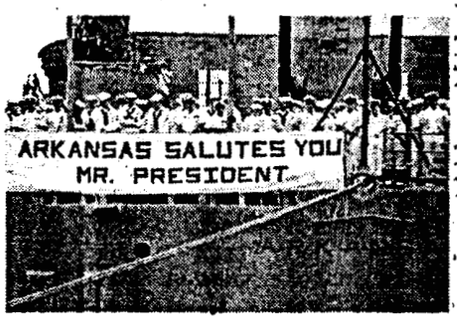
"We're taking very seriously the goal of tailoring the cold-war infrastructure to the post-cold war Army of 495,000 people," said a senior Army official. Its strength is now about 530,000.

Nonetheless, the Army is not expected to recommend closing either Fort Carson, Colo., or Fort Riley, Kan., two large and very expensive bases with larger training areas.

APPEARED IN MINI-CLIPS

Getting to first base

Although the Navy isn't leaving its Bay Area bases for two years, what happens in 1995 will probably decide whether the installations are successfully converted to civilian use.



That's because most of the key planning and funding commitments will have to be made now.

East Bay leaders still must come up with reuse plans for Oak Knoll Naval Hospital and Alameda Naval Air Station. By Jan. 1, 1996, their plans are due to the Department of Defense.

Accommodating requests for homeless housing and coming up with ways to use Navy shops as soon as they close are just two of the thorny issues that have to be resolved.

Political upheaval in Congress already has threatened the planning process, with Republicans sharpening their budget-cutting knives.

Conversion funding is one of the top "wasteful" programs targeted by two key Republican Senate Armed Services Committee members, who want to roll back conversion funding included in the defense budget.

BASE CONVERSION

Carl Anthony, chairman of the East Bay Conversion and Reinvestment Commission, said the East Bay must get funding commitments soon for the Alameda Center for Environmental Technology and Alameda Science City. Alameda Science City, the larger of the two proposals, will require $4.6 million in defense planning dollars.

Anthony is counting on Rep. Ron Dellums, D-Oakland, for help in Washington, even though Dellums recently lost his chairmanship of the House Armed Services Committee. "Dellums has a record of not trashing the Republicans when he could have. I think he can still get what we need for conversion," said Anthony.

Staff writer Kathleen Kirkwood

Oakland Trib 1/1/95

APPEARED IN MINI-CLIPS

12

'Mr. McClellan' quietly, forcefully defends base

By Steve Gibson Sac. Bee
Bee Staff Writer 1/3/95

Sacramento Mayor Joe Serna Jr. calls him "Mr. McClellan."

Bob Bell, president of the Sacramento Area Commerce and Trade Organization, describes him as "an exceptional leader" in the fight to keep McClellan Air Force Base open.

And Gordon Schaber, dean emeritus of McGeorge School of Law, characterizes him as the community's "single most effective supporter of McClellan."

They're all talking about the same person: Tom Eres.

Tom who?

Though active in Sacramento civic affairs for two decades, Thomas William Eres is hardly a household name.

Now completing a stint as president of the Sacramento Metropolitan Chamber of Commerce, the 50-year-old lawyer usually maintains a low profile, preferring to work behind the scenes.

But Serna and others on the McClellan task force say the base couldn't have been kept off the 1993 base-closing list without Eres' expertise.

And as this year's Defense Base Closure and Realignment Commission gears up for another round of base closings, Eres is again "point man" in the fight to save the Sacramento Air Logistics Center at McClellan, one of the largest industrial employers in Northern California with 14,800 jobs and an annual payroll of $516 million.

Those who have seen him work say few could do a better job.

On trips to Washington to discuss McClellan's future, Eres is "completely at ease" talking with military and civilian leaders at the Pentagon, said county Supervisor Roger Dickinson.

"Tom has an outstanding sense of strategy and tactics and a highly developed sense of diplomacy," Dickinson said.

Judy Ann Miller met frequently with Eres and other Sacramento leaders while serving as assistant secretary of the Air Force for installations during the 1993 round of base closings.

"He effectively articulates the case for McClellan," said Miller, now a special assistant to Gov. Pete Wilson.

Of course, Eres was not alone in that effort – and won't be in coming months. Serna joined him. So did two Sacramento congressmen, Democrats Vic Fazio and Bob Matsui. This year, they also will be joined by three other area congressmen – Republicans Richard Pombo, John Doolittle and Wally Herger. Republican Assemblywoman Barbara Alby also is working with them.

Later this week, the Air Force and other services will send to Defense Secretary William Perry a list of bases they want closed. If history is any indicator, Perry will include most of those bases on the list he sends to the base-closing panel March 1.

In April, the commission will start regional hearings and visits to bases on Perry's "hit list."

Nothing is certain until the final decision is made the last week of June.

In 1993, McClellan was on the Air Force's list of recommended closures. Then-Defense Secretary Les Aspin removed McClellan, but the base-closing panel put it back on. At the last minute, after a furious lobbying effort by Eres and the rest of Sacramento's contingent, McClellan was removed from the commission's list.

Since then, Eres and others have made several trips to the nation's capitol, meeting with Pentagon officials and staff members at the base-closing commission.

During the next few days, the initial base "hit list" is expected to be leaked "and people will get very anxious," Eres said last week.

Between now and June, Eres and the rest of McClellan's supporters will continue to take their case to the Pentagon and the base-closing panel.

Continued

Community groups in Sacramento will be constantly briefed.

"The key to this is to always try to keep on the same sheet of music, and try to make everybody part of the process," Eres said.

Eres' interest in military issues comes naturally. For the past 29 years, he has been a member of the California Army National Guard. Now a colonel, he devotes part of his time as legal counsel at Guard headquarters.

The Sacramento native lives in Arden Oaks, is married and has four children. He's a graduate of El Camino High School, the University of Redlands and McGeorge School of Law.

A lawyer, Eres specializes in business and government transactions. He is a senior partner in Sacramento with Nossaman, Guthner, Knox & Elliott, a Los Angeles-based firm with offices in five cities.

Active on State Bar committees, Eres is a past president of the Sacramento County Bar Association. He is on the University of the Pacific Board of Regents and is a director of the Sacramento Make-A-Wish Foundation.

Urbane, droll and self-effacing, Eres is known for his motivational and organizational skills. He rarely raises his voice.

Maj. Gen. John F. Phillips, senior officer at McClellan, calls Eres a "consummate leader and team builder. He brings to the table a rare combination of knowledge, eloquence and charisma."

"He is a deceptively laid back person," said one of his friends, advertising executive Jean Runyon. "But he has a tremendous amount of energy and never seems to be in a hurry."

At 6 feet, 5 inches tall and 230 pounds, he cuts an imposing figure. Though a Republican, he works closely with Democrats Serna, Dickinson, Fazio and Matsui.

"It's a bipartisan effort," Serna said of the fight for McClellan. "Tom gets along well with all of us. The important thing here is to save McClellan. A lot of stereotypes fall by the wayside when you're working side by side."

Runyon says some people want Eres to seek public office. As for Eres, he laughs and says, "That's not my style."

His style, it seems, is to work very hard behind the scenes.

"I know it sounds almost Pollyanna, but I've always felt you really can't be a sideliner," Eres said. "You may not be successful, but at least you can rest at night and know that you gave it a shot."

Army of wildlife volunteers

More than 3,000 volunteers donated 326,000 hours to protecting wildlife, improving recreational trails and cleaning up campgrounds in California in 1994, the U.S. Bureau of Land Management reported.

The effort to help public lands was valued at about $3.5 million and the number of volunteer hours totaled about 80,000 more than in 1993, the bureau said.

One of the highlights of the volunteer efforts included Cache Creek, in portions of Yolo, Lake and Colusa counties. More than 400 volunteers gave about 5,000 hours to constructing a wildlife viewing platform, building picnic tables, clearing hiking trails and stabilizing an archaeological site.

– Bee staff, news services

Sac. Bee 1/3/95

Furor over Florida cougars

LAKE CITY, Fla. – When one of Russell Davis' calves was found dead in late October, state officials blamed it on barbed wire. He insisted it had been attacked by a Texas cougar.

When another calf died a month later, Davis says the state reluctantly admitted cougars – released into the area by the state – were the culprits.

Now Davis and about 250 others have signed a petition saying their livestock still is being attacked and they want the cats taken away.

State officials released 19 cougars in north Florida in 1993 to determine whether the endangered Florida panther, which they believe once lived in the region, could survive there.

1/3/95 – Bee news services

Document Separator

Jerrdle – See info on HPA, Long Beach, NLC, SAAD. –JK

California BASE CLOSURE NEWS

OCTOBER 1994

McKinney Homeless Assistance Act Reform amendments to the Stewart B. McKinney Homeless Assistance Act passed the U.S. Congress in the closing hours of the 103rd Congress. Governor Wilson personally sought the help of Senators Dole and Mitchell, and base closure communities around the country contacted their congressional representatives. Reforming the McKinney Act was a key recommendation of the California Military Base Reuse Task Force Report.

The reform measure exempts closing military bases from the McKinney Act and, instead, requires homeless representatives to file their applications with the local community. "These important decisions that communities are forced to make as a result of federal defense cuts should be determined by local citizens," the Governor said. "The community must work together to address homeless needs, along with economic development and other local priorities—not the federal government."

The amended McKinney Act applies to all future base closures; communities affected by previous closures may apply to DOD within 60 days of enactment to employ the new provisions. Both HUD and HHS are directed to halt processing of any McKinney transactions for 60 days. Local base redevelopment authorities have 9 months to prepare a reuse plan for the base, which would include meeting the needs of the homeless based upon the need for homeless assistance in the community affected by the base closure. Any properties conveyed for the purpose of assisting the homeless shall revert to the local reuse authority at such time as they cease to be used for homeless assistance. If HHS has approved a homeless application prior to enactment of the reformed McKinney Act, the local base redevelopment authority may offer equivalent property elsewhere on or off the base, subject to approval by HHS.

Norton Air Force Base The Air Force has accepted the Inland Valley Development Agency's (IVDA) bid of $52 million to purchase 575 acres at Norton Air Force Base under the "economic development conveyance" provision in the Pryor Amendment, requiring only the signature of the Secretary of the Air Force. A negotiated sale would have required a review by the U.S. House of Representative's Committee on Government Operation. IVDA will pay $52 million, the appraised market value, over 15 years, without interest. The Air Force will receive 40% of the lease and deed income from the property, until the $52 million total is reached. By avoiding a down payment, IVDA can focus on improving roads, sewers, utilities and buildings at the base. IVDA is negotiating with Cal-Tai, a group of Taiwanese investors, who want to build a $350 million world trade center. As part of this project, IVDA is applying for designation as an international trade zone.

George Air Force Base The Victor Valley Economic Development Authority (VVEDA) is negotiating with the Air Force for an "economic development conveyance" at George Air Force Base, similar to the one negotiated at Norton Air Force Base.

The California Public Utilities Commission (CPUC) has approved Southern California Edison's request to supply power to, and to bill directly, a church at George Air Force Base which has been transferred to a local congregation. The CPUC examined the signed agreement between the Air Force and the church, and has allowed Edison to install a meter at the church, billing the church directly, even though Edison does not own the distribution line to the church. Every month, Edison will adjust the base's energy consumption by deducting from it the energy consumption of

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EDITOR'S NOTE

Once again, Californians are rewriting the rules—this time in the area of military base closures. The large number of base closure "laboratories" in the state, combined with a barrier-breaking environment, have resulted in new approaches to the complex issues of federal property transfer and base reuse. In order to facilitate an exchange of information, and as a follow-up to our "Status of Base Reuse Efforts," the Office of Planning and Research is considering ways to develop a communications network among base closure communities. Any ideas you would like to share with others in the state, who are facing base closure challenges, can be included in future newsletters by calling Heather Wheeler at 916-322-3170.

the church, including a factor to compensate the military, on a flat percentage basis, for transformer and line losses. The church has signed an "Absolving Service Agreement," in which it receives service on a temporary basis. Edison cannot be held responsible for discontinuing service, should the military take an action which would make service impossible. (CPUC Resolution E-3386, 9-15-94)

Hunters Point The City and County of San Francisco and the State Lands Commission (SLC) met recently to review conceptual reuse plans for Hunters Point as they relate to the State's "public trust" interests in the property. They have tentatively concluded that the City's draft plans are substantially consistent with protection and enhancement of the public trust values in the property. The City and SLC staff are optimistic that the City's plans provide an opportunity to resolve potential conflicts through exchange, leases for trust purposes, and interim leasing for non-trust purposes. Both parties are continuing to work together toward an expeditious settlement. A final settlement would result in a signed agreement requiring the approval of the State Lands Commission. A signed agreement could be submitted to the Court for a "confirmatory judgment," in order to satisfy any title company requirements.

In another matter, in 1990, the California Public Utilities Commission (CPUC) approved an action involving this base. Due to the uncertainty of future line configuration at the base, PG&E requested a waiver from the CPUC rule requiring underground construction of electric distribution facilities. The CPUC allowed PG&E to build a temporary overhead distribution system at Hunters Point Naval Shipyard. PG&E agreed to install an overhead electric distribution system at a cost of $600,000, in return for the Navy's 10-year guarantee of minimum revenue from Shipyard customers. The contract between the Navy and PG&E states that when an underground distribution system is eventually constructed, the Navy is obligated to pay the costs or to terminate service and pay termination charges up to $758,000. (Res. E-3196 August 8, 1990)

Long Beach Naval Station The McKinney Homeless Act screening process at Long Beach Naval Station has been a difficult issue at four of the five parcels that make up the Naval Station. One of these parcels, the hospital site, together with an adjoining city-owned property, had been designated in the City's reuse plan as a retail center. A number of large retail firms have indicated an interest in this location. The first McKinney screening process for this parcel resulted in no expression of interest, but the second McKinney screening resulted in two applications from homeless providers. Recently, HHS disapproved both applications.

At the Savannah/Cabrillo parcel, two hundred housing units on 26 acres were previously transferred to HHS for a homeless project sponsored by Christian Outreach Appeal (COA). However, COA lost its financial backing when it lost its partner, the Los Angeles Mission. HHS has now disqualified COA.

At the Taper Avenue housing site, Turner Technical Institute requested property under the McKinney Act. Subsequently, HUD declared two-thirds of the site unsuitable for housing due to the proximity of fuel tanks. HHS determined that the character of the site had changed, and the application of Turner Technical was no longer valid.

Naval Training Center, San Diego The Navy has requested 120 acres of the 510 acres at the Naval Training Center, San Diego for military housing construction. A shortage of affordable housing has led the Navy to reconsider the largest parcel outside the airport noise confine area suitable for housing. The Navy has asked the Reuse Planning Committee for support, and will only proceed if the Committee supports the proposal.

The first vision workshop for NTC San Diego will occur on November 5. This will be the first time all the ideas and visions from the reuse subcommittees are brought together. A workshop covering the larger San Diego area has already taken place.

Sacramento Army Depot Packard Bell Electronics is moving its headquarters and computer assembly operation to the Depot, replacing its earthquake-damaged Chatsworth plant. Operations at the Depot are scheduled to begin in January 1995. Even though the site has not yet been officially transferred from the Army to the city, Sacramento offered the firm a 20-year lease for 1.8 million square feet on 210 acres. The city is confident that the Army will move up its plans for transferring the 485-acre depot, initially scheduled for 1997, to as early as November 1. The city has agreed to lend Packard Bell up to $26 million, which will be used to refurbish the property and for moving expenses. The firm could add 3,000 jobs and an $80 million payroll to the area's economy. In addition, Packard Bell suppliers and others who will want to be near the company are expected to provide 2,500 jobs with payrolls of $40-60 million.

Governor Wilson signed legislation on September 23, creating an enterprise zone at the Sacramento Army Depot.

CONTINUED ▶

Enterprise zone designation allows Packard Bell to secure up to $5 million in tax credits. SB344 (Greene) allows businesses operating within the zone to qualify for tax incentives including:

- sales and use tax credits against earned income
- 40% business expense deduction for property
- five year hiring tax credit
- 100% net operating loss deduction
- net interest deduction

Castle Air Force Base On October 26, nearly sixty different state, federal, and private sector agencies will join together at Castle's Community Center to provide information on career and educational opportunities available to Castle civilian and military employees, as well as their family members. There will be group presentations on educational and career interests, and individual counseling sessions. California C.A.R.E.S. is a program specifically designed for all those affected by base closure.

CEQA Guidelines At its August 26, 1994 Base Closure workshop in Sacramento, the Office of Planning and Research released *CEQA, NEPA, and Base Closure: Recipes for Streamlining Environmental Review*, an advisory paper examining the parallel requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) relative to military base closure and reuse. This paper offers suggestions about how to prepare a joint EIS/EIR which will meet the requirements of both Acts. In addition, for those situations where preparing a joint document is impractical, the paper outlines strategies for local governments to use which take full advantage of the environmental work already completed by the military under NEPA. Copies of the paper are available from the Office of Planning and Research, 1400 Tenth Street, Room 150, Sacramento, CA 95814. For more information, call (916) 322-3170.

DFAS Centers The Defense Finance and Accounting Service (DFAS) facility at Norton Air Force Base was scheduled to open this month with a contingent of 25-40 people. Eventually, 750 jobs were expected. However, DOD has just announced "a delay until 1996 because of unexpected design and construction costs." An advance team determined that the substantial upgrade costs for the DFAS structure at Norton would require a congressional appropriation. Last May, DOD announced that four California military bases, out of twenty bases chosen, had been selected as future sites for DFAS centers. The California sites selected were: Norton Air Force Base, Oakland Naval Supply Center, Fort Ord, and a site not yet determined in San Diego.

BRAC 1995 Judy Ann Miller, Assistant to the Governor and Director, Office of Military Base Retention in the Office of Planning and Research, is developing a strategy to support the continuation of California's vital military installations, as they face review by the 1995 Base Realignment and Closure Commission. Ms. Miller has spent the last ten years in the Pentagon, most recently serving as the acting assistant secretary of the Air Force for Manpower, Reserve Affairs, Installations and Environment. In the next few weeks, Ms. Miller will be contacting California communities that have operating bases.

Deirdre- FYI

-JK

10/31

Cheating on Base Closings

New York Times

10/18/94

Six years ago, in a stroke of political enlightenment, Congress created a new process for shutting unneeded military bases. It assigned an independent commission the unpleasant business of picking bases to close. Congress can overrule the commission's entire list, but has not done so. The concept seemed flawless; the execution less so.

Three commissions — in 1989, 1991 and 1993 — have recommended closing more than 100 installations. Various members of Congress have done battle for bases in their communities. Some have even gone to court. In the end the commissions' findings have been adopted. But that does not mean that all the bases have actually been shut down.

Business Executives for National Security, which tracks Pentagon programs, has now analyzed what actually happens after a base is slated for closing. In most cases, the closing has proceeded according to plan, but in some cases it has been derailed — by a change of plans at the Pentagon, or by other Government agencies that grabbed the land for unnecessary and expensive expansion, always with the willing support of local politicians who did not want bases closed in the first place.

The most prominent example is the Presidio in San Francisco. Sixth Army headquarters, based there, was to be transferred to Fort Carson in Colorado: instead it is staying put in reduced facilities and the rest of the base has been made a national park. In Texas, closing Carswell Air Force Base was going to save more than $156 million by 1997; instead, according to the report, the Government has spent $200 million rebuilding it for the Navy, and $197 million per year to operate it.

The Pentagon challenges the report's assertion that 26 bases that were supposed to be closed remain open. But the exact numbers matter less than the essential point that the system needs tightening to guarantee that closed bases actually do shut down. The report says the principal offenders are military reserve and guard units, and the Pentagon's finance and accounting centers, which have seized on the availability of free land to create new installations for themselves.

It makes sense to convert redundant military installations into bases or offices for other purposes, so long as the function is necessary. Indeed, Federal law gives other government agencies first call on these properties. But the business group's analysis is persuasive evidence that some bases are being kept open just because they are there. It recommends amending the law with a specific legal definition to make it clear that "closing" means closing, not staying open with a new role unless that role is fully justified.

Given Congress's distaste for closing any Federal office, it may be hard to get new legislation. That is unfortunate, because the leakage undermines a rational, non-political process that is a credit to Congress itself.

APPEARED IN MINI-CLIPS

Document Separator

Air Force Base Disposal Agency

Air Force Base Disposal Process Review Meeting

MITRE

15-16 June 1993
Rosslyn, VA

Air Force Base Disposal Objectives

- Minimize disposal costs by securing reuse quickly
  - Reduce O & M costs
  - Realize profits from sales
- Accommodate the needs of the community
  - Coordinate reuse with community plans
  - Support interim leases
  - Consider no-cost transfers
- Expedite environmental restoration to facilitate property transfer

Sources: Excerpted from former AFBDA/DR testimony to Base Closure and Realignment Commission, 3/29/93 and AFBDA Fact Sheet 6R-1, 3/1/93

Community Planning Goals

- Begin reuse planning the moment closure becomes final
- Form an effective reuse organization; empower a local authority
- Ensure public participation and develop regional consensus
- Conceive a reuse plan that is:
  - Comprehensive (covers entire base)
  - Diverse
  - Practical and achievable
- Work closely with Air Force and other Federal agencies; lobby for assistance, not opposition

Source: Excerpted from *Base Closure and Reuse: 24 Case Studies*, Business Executives for National Security, April 1993

OSD Disposal Goals and Objectives

- Maximize economic development and reinvestment after base closure by promoting timely, productive cleanup and reuse of closing bases

- Work with States, local communities and citizen groups to achieve a balance between the need to ensure the protection of human health and the environment and the need to minimize the impact on the community by facilitating the timely reuse of the installations

Source: Excerpted from Under Secretary of Defense Memorandum on Strategy for Economic Transition and Base Closure, 3 June 1993

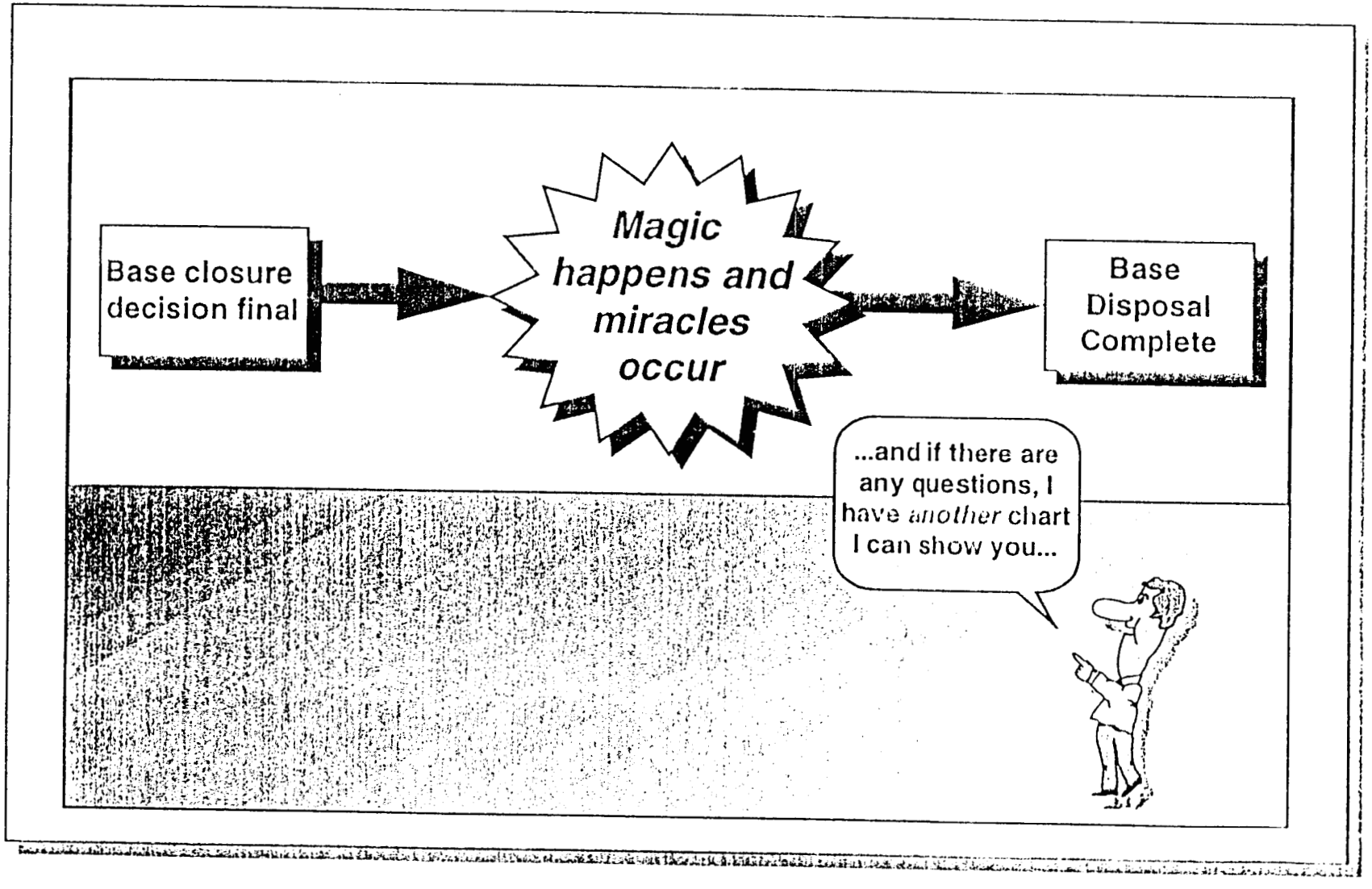
OSD Disposal Goals and Objectives (Concluded)

Coordinate cleanup and reuse efforts

- Cease operations more quickly, in conjunction with local community plans, and make base facilities available for early reuse
- Improve and accelerate environmental cleanup
- Connect cleanup to the planned reuse
- Resolve indemnification of future recipients of DoD property
- Consider the tradeoffs between DoD needs and local community needs

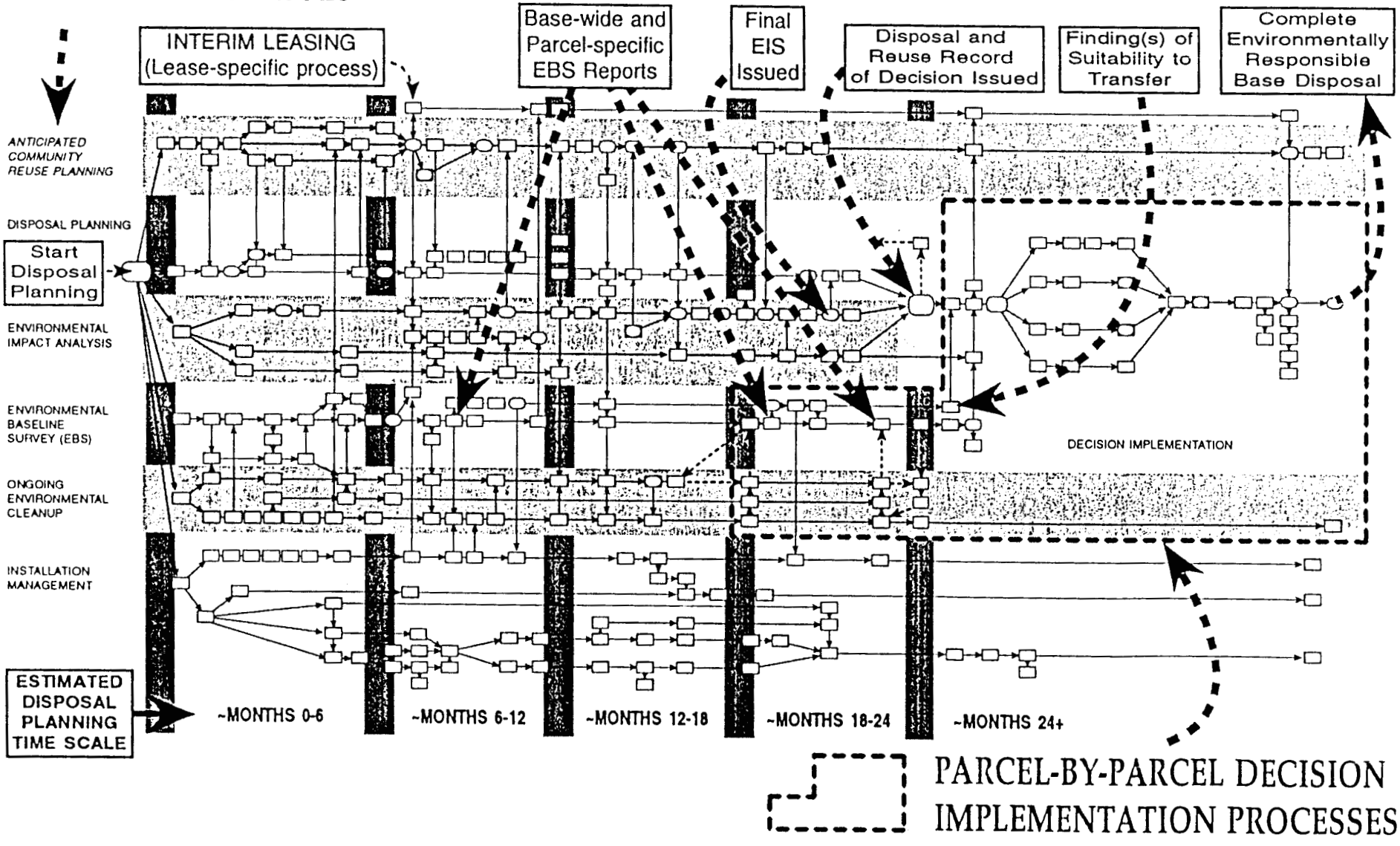
Source: Excerpted from Under Secretary of Defense Memorandum on Strategy for Economic Transition and Base Closure, 3 June 1993

At the First Presentation of the *Simplified* Base Disposal Process...

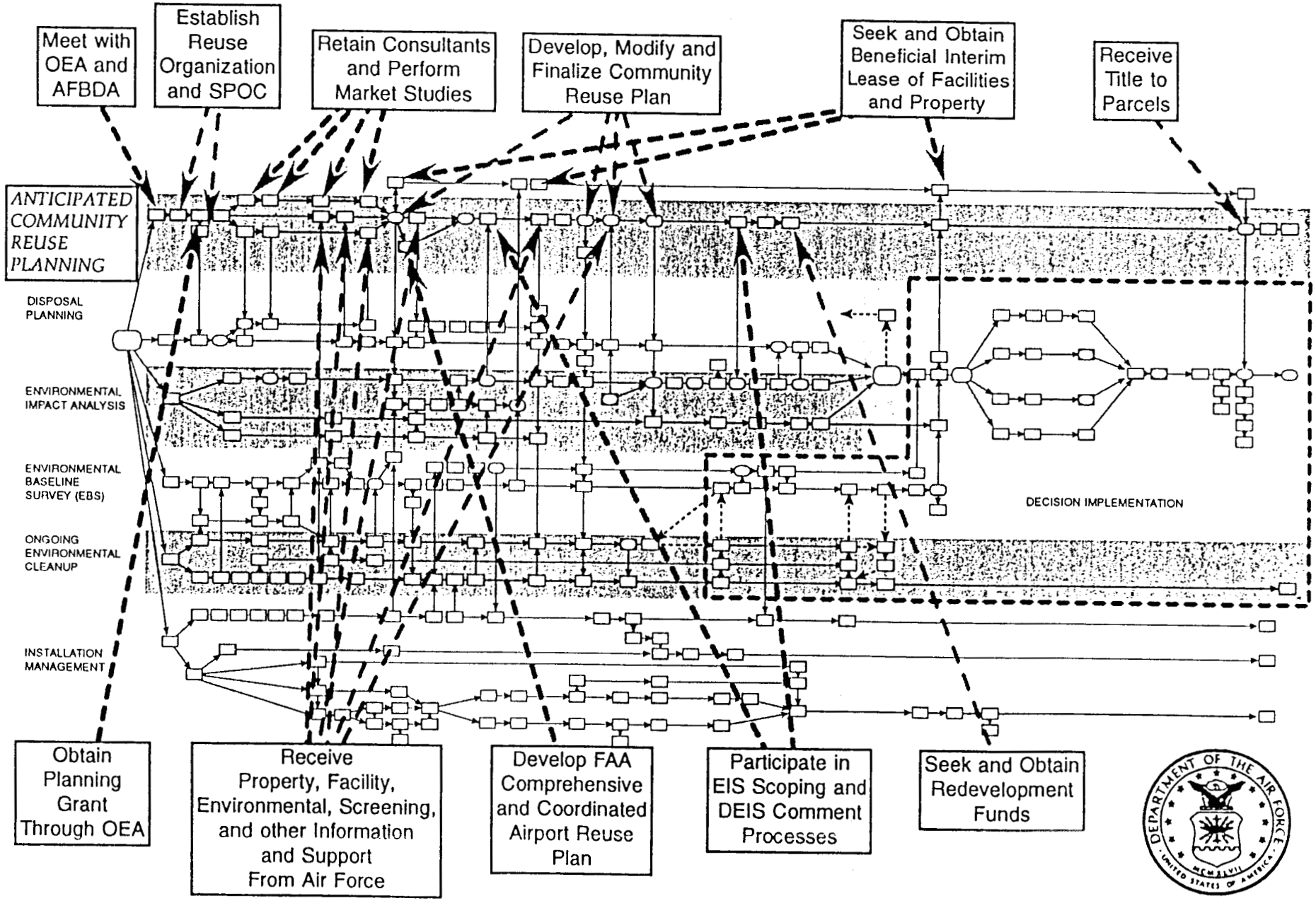


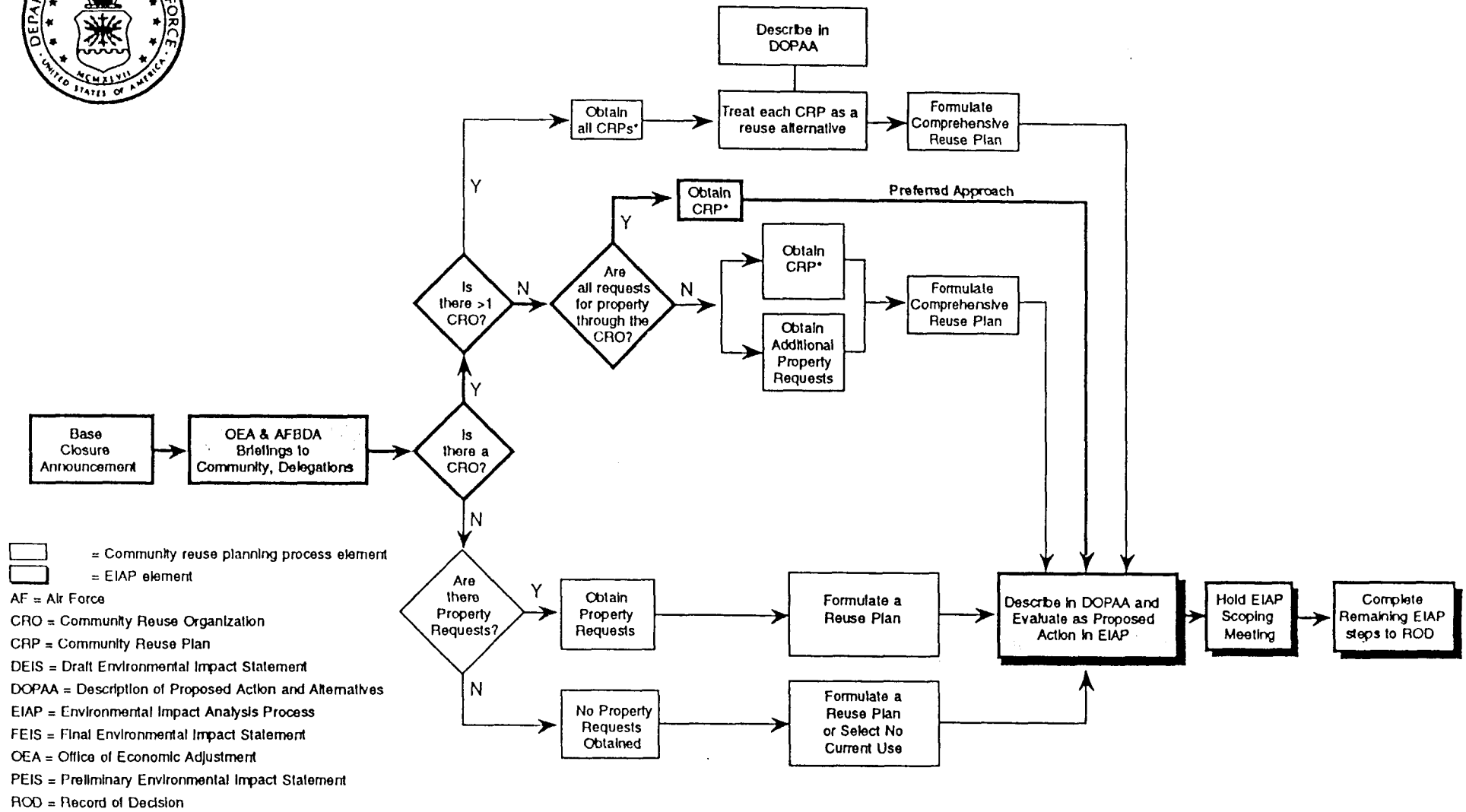
MITRE

Air Force Base Disposal Process Flow Chart Roadmap



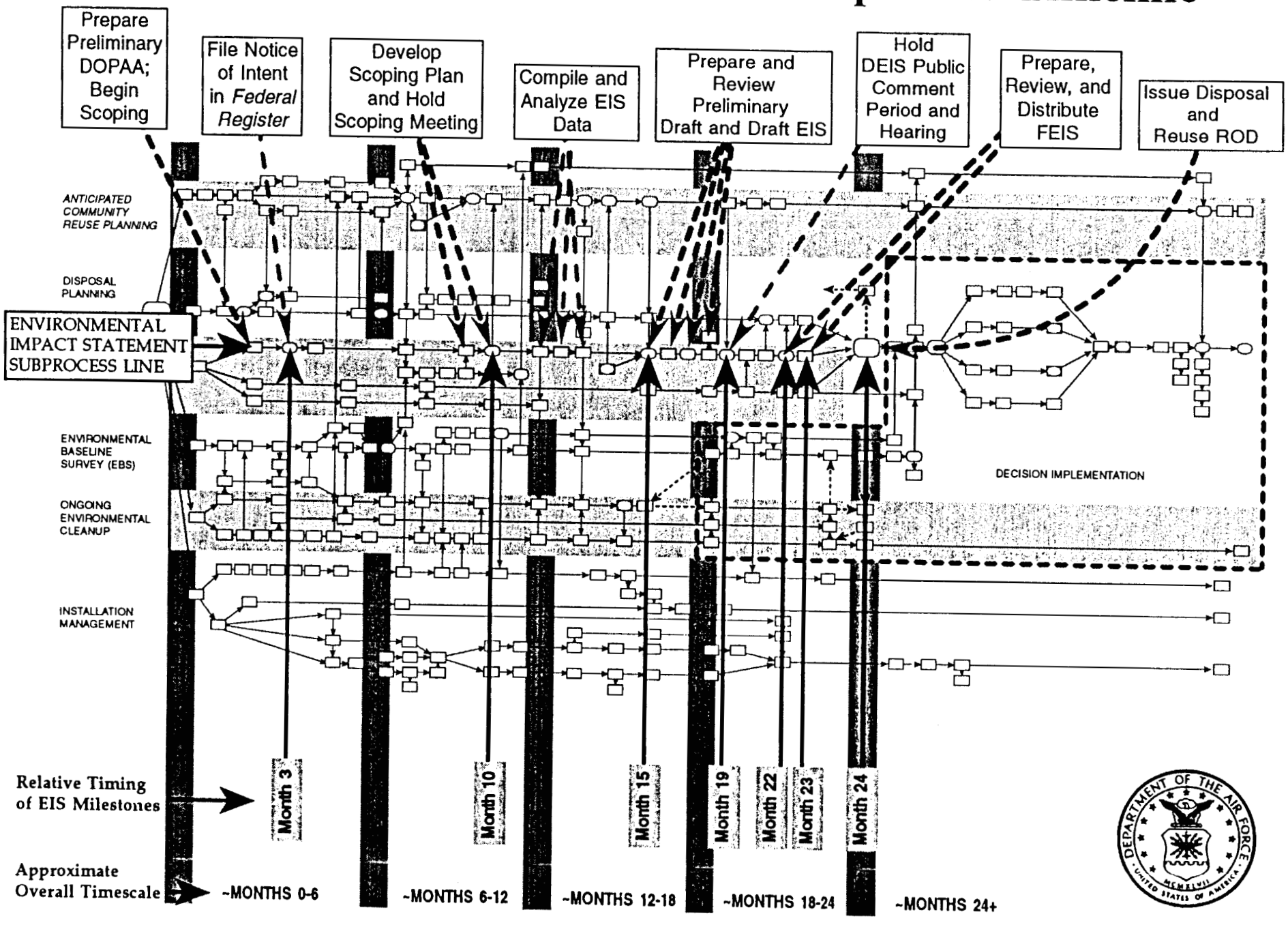
Anticipated Community Reuse Planning Process Highlights



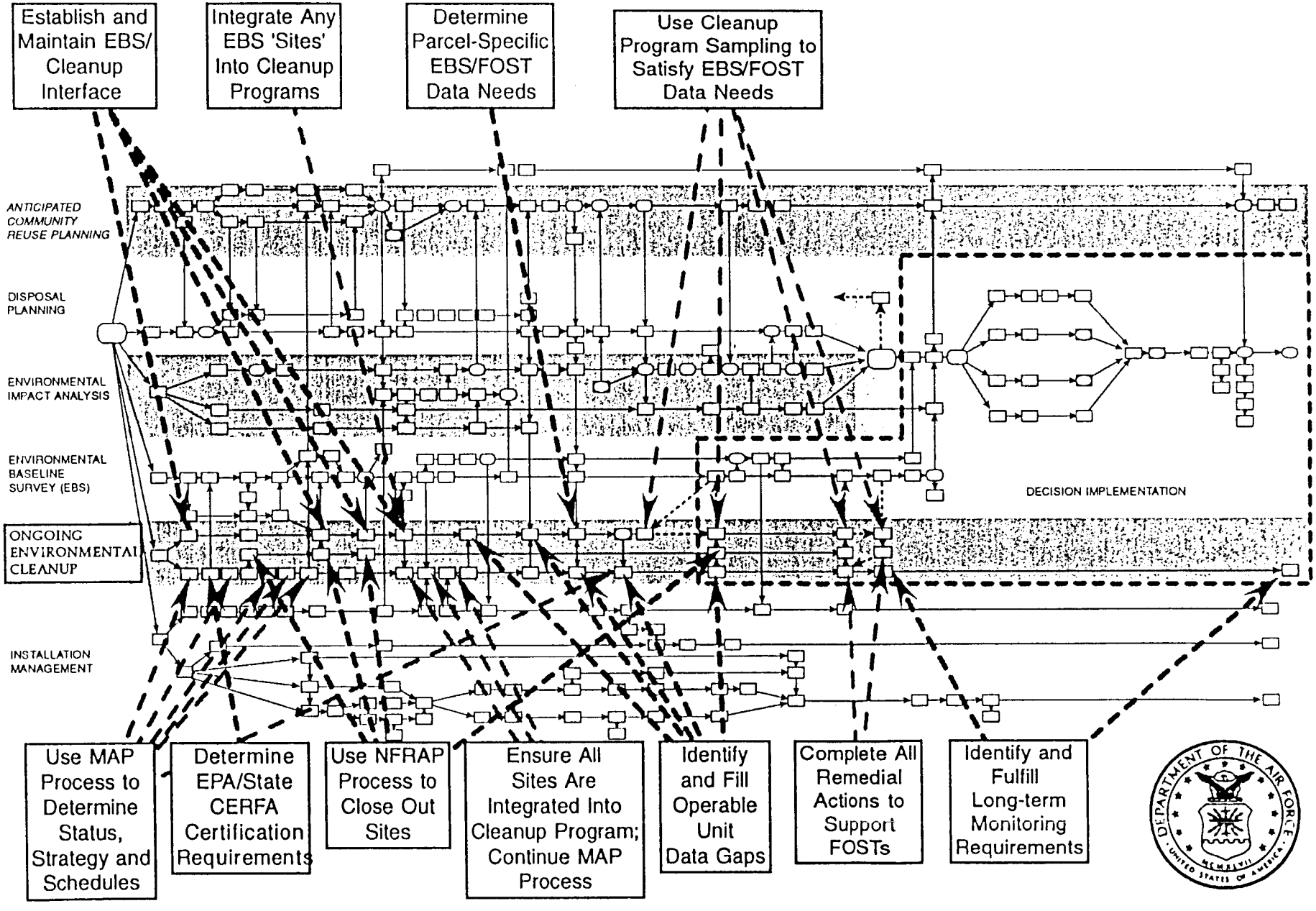


ANTICIPATED COMMUNITY REUSE PLANNING PROCESS DECISION TREE: PREFERRED APPROACH (SHADED) AND CONTINGENCIES

Environmental Impact Statement Subprocess Timeline



Environmental Cleanup Process Highlights



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REGION 6 APPROACH

December 21, 1994

MEMORANDUM

Subject: Response Actions at Federal Facilities

TO: Kathleen Johnson, Region 9
Lucy McCrillis, OSWER
Bob Carr, OSWER
Jon Johnston, Region 4

FROM: David Neleigh, Region 6

As requested in the Federal Facilities Leadership Council call on December 13, I have outlined the way Region 6 handles response actions at Federal facilities.

1. Facility on NPL and not a RCRA facility -
All response actions are handled under CERCLA.

2. Facility on NPL and a RCRA facility -
All response actions are handled under CERCLA, except for RCRA regulated units and RCRA post closure units. The RCRA units are handled by the appropriate RCRA authority, this is normally the State; however, in a few cases it may be the Region.

it permit must address all solid waste units — not just regulated units

It is not always easy to determine which units are RCRA. We have one facility where a large number of wastewater sumps were included in the FFA and the State has subsequently determined that some of them should have been RCRA units. The facility and State are still trying to determine which units should have been reported as RCRA units, when that is done, we will make unit by unit determinations with the State.

3. Facility not on the NPL and a RCRA facility -
All response actions are handled under a RCRA/HSWA permit or 3008(h) order.

In many instances the facility will claim that they are performing the response actions under CERCLA; however, we are firm in the determination that the action will be under RCRA

4. Facility not on NPL and not a RCRA facility -
The actions are handled by the State under their authority.

The level of EPA involvement at these facilities is very limited, even if it appears that they may someday be

added to the NPL. The level of State involvement varies greatly depending on the resources available. If it is a Department of Defense facility they will claim to be doing the actions under CERCLA; however, the action does not normally appear to fully comply with the NCP.

There has been some discussion of the impact of the Rocky Mountain Arsenal decision on NPL facilities that have RCRA units. We are under the understanding that the unit in question was a RCRA post closure unit. We have always expected the states would manage these units under RCRA.

With regard to the CERCLA permit exemption for on-site response actions, we are of the opinion that this exemption does not apply to non-NPL facilities. ?! !

If you have any questions please feel free to call me at (214)665-6785 or Stan Hitt at (214)665-6735.

Deirdre — See also

(1) Enforcement Actions Under RCRA and CERCLA at Federal Facilities, OSWER Directive 9992.0 (January 26, 1988)

(2) EPA Listing Policy For Federal Facilities (extensive RCRA/CERCLA discussion) 54 Fed Reg 10520 (March 13, 1989)

REGION 9 RCRA/CERCLA LANGUAGE

propriation be inadequate in any year to meet the total Army CERCLA implementation requirements, the DOD shall employ and the Army shall follow a standardized DOD prioritization process which allocates that year's appropriations in a manner which maximizes the protection of human health and the environment. A standardized DOD prioritization model shall be developed and utilized with the assistance of EPA and the states.

16. EXEMPTIONS

16.1 The obligation of the Army to comply with the provisions of this Agreement may be relieved by:

(a) A Presidential order of exemption issued pursuant to the provisions of CERCLA section 120(j)(1), 42 U.S.C. § 9620(j)(1), or RCRA section 6001, 42 U.S.C. § 6961; or

Typo: words omitted

(b) The order of an appropriate court.

16.2 The State agencies reserve any statutory right they may have to challenge any Presidential Order relieving the Army of its obligations to comply with this Agreement.

17. STATUTORY COMPLIANCE/RCRA-CERCLA INTEGRATION

be deemed to

17.1 The Parties intend to integrate the Army's CERCLA response obligations and RCRA corrective action obligations which relate to the release(s) of hazardous substances, hazardous wastes, pollutants or contaminants covered by this Agreement into this comprehensive Agreement. Therefore, the Parties intend that activities covered by this Agreement will achieve compliance with CERCLA, 42 U.S.C. §§ 9601 et seq.; to satisfy the corrective action requirements of RCRA section 3004(u) and (v), 42 U.S.C. § 6924(u) and (v), for a RCRA permit, and RCRA section 3008(h), 42 U.S.C. § 6928(h), for interim status facilities; and to meet or exceed all applicable or relevant and appropriate federal and State laws and regulations, to the extent required by CERCLA section 121, 42 U.S.C. § 9621.

17.2 Based upon the foregoing, the Parties intend that any remedial action selected, implemented and completed under this Agreement will be protective of human health and the environment such that remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA (i.e., no further corrective action shall be required). The Parties agree that with respect to releases of hazardous waste covered by this Agreement, RCRA shall be considered an applicable or relevant and appropriate requirement pursuant to CERCLA section 121, 42 U.S.C. § 9621.

17.3 The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided for in CERCLA and the NCP. The Parties recognize that ongoing activities outside the scope of this Agreement at Fort Ord may require the issuance of permits under federal and State laws. This Agreement does not affect the requirements, if any, to obtain such permits. However, if a permit is issued to the Army for ongoing hazardous waste management activities at the Site, the issuing party shall reference and incorporate in a permit condition any appropriate provision, including appropriate schedules (and the provision for extension of such schedules), of this Agreement into such permit. The Parties intend that any judicial review of any permit condition which references this Agreement shall, to the extent authorized by law, only be reviewed under the provisions of CERCLA.

18. PROJECT MANAGERS

18.1 On or before the effective date of this Agreement, EPA, the Army, DHS and RWQCB shall each designate a Project Manager and an alternate (each hereinafter referred to as Project Manager), for the purpose of overseeing the implementation of this Agreement. The Project Managers shall be responsible on a daily basis for assuring proper implementation of the RI/FS and the RD/RA in accordance with the terms of the Agreement. In addition to the formal notice provisions set forth in Section 21 (Notification), to the maximum extent possible, communications among the Army, EPA, DHS and RWQCB on all documents, including reports, comments, and other correspondence concerning the activities performed pursuant to this Agreement, shall be directed through the Project Managers.

18.2 The Army, EPA, DHS and RWQCB may change their respective Project Managers. The other Parties shall be notified orally within five (5) days of the change. Written confirmation shall follow within seven (7) days of the notification.

18.3 The Project Managers shall meet to discuss progress as described in Subsection 7.5. Although the Army has ultimate responsibility for meeting its respective deadlines or schedules, the Project Managers shall assist in this effort by consolidating the review of primary and secondary documents whenever possible, and by scheduling progress meetings to review reports, evaluate the performance of environmental monitoring at the Site, review RI/FS or RD/RA progress, discuss target dates for elements of the RI/FS to be conducted in the following one hundred and eighty (180) days, resolve disputes, and adjust deadlines or schedules. At least one week prior to each scheduled progress meeting, the Army will provide to the other Parties a draft agenda and summary of the status of the work subject to this Agreement. Unless the

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Deirdre — This is a chart I developed for a presentation. Call me to discuss. Carmen

Relationship Between CERCLA, RCRA and State Law At Federal Facilities

I. NPL Federal Facilities

A. EPA RCRA -- CERCLA/RCRA integration can be addressed in FFA. Can also defer to ARARs process because EPA has ultimate remedy selection authority (see CERCLA section 120(e)(4)).

B. State RCRA -- CERCLA 120(a)(4) not applicable. No decision by EPA re state authority to bring independent enforcement action.[1]

C. Non-RCRA State Law -- applies only through ARARs process. CERCLA 120(a)(4) not applicable.

II. Non-NPL Federal Facilities

A. EPA RCRA -- 120(a)(4) not applicable. No EPA remedy selection role under CERCLA 120. Pits federal agency's CERCLA authority under E.O. 12580 against EPA RCRA authority. EPA has argued that EPA can bring RCRA enforcement action. EPA will not allow federal agency to thwart RCRA corrective action by commencing CERCLA action. But how to distinguish state RCRA? State has stronger argument for independent enforcement action based on 120(a)(4). How to distinguish state RCRA at NPL federal facilities? How to distinguish other state environmental enforcement actions at NPL federal facilities?

B. State RCRA -- CERCLA 120(a)(4) applicable. No decision by EPA re state authority to bring independent enforcement action.[2]

C. Non-RCRA State Law -- CERCLA 120(a)(4) applicable. No decision by EPA re state authority to bring independent enforcement action.

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[1]But note that the Tenth Circuit held in United States v. Colorado, 990 F.2d 1565 (10th Cir. 1993), that a RCRA authorized State could bring a RCRA enforcement action notwithstanding the pendency of a CERCLA cleanup.

[2]But note that Colorado v. Army, 707 F.Supp. 1562 (D. Colo. 1989), held that a RCRA authorized state could bring a RCRA enforcement action notwithstanding the pendency of a CERCLA cleanup based on, inter alia, CERCLA 120(a)(4).

FAX TRANSMISSION

TO	NAME :	DEIRDRE NURRE	
	ORGANIZATION :	BASE CLOSURE	
	MAIL STOP :		
	FAX NO. :	Area Code 703	Number 696-0550
	VERIFICATION NO.:	Area Code	Number
FROM	NAME :	CARMEN GONZALEZ Office of Regional Counsel U.S. Environmental Protection Agency - Region IX 75 Hawthorne Street San Francisco, CA 94105	
	BRANCH :	HAZ WASTE	
	MAIL STOP :	RC-3-1	
	PHONE NO. :	Area Code 415	Number 744-1400
	FAX NO. :	Area Code 415	Number 744-1041 FTS 484-1041
	VERIFICATION NO.:	Area Code 415	Number
DATE	3/21/95		
# OF PAGES	(Including Cover) 6		
SUBJECT	RCRA/CERCLA INTERFACE ~ CLOSING BASES		
NOTE	PLEASE CALL ME TO DISCUSS. I GET A BUSY SIGNAL WHENEVER I DIAL THE # YOU GAVE ME		

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Defense Environmental Restoration Program

Annual Report to Congress for Fiscal Year 1992

April 1993

Printed on Recycled, Recyclable Paper

The ***Defense Environmental Restoration Program Annual Report to Congress*** *is available from the National Technical Information Service (NTIS) at (800) 553-6847 or (703) 487-4650. When ordering, refer to document number ADA 262300. NTIS can provide delivery within two days via overnight courier service for an additional fee. This report also can be obtained from the Defense Technical Information Center at (703) 274-7633. In addition, annual reports for fiscal years 1986 through 1991 are available under the following document numbers:*

ADA 198012 (1986)	*ADA 230263 (1989)*
ADA 198424 (1987)	*ADA 231362 (1990)*
ADA 230262 (1988)	*ADA 244196 (1991)*

Defense Environmental Restoration Program

Annual Report to Congress for Fiscal Year 1992

April 1993

Foreword

The Department of Defense (DoD) is pleased to provide the Congress with this report on the accomplishments of the Defense Environmental Restoration Program (DERP) for Fiscal Year (FY) 1992. The Department's goal is to demonstrate prudent environmental stewardship on its lands by cleaning up and restoring them in a timely and fiscally responsible manner. We will accomplish this by using innovative approaches and sound business practices in an open partnership with the public and the regulatory agencies.

During the past year, the Department continued its steady progress throughout the DERP, completing characterization efforts at an additional number of sites and expanding the number of cleanups in progress. The most significant achievements this past year dealt with putting management improvements in place to assist in future program execution. These efforts involved:

- Accelerating remediation and transfer of property at installations scheduled for closure
- Developing strategies for accelerating cleanups at all installations.

DoD is continuing its efforts to accelerate cleanups, particularly at bases scheduled for closure. During the past year, we developed and implemented procedures to transfer and reuse property at these bases. Since last summer, the Department has been working with the U.S. Environmental Protection Agency (EPA) and the State of California to develop procedures for identifying and transferring uncontaminated portions of a closed installation. This has resulted in a procedure whereby DoD will prepare a Finding of Suitability to Transfer (FOST) document with concurrence by EPA and the states. This will assist in the timely transfer of properties to the community for beneficial reuse.

At conferences held in Sacramento, California, and in Boston, Massachusetts, DoD, EPA and state representatives developed extensive plans for accelerating the cleanup process. These include installation-wide, joint planning efforts to establish cleanup standards on the basis of reasonable and anticipated use of property; concurrent review of documents by DoD and regulatory authorities; compressed document review schedules and improved contracting procedures.

During this past year, we have laid a firm groundwork that will assist us in expediting our future cleanups. We look forward to working with Congress, the regulators and the public to ensure our past waste disposal sites are promptly remediated in a fiscally responsible manner.

David J. Berteau
Principal Deputy
Assistant Secretary of Defense
(Production and Logistics)

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The Defense Environmental Restoration Program

The Defense Environmental Restoration Program (DERP) was established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense (DoD) installations. The program currently includes:

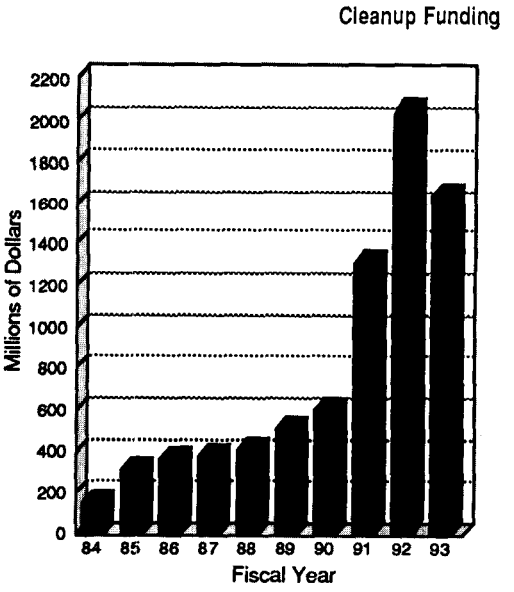
- The Installation Restoration Program (IRP), where potential contamination at DoD installations and formerly used properties is investigated and, as necessary, site cleanups are conducted; and

- Other Hazardous Waste (OHW) Operations, through which research, development, and demonstration programs aimed at improving remediation technology and reducing DoD waste generation rates are conducted.

In addition, a small number of Building Demolition and Debris Removal (BDDR) projects were conducted under DERP in fiscal year (FY) 1992. These involved demolishing and removing unsafe buildings and structures at DoD installations and formerly used properties.

DERP is managed centrally by the Office of the Secretary of Defense. Policy direction and oversight of DERP is the responsibility of the Deputy Assistant Secretary of Defense (Environment). The Military Departments (Departments of Army, Navy, Air Force, and the Defense Logistics Agency) are responsible for program implementation.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) provides continuing authority for the Secretary of Defense to carry out this program in consultation with the U.S. Environmental Protection Agency (EPA). Executive Order 12580 on Superfund Implementation, signed by the President on January 23, 1987, assigned responsibility to the Secretary of Defense for carrying out the Department's Environmental Restoration Program within the overall framework of SARA and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The Defense Appropriations Act provides the primary funding for DERP. Funding for restoration work at bases scheduled for closure is provided in the Military Construction Act.



Cleanup funding has grown steadily, from $150 million in FY 1984 to over $2 billion in FY 1992. FY 1992 investments included a supplemental appropriation of $610.2 million for accelerating cleanup. FY 1991 through FY 1993 investments include funds for restoration work at base closure and active military installations.

The Installation Restoration Program

The Installation Restoration Program (IRP) conforms to the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA guidelines are applied in conducting investigation and remediation work in the program.

The initial stage, a **Preliminary Assessment** or **PA**, is an installation-wide study to determine if sites are present that may pose hazards to public health or the environment. Available information is collected on the source, nature, extent, and magnitude of actual and potential hazardous substance releases at sites on the installation. The next step, a **Site Inspection** or **SI**, consists of sampling and analysis to determine the existence of actual site contamination. Information gathered is used to evaluate the site and determine the response action needed. Uncontaminated sites do not proceed to later stages of the IRP process.

Contaminated sites are investigated fully in the **Remedial Investigation/Feasibility Study** or **RI/FS**. The RI may include a variety of site investigative, sampling, and analytical activities to determine the nature, extent, and significance of contamination. The focus of the evaluation is determining the risk to the general population posed by the contamination. Concurrent with these investigations, the FS is conducted to evaluate remedial action alternatives for the site.

After agreement is reached with appropriate EPA and/or state regulatory authorities on how to clean up the site, **Remedial Design/ Remedial Action** or **RD/RA** work begins. During this phase, detailed design plans for the cleanup are prepared and implemented.

A notable exception to this sequence involves Removal Actions and Interim Remedial Actions (IRAs). These actions may be conducted at any time during the IRP to protect public health or control contaminant releases to the environment. Such measures may include providing alternate water supplies to local residents, removing concentrated sources of contaminants, or constructing structures to prevent the spread of contamination.

Each step in the IRP process is thoroughly documented in reports available to the general public. These reports are normally made available to the public by placing them in the Administrative Record and/or Information Repository. In addition, public meetings and hearings are also held at various times during the cleanup process to further facilitate public participation.

The National Priorities List (NPL)

EPA established a Hazard Ranking System (HRS) for evaluating contaminated sites based on the potential hazard posed to public health and the environment. In 1991, a revised Hazard Ranking System (HRS2) was adopted by EPA. The application of this system, using PA/SI data, generates a score for each site evaluated. The score is computed based on factors such as the amount and toxicity of the contaminants present, their potential mobility in the environment, the availability of pathways for human exposure, and the proximity of population centers to the site.

The NPL is a compilation of sites scoring 28.5 or higher under HRS. Such sites are first proposed for NPL listing. Following a public comment period, proposed NPL sites may be listed final on the NPL or may be deleted from consideration.

IRP Priorities

DoD is continuing to carry out its policy of assigning highest priority to sites that present the greatest potential threat to human health and the environment. Top priority is assigned to:

- Removal of imminent threats from past hazardous or toxic substances or ordnance and explosive waste;
- Interim and stabilization measures to prevent sites from deteriorating and achieve life cycle cost savings;
- RI/FS at sites either listed or proposed for the NPL and RD/RAs necessary to comply with SARA.

DoD is developing the Defense Priority Model (DPM) to assist in ranking sites based on relative risk to human health and the environment. During the RI/FS Phase, sites can be scored using the model. DPM scores may be considered in determining funding priority for remedial action.

About 100 DoD personnel were trained in scoring sites with the DPM. A support network, including a user hotline, is available to assist scorers. DoD site managers applied the DPM to over 230 sites where remedial action was planned for FY 1992. An analysis of the site scores showed that:

- The most common types of sites scored were landfills, spills, and surface impoundments. DoD used on-post landfills and surface impoundments for many decades as a primary method of waste disposal, and now has many of these to remediate. Significantly more landfills were scored this year than last; fewer spill sites were scored. These trends may indicate that most surface contamination (immediate threats) have already been cleaned up, and the department is now addressing more long-term requirements.
- On a scale of 0-100, scores ranged from 1-67. Most sites scored less than 30, which suggests that the majority of DoD sites do not present great risks.
- Ground water is contaminated at most sites (80%) that were scored. This may be because DoD sites are old; contamination has had time to migrate through soil to ground water.

These results give valuable information to DoD managers regarding program trends and also identify areas for focus, e.g., a need for ground water cleanup strategies and technologies.

Base Closures

The Base Closure and Realignment Acts of 1988 (BRAC 1) and 1990 (BRAC 2) resulted in the identification of 120 military bases scheduled for closure and another 62 installations scheduled for realignment. Appendix F of this report identifies those installations scheduled for closure. Considerable investigation and, in certain cases, remediation may be required before properties at closed bases can be transferred from DoD or used for other purposes.

Congress provided $443.5 million during FY 1992 through the DoD Base Closure Account for environmental restoration at bases scheduled for closure. DoD is applying the same remediation methodologies and protocols used at other IRP sites to cleanup efforts at installations scheduled for closure or realignment.

During FY 1992, DoD, in cooperation with EPA and the State of California, reached agreement on procedures for the transfer of uncontaminated land by deed at closing military installations. Under this procedure, DoD, in consultation with EPA or the state, will prepare a Finding of Suitability to Transfer (FOST) document. The document describes the process necessary to identify and document parcels of land that are environmentally suitable for transfer. DoD is continuing to work with the states and EPA to develop procedures for transferring contaminated parcels of land.

Accelerating Cleanup

In addition to the efforts discussed above, DoD organized two conferences, one in Sacramento, California during June of 1992, and another during September of 1992 in Boston, Massachusetts to develop methods for accelerating cleanup progress at closing military installations. DoD, EPA, and state representatives examined the experiences of a number of accelerated cleanup efforts throughout the country. Some of the proposals showing the greatest promise for accelerating progress include installation-wide joint planning efforts, establishing cleanup levels on the basis of existing and reasonably expected use of property, concurrent review of documents by the military and regulators, use of interim remedial actions, initiating the next phase of the CERCLA process while final review of the prior project is underway, and improving contracting procedures.

Total Environmental Restoration Program Contracts

The Army is implementing a program to consolidate cleanup work under a single contract. The program, which is called Total Environmental Restoration Program Contracts (TERCs) would streamline the current process by using a single contractor for all work needed from the initial study phase through the operation and management of the final cleanup. Until now, the Army has used separate contracts for each project phase. The advantage of this new procedure is that it allows contractors to continue working through the transitions between contract phases.

Future Land Use and Cleanup

In a related but separate effort, the Department of the Air Force has contracted with Clean Sites, an Alexandria, Virginia-based nonprofit organization that focuses on waste site remediation problems, to examine how future land use considerations can be integrated into cleanup decisions at Air Force installations. As part of the first phase of the project, the Air Force developed an information matrix that identifies each of the reasonable future uses for a site and the corresponding levels of cleanup required to achieve each use. This information could be developed early in the site cleanup process and expanded to contain technology and cost information for achieving identified future uses. The benefits of using such an approach could include accelerating cleanup and reducing the cost of site evaluation, improving working relationships with regulators, improving communication with stakeholders, and creating uniform expectations for site cleanup. The second phase of the project will involve implementing the results of the report at two Air Force Bases. The third phase, if the project is successful, would include working with the Air Force to develop training and guidance documents on future land use issues for application to other bases.

Western Governors' Association

In July, 1991, a Memorandum of Understanding (MOU) regarding environmental restoration and waste management in western states was signed among the U.S. Departments of Defense, Interior, and Energy, EPA, and the Western Governors' Association (WGA). The purpose of the MOU was to promote cooperation on expediting waste site cleanups and advance the use of new technologies.

After assessing the alternatives available for addressing Federal facilities cleanup in the west, the WGA and the four federal agencies decided at their October 7, 1992 meeting to recommend the use of pilot projects to test new models for community involvement, regulatory streamlining, and the use of more efficient and effective technologies. The tests will be designed to help assure financial feasibility, insurability, and eventual commercialization of innovative technologies. Pilot projects are expected to be announced in mid 1993 when agreements have been reached and sources of funding identified.

Number of IRP Installations and Sites

The number of installations included in the IRP remained relatively constant. DoD's initial emphasis was to identify industrial facilities with the highest probability for contamination. Efforts expanded yearly to include installations with lower hazard potential. The IRP addresses past contamination. Sites can be identified and cleaned up either under the requirements of SARA or under the requirements of the Resource Recovery and Conservation Act (RCRA). Installation reassessments initiated to satisfy SARA requirements as well as RCRA Corrective Action efforts continued to locate additional smaller sites not previously included in the program.

IRP site counts increased by six percent during FY 1992. This was due to the identification of additional sites through RCRA inspections. At the end of last fiscal year, a total of 18,795 sites at 1,800 installations were included in the IRP.

In October of 1992, EPA added five DoD installations to the NPL. They included:

- Andersen AFB, Guam
- Pearl Harbor Naval Complex, Hawaii
- Yorktown Naval Weapons Station, Virginia
- Dahlgren Naval Surface Warfare Center, Virginia
- Defense Distribution Region Central, Tennessee.

In addition, Concord Naval Weapons Station, California was proposed for listing on the NPL. By the end of FY 1992, 88 DoD installations were final listed on the NPL and six were on the proposed list. Because EPA has listed two NPL locations at each of seven installations, 101 DoD installation listings appear on the NPL. Weldon Springs, Missouri and West Virginia Ordnance NPL Sites are in the FUDS program and are no longer carried in the DoD installation totals.

DoD Supports State Participation Through DSMOA

To facilitate active state participation in the IRP, DoD reimburses the states for technical services up to one percent of Defense Environmental Restoration Account (DERA) and BRAC costs.

The Defense State Memoranda of Agreement (DSMOA) not only address state agency support at NPL sites, but also provide the process for work at non-NPL sites. Along with non-NPL reimbursement, DSMOA provides a process for DoD and the states to resolve technical disputes before judicial remedies are sought. The dispute resolution process is necessary, as most non-NPL work does not require any formal dispute resolution mechanism to accomplish cleanups. The DSMOA also include provisions reflecting the willingness of the state to accept DPM as DoD's method of establishing remedial action priorities among sites in the event of a funding shortfall.

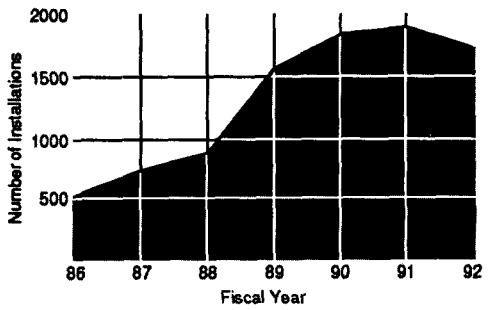
Reimbursement is available through a Cooperative Agreement (CA) to those states that have a signed DSMOA.

States' reporting requirements under CAs are minimal and allow them to transfer their oversight funding between installations. States that have entered the program or have expressed interest in participating in the program by October 1, 1992 are eligible for costs incurred after October 17, 1986 (the date SARA was enacted). Base Realignment and Closure and Defense Logistics Agency Stock Fund installations and Formerly Used Defense Sites are eligible for reimbursement. Formerly Used Defense Sites meeting specific criteria are also included in the program for reimbursement.

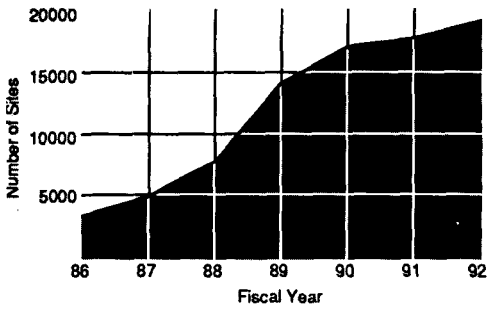
All states and territories have been contacted and encouraged to participate in the DSMOA process. DoD signed 9 DSMOA in FY 1992, bringing the total of signed memoranda to 41. In addition, 9 CAs were completed last year, yielding a total of 35 agreements. Almost $20 million was provided to states in FY 1992 under these CAs to enhance their participation in the IRP process. Appendix D, Table D-2 provides state-by-state DSMOA status.

The progress made in FY 1992 in preparing DSMOA and CAs represents a significant achievement in enhancing cooperation among DoD and state authorities. The establishment of Interagency Agreement (IAG), CA, and DSMOA model language and the training of DoD and state personnel in their development helps provide a nationally consistent process for effective site cleanup.

Number of Installations in the IR Program

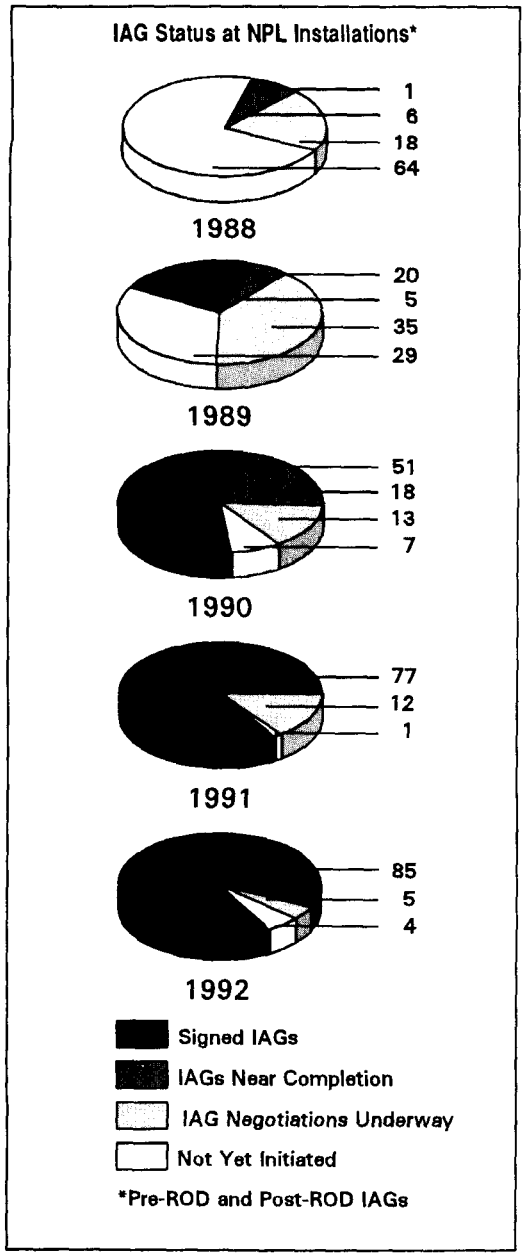


Number of IRP Sites



IAGs Are An Important Step in the Cleanup of NPL Sites

SARA requires that an IAG be reached between EPA and DoD within 180 days after completion of the Record of Decision (ROD) for each NPL-listed facility. The ROD, a public document explaining which cleanup alternatives will be used at an installation, marks the official completion of the RI/FS. (An exception involves interim RODs sometimes used to document agreements concerning Interim Response Actions.) The completed IAG provides a detailed management plan for the effective cleanup of the facility.



The early involvement of EPA and state authorities in preparing the IAG ensures their concurrence and enhances the credibility of the course of action taken by DoD. The IAG also provides a strong management tool for resolving issues rising from overlapping or conflicting jurisdictions.

The Department seeks a cooperative and collaborative ongoing effort with all parties to avoid problems late in the process that could result in costly delays. The early establishment of good working relationships also resolves potentially duplicative and possibly conflicting regulatory requirements governing cleanup, such as those that occur between CERCLA and RCRA. To fully realize these benefits, we are routinely entering into IAGs during the RI/FS phase. These "pre-ROD" IAGs, or Federal Facilities Agreements (FFAs), are amended or attached to the agreement as IRP work progresses and become the IAG required under SARA.

In 1988, the Department and EPA completed negotiation of IAG model language for NPL sites. Subsequent guidance was issued to the Components concerning the state role in the IAG process. Workshops were held with EPA and states to refine site-specific language for the agreements. Training sessions for DoD personnel who will negotiate agreements also were held.

The progress already made is evident from the number of IAGs signed and nearing completion. By the end of FY 1991, IAGs had been signed for 77 DoD installations final-listed on the NPL. By the end of FY 1992, this number grew to 85. In addition, another four IAGs were near completion.

Federal Facility Environmental Restoration Dialogue

DoD is participating in a dialogue on improving the cleanup process at federal facilities. Central issues being discussed are: sharing information with external stakeholders, increasing federal agency/stakeholder consultation during the decisionmaking process, and allocating funds. The dialogue committee has endorsed the concept of site specific advisory boards similar to existing DoD Technical Review Committees (TRCs). These boards provide advice to installation commanders. DoD has established TRCs at almost 200 installations. TRCs are typically comprised of representatives of DoD, regulatory agencies, local interest groups and the community near a site.

Other participants in the dialogue are federal agencies with restoration responsibilities (DOE, DOI, NOAA, NASA), EPA, state agencies and environmental interest groups. The group has established a committee under the Federal Advisory Committee Act, with a goal of developing consensus recommendations for improving stakeholder acceptance and confidence in federal decisionmaking. The Committee expects to issue a report in 1993.

Installation Restoration Program Status

During FY 1992, DoD expanded its efforts to move contaminated sites into the cleanup phases of the IRP. Increased emphasis was placed on moving forward with measures that stabilize sites, such as removing contaminant sources and halting the further spread of ground water plumes, rather than waiting until sites are completely characterized to begin cleanup work. This approach, which is consistent with EPA's Superfund Accelerated Cleanup Model (SACM), is allowing DoD to increase the rate at which human health and environmental risks are reduced while minimizing future IRP costs. This bias for action will increase even more in FY 1993.

The end point for IRP is site closeout (SC). A closed-out site is one where no further actions are considered appropriate and no further response action is planned (NFRAP). NFRAP is a CERCLA term incorporated into the NCP final rule in March 1990. The primary criteria for NFRAP is a determination that the site does not pose a significant threat to public health or the environment. NFRAP decisions can be made at any point in the IRP process, but must be documented and may be reversed if future information reveals that additional remedial activities are warranted. The majority of site closeout decisions are for non-NPL sites. These decisions are made by the Components and then coordinated with the appropriate regulatory agencies.

Installation Restoration Program
Summary of Installations and Sites

Component	Number of Installations	Number of Sites	Number of Active Sites	Sites Where Response is Complete (RC)***	Closed Out Sites (SC)
Army	1,144	10,603	4,216	6,387	5,944
Navy*	290	3,258	2,481	777	615
Air Force	332	4,474	3,191	1,283	1,010
DLA**	34	460	270	190	75
Total	1,800	18,795	10,158	8,637	7,644

*Includes Marine Corps.
**DLA = Defense Logistics Agency.
***Response Complete (RC) is equivalent to the term Closed-Out (CO) in last year's report.

Interim Remedial Actions by Type of Activity
Summary for all IRP Installations

Type of Activity	Interim Actions: Number of Activities (Underway or Complete)	Interim Actions: Number of Installations (Underway or Complete)
Alternate Water Supply/Treatment	122	6
Bioremediation	36	31
Capping	31	18
Drainage Controls	6	5
Fence or Other Site Access Control Measures	54	13
Groundwater Treatment	113	51
In-Situ Soil Treatment	6	6
Incineration	63	5
Long-Term Monitoring	11	9
Other	94	39
Soil Vapor Treatment	10	7
Waste Removal - Drums, Tanks, Bulk Containers	256	109
Waste Removal - Soils	158	88
Total	960	387

To better measure the rate at which cleanup work is progressing, the Department has begun analyzing activities at two additional points prior to site closeout. New site status codes, Response Complete (RC) and Remedy in Place (RIP), are being used to identify sites where cleanup work is far along but formal site closeout has not occurred. In addition to adding these new cleanup codes, DoD began separate tracking of the status of IRAs during FY 1992. The addition of this new information (IRAs, RIP and RC) to our tracking and reporting systems allows a more thorough evaluation of actual cleanup progress. The tracking of IRAs is consistent with EPA's new Superfund Accelerated Cleanup Model (SACM), which emphasizes the taking of early actions to reduce immediate risks to people and the environment. EPA's primary measure of success under SACM will be substantially reducing or eliminating threats to public health and the environment within a short, specified time frame. Early actions, such as IRAs can usually eliminate the majority of risk at contaminated sites.

By the end of FY 1992, responses were considered complete at 46 percent of DoD's sites; site closeout had occurred at nearly 90% all of these sites. Final remedies were in place at another two percent of our sites by the end of FY 1992. A total of 10,158 sites were considered active at the end of the year, that is, they still require additional investigation, close out as no potential threat, and/or cleanup work.

As the table above shows, the Components are using a variety of technologies for interim remedial actions. Of particular note is that the Components are promoting the use of innovative technologies such as bioremediation.

Interim Remedial Action (IRA)
A short-term response action, consistent with a permanent remedy, but not the entire remedy in itself.

Remedy in Place (RIP)
The final RA is functioning properly and performing as designed.

Response Complete (RC)
IRP actions are deemed complete by the DoD and the site is not a threat to public health or the environment.

Site Close-Out (SC)
Response is complete and, if required, concurrence has been received from regulatory agencies.

Installation Restoration Program Status as of September 30, 1992
Summary by Military Service

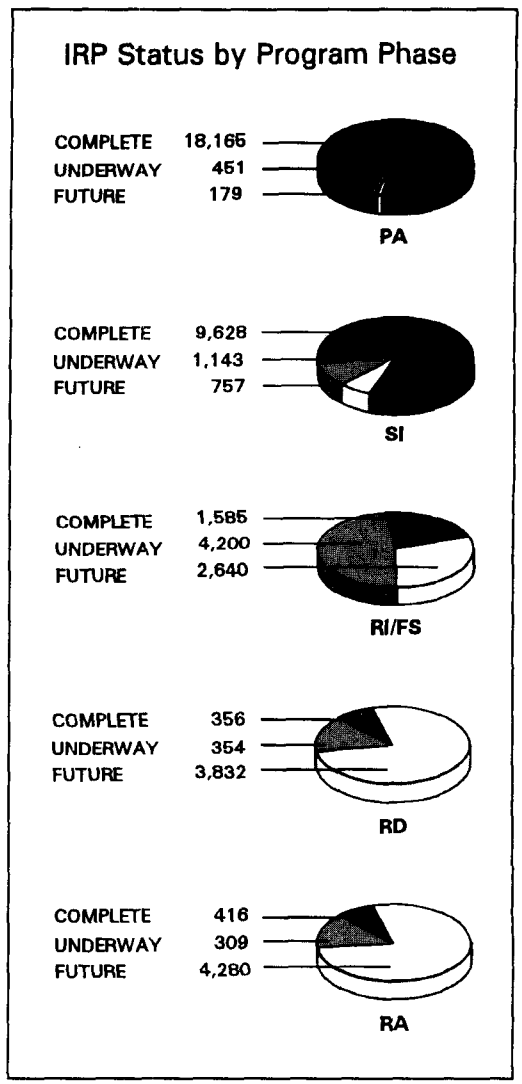
	Number of Sites																					
	PA**				SI**				RI/FS				RD			RA				Total	
	C	U	F	RC	C	U	F	RC	C	U	F	RC	C	U	F	C	U	F	RC	RC	SC
Army	10,508	86	9	4,829	4,594	437	520	1,209	459	1,869	1,213	224	108	146	1,400	159	52	1,342	125	6,387	5,944
Navy*	2,925	226	107	546	1,042	353	130	188	110	872	1,143	12	12	15	1,509	37	35	2,033	31	777	615
Air Force	4,274	138	62	264	3,537	352	106	610	945	1,233	245	295	210	176	659	196	216	684	114	1,283	1,010
DLA	458	1	1	2	455	1	1	155	71	226	39	14	26	17	264	24	6	221	19	190	75
Totals	18,165	451	179	5,641	9,628	1,143	757	2,162	1,585	4,200	2,640	545	356	354	3,832	416	309	4,280	289	8,637	7,644

C = Completed Activity ♦ U = Underway Activity ♦ F = Future Activity ♦ RC = Response Complete ♦ SC = Closeout
*Includes Marine Corps
** Occasionallly, new sites are discovered during the SI or RI/FS phases. Although formal PA or SI documents may not exist for all such sites, the PA and SI phases are normally considered complete when equivalent studies are performed in later phases.

Installation Restoration Program
Summary by Military Service

	IRAs** Number of Sites (Actions)		RIP
	C	U	C
Army	265(352)	129(133)	2
Navy*	126(150)	79(89)	7
Air Force	122(122)	54(54)	51
DLA	55(57)	3(3)	2
Totals	568(681)	265(279)	62

= Completed Activity ♦ U = Underway Activity
*Includes Marine Corps
**Figures in parenthesis refer to number of activities at a specific site, not the number of sites.



IRP Status by Program Phase

Across the Board Progress Registered in All Phases of the IRP

In prior years, we have not separately reported the number of interim and final RAs. Although significant, final RAs represent but a portion of the cleanup work performed by DoD. Because completed IRAs are consistent with and contribute to the final cleanup, an understanding of their status allows a more balanced evaluation of the progress of the IRP.

By the end of FY 1992, 960 interim RAs had been completed or were underway at 387 DoD installations. A majority of these actions were measures that served to stabilize conditions and reduce risks. Activities such as fencing and providing alternate drinking water supplies to reduce risks posed by sites by eliminating exposure to contaminants. Actions such as source removal, capping, and pumping-and-treating of ground water serve to stabilize contaminants at a site by controlling their migration. In keeping with the Department's policy of emphasizing cleanup at the most contaminated sites, almost 56 percent of the interim RAs

completed have been at the 94 Defense installations on or proposed for listing on the NPL.

New IRP Tracking System Improves Ability to Measure Progress

During FY 1992, the Department developed and fielded an improved system for tracking IRP activities across all Components. This system, the Restoration Management Information System (RMIS), takes advantage of advanced relational database management systems that are available, providing rapid access to the detailed information needed to manage IRP activities effectively. However, even more significant is RMIS's ability to track progress towards final cleanup as interim actions are completed.

A majority of the cleanup work completed to date by DoD has been aimed at stabilizing sites that pose a risk to human health and the environment. This work involves Interim Remedial Actions that remove or isolate contaminant sources and halt or reverse the further spread of contamination. However, in the past, the Department has not tracked and reported interim and final remedial actions separately. Using the expanded information fields programmed into RMIS, we now have the capability to track all IRAs taken at a site and to measure progress towards final cleanup incrementally.

In addition, using the flexibility inherent in the new system, information fields will be added as appropriate to respond to future needs.

Solid Progress at NPL Sites

The Department continued to make progress in the evaluation and cleanup of NPL sites in FY 1992. Completed PA activities at listed NPL installations increased from 90 to 94. The number of RI/FSs completed or underway increased from 90 to 94. Further, the number of installations with interim remedial actions or RAs completed or underway went from 86 to 91 in FY 1992. (See the chart on this page.)

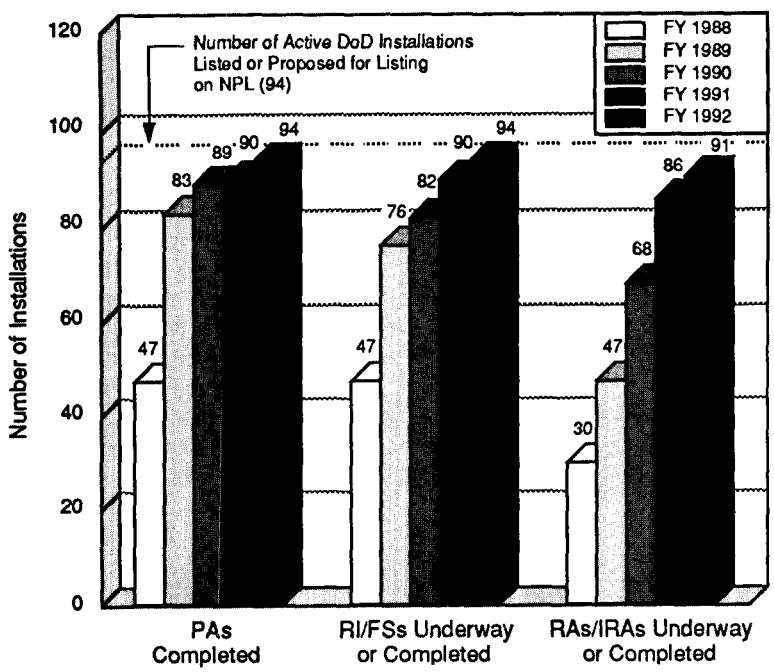
During FY 1992, RODs for at least one Operable Unit (OU)* were completed at 22 installations. This brings to 39 the number of NPL installations with signed RODs.

*An Operable Unit is part of the total cleanup response at an installation. It can be either a separate geographical area of treatment or a separate type of treatment in the same geographic area. It can consist of one or more DoD sites at an installation.

Community Relations in the IRP Program

The Department of Defense emphasizes two-way communication between local communities and DoD Remedial Project Managers (RPMs) responsible for planning and implementing site activities. Public involvement requirements in CERCLA/SARA and the NCP are followed for each phase of the process.

DoD believes that the earlier the public is involved in the process, the sooner their concerns can be incorporated into the planning for remedial response at an installation. Therefore, DoD begins community relations as soon as it is determined that the installation will be going through a Remedial Investigation/ Feasibility Study (RI/FS). The public involvement effort is composed of specialized plans, committees, information dissemination, and meetings which are explained below.

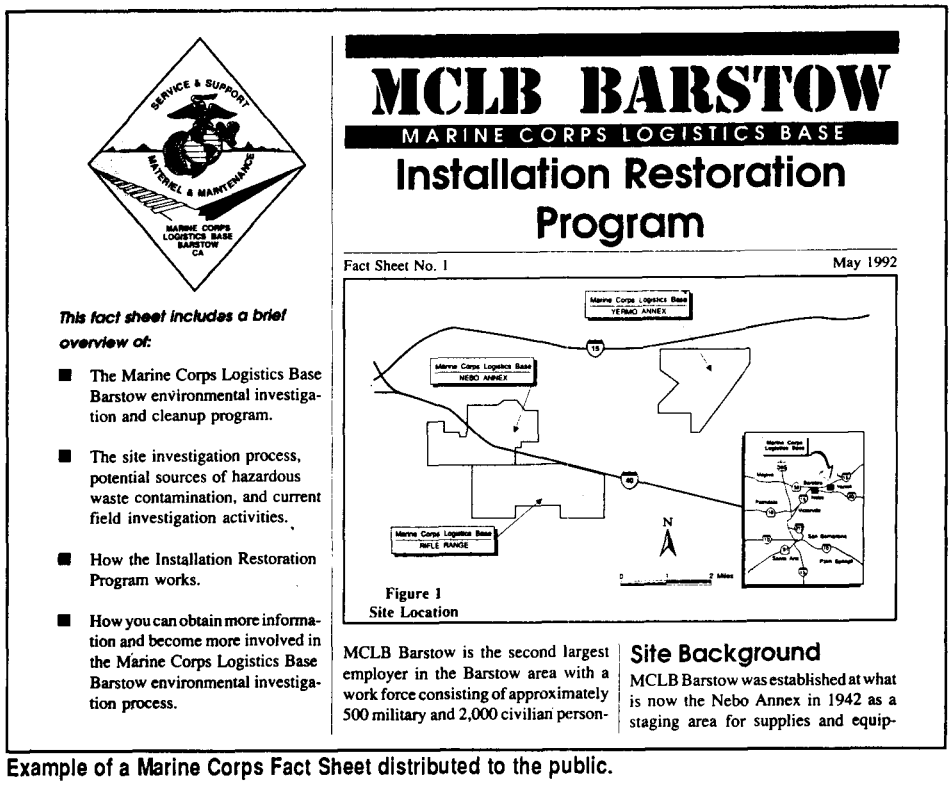


Restoration Progress at DoD NPL Installations as of September 30, 1992

The **Technical Review Committee** (TRC) required by SARA, Section 211, was established for the purpose of reviewing and commenting on an installation's cleanup activities and remedial actions. The TRC offers unique opportunities to gather technical input from all affected parties, including the public. TRCs are established at all NPL sites as early in the process as possible. Local authorities and the public are encouraged to provide representatives with appropriate technical backgrounds. Minutes are prepared by the Component and retained in the administrative record. News releases covering topics covered and decisions made during the meeting are generally prepared for distribution. Some installations hold public meetings following TRCs so that the public can be informed of all on-going progress and actions.

A **Community Relations Plan**, is based on community interviews and includes a description of the installation background, history of community involvement, community relations strategies, a schedule of community relations activities, and a list of contacts (mailing list). It is developed and implemented at all NPL installations. DoD involves Regulatory agencies in the preparation of this plan wherever appropriate.

Normally, an **information repository** is established at or near the site as soon as the installation considers the possibility of undertaking remedial studies. The repository is available to the public, contains site-related documents, and may contain information that is of general interest to the public such as newspaper articles, press releases, and fact sheets. It is maintained by the installation's community relations staff who are also responsible for notifying interested parties of the existence of the information repository.



MCLB BARSTOW

MARINE CORPS LOGISTICS BASE

Installation Restoration Program

Fact Sheet No. 1 May 1992

This fact sheet includes a brief overview of:

- The Marine Corps Logistics Base Barstow environmental investigation and cleanup program.
- The site investigation process, potential sources of hazardous waste contamination, and current field investigation activities.
- How the Installation Restoration Program works.
- How you can obtain more information and become more involved in the Marine Corps Logistics Base Barstow environmental investigation process.

Figure 1
Site Location

MCLB Barstow is the second largest employer in the Barstow area with a work force consisting of approximately 500 military and 2,000 civilian person-

Site Background

MCLB Barstow was established at what is now the Nebo Annex in 1942 as a staging area for supplies and equip-

Example of a Marine Corps Fact Sheet distributed to the public.

An **administrative record**, available to the public, is established at or near the installation when the remedial investigation phase begins. It normally contains documents the lead agency relies upon when selecting a response action and may be in the same location as the information repository.

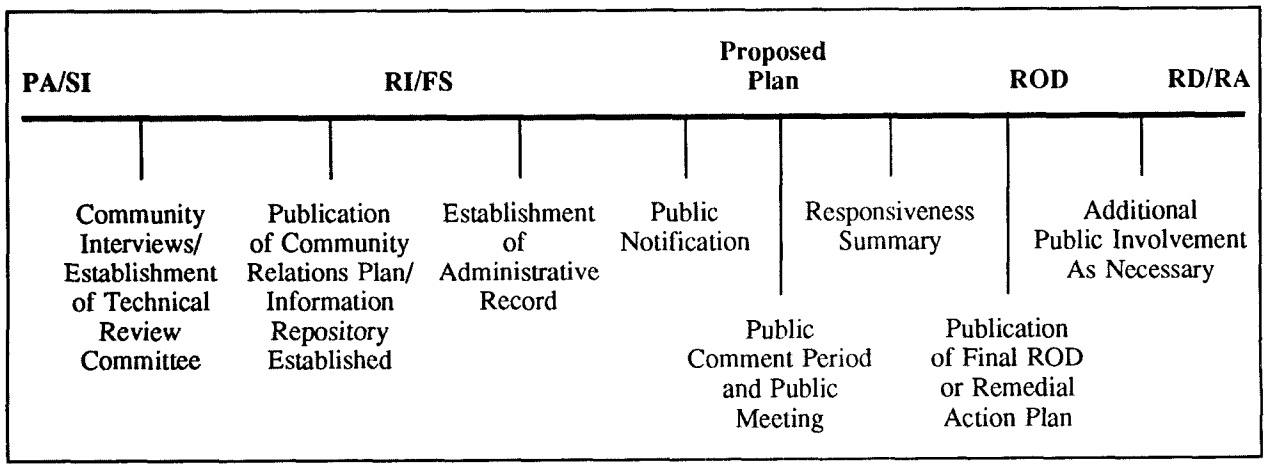
The installation publishes in a local newspaper a notice informing the public of the availability of the RI/FS and identifying the preferred remedy, other alternatives analyzed, community involvement opportunities, the name of the agency point of contact, and the location where the public can review the administrative record.

The public is provided the opportunity, during a minimum 30-day comment period, for submission of oral and written comments on the Proposed Plan and RI/FS. A public meeting to discuss the **proposed plan** should be held during the comment period. A proposed plan briefly discusses the nature and extent of contamination at a site, and the cleanup alternatives considered, including the preferred alternative.

The DoD installation normally prepares a response to significant comments, criticisms, and new data submitted in written or oral form during the comment period. This **responsiveness summary** is attached to the final remedial action plan, record of decision, or other decision document.

Additional public input may be required after the preparation of the responsiveness summary. The DoD installation will compare the final selected remedy with the alternatives described in the RI/FS and proposed plan to determine if any significant changes have occurred. If so, these changes are discussed in the Record of Decision (ROD). In some situations, additional public comment must be solicited. The final remedial action plan is usually published in a major local newspaper and made available for public inspection. If necessary, the Community Relations Plan is revised to account for needs and concerns identified during the remedial

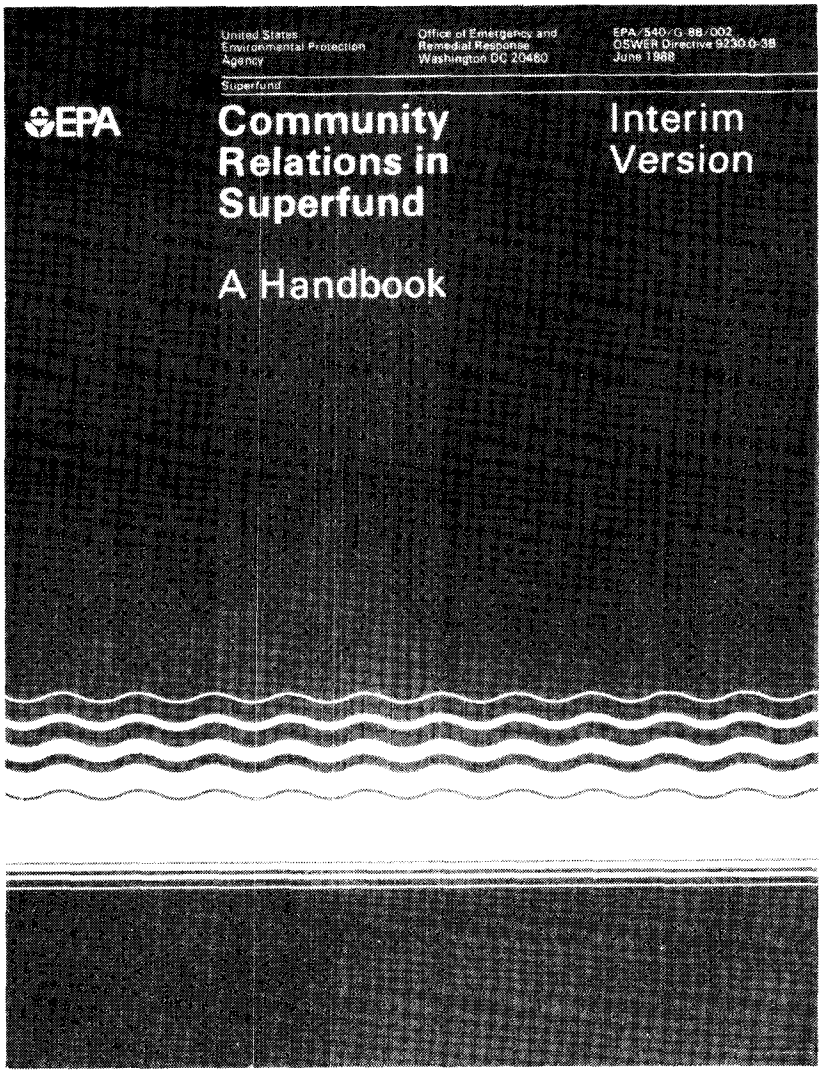
Public Involvement Points in the CERCLA Response Process



design/remedial action (RD/RA) phase. A fact sheet and public briefing is usually made available prior to the initiation of the remedial action. A sample fact sheet is shown on page 11. Information provided will include construction schedules, traffic pattern changes, locations of monitors and plan for providing information. The figure above shows where public involvement occurs within the CERCLA process.

Success Stories Showcase Progress

The flowing discussions of IRP progress among the Components showcase the work underway at a number of our installations. These stories demonstrate the focus on reducing potential threat to public health and the environment through early interim remedial actions. They also show how DoD involves the community through an active community relations program. These showcase stories explain how we are attempting to expedite the site restoration effort by partnering with the public and regulatory agencies to quickly move our sites into and through the cleanup phase of the program.



DoD follows EPA Community Relations Guidance for Superfund

Army IRP Progress

The number of sites included in the Army IRP rose slightly to 10,603 in FY 1992. IRP activities have been completed and no further response actions are planned at 6,387 sites, or over 60 percent of the Army sites in the program.

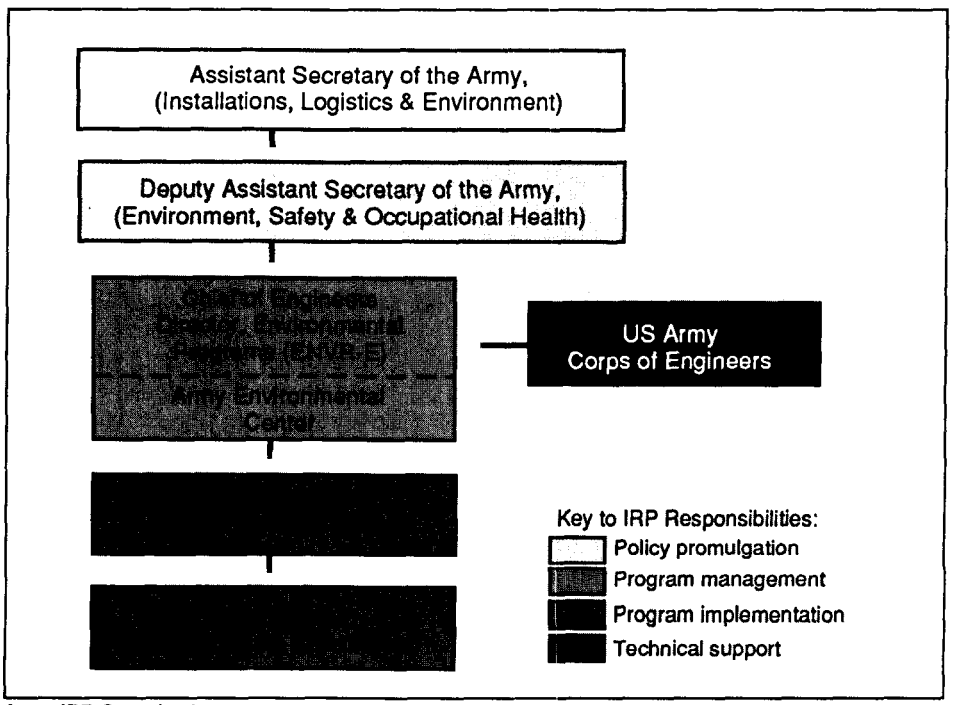
The Army's Installation Restoration and Base Closure Environmental Programs made significant progress in Fiscal Year (FY) 1992. Approximately $385 million (DERA and BRAC funds) was obligated in FY 1992 for the Army's Environmental Restoration projects.

The Army initiated an effort in FY 1992 to review the status of installations in the Army restoration site inventory.

The following types of installations were deleted from the inventory:

- State-owned National Guard Bureau installations;
- Government-owned National Guard Bureau installations with no valid sites;
- Installations included in the FUDS program; and
- Installations which are wholly tenants or other services' installations.

As a result of these deletions, the number of active Army installations decreased from 1,265 in FY 1991 to 1,144 in FY 1992.



Army IRP Organization

During FY 1992, the number of sites where RI/FS work is completed or underway increased from 1,310 to 2,328. Also, of significance are the 485 interim remedial actions/removals and 211 final remedial actions that are completed or underway.

In FY 1992, the Army prepared 40 active sites installation action plans. The action plans targeted high-priority installations and included the identification and verification of all sites of environmental concern. The purpose of the action plans was to identify targets of opportunity for cleanup actions. A program is being implemented by the Army in FY 1993 to begin to accelerate interim removal and remedial actions at certain sites.

Army Measures of Merit at NPL Installations — Records of Decision

Installation/ ROD Title	Description of Remedy	Contaminant(s) of Concern	Initial Quantity/ Concentrations	Cleanup Objective	Current Status
Aberdeen Proving Ground White Phosphorous Burial Area	No action	White Phosphorous			5 Year Relook
Aberdeen Proving Ground Michaelsville Landfill, OU #1	Install new cap, surface water controls and gas venting system	Metals, Organics	Metals; 16-24 ppb Organics; 5-7 ppb	Prevent Contaminant Migration to GW	RD Completed, Cap Construction April 93
Anniston AD Groundwater OU	SE industrial area GW treatment system	VOC/Metals, Phenols		Contaminant Migration Control	Operational since 1990, treats 100,000 gpd (avg)
Fort Lewis Landfill #5	No Action	Solvents, Metals	TCE: < 1 ug/l Manganese: 7.8 ug/l		Long-Term Monitoring
Milan AAP O-Line Ponds, OU #1	GW pump, treat and reinjection	Explosives	20,000-28,000 ppb TNT 15,000-20,000 ppb RDX	10 ppb TNT 10 ppb RDX	RD 35% complete Start construction FY 93
Umatilla AD Washout Lagoons OU	Soil remediation by composting	Explosives	6,000 cubic yds. < = 8% TNT	Reduce Source TNT/RDX of 5 ppb	RD Underway RA 1st qtr FY 94

The Army has 34 listings on the NPL at 30 Army installations. Two installations signed Inter-Agency Agreements (IAG) in FY 1992. The number of Army installations with IAGs remained at 29 since Weldon Springs (MO) and West Virginia Ordnance Works (WV) have been transferred to the FUDS program and are no longer carried in Army installation totals. RI/FS activities are underway, with some individual site completions, at all 30 NPL installations.

Also, in FY 1992, nine Records of Decision (ROD) were signed for cleanup actions at Army NPL installations. Actions agreed to include; incineration of contaminated soils at Alabama Army Ammunition Plant (AL) and Savanna Army Depot Activity (IL), bioremediation of soils at Umatilla Army Depot (OR) and a ground water pump and treat system at Milan Army Ammunition Plant (TN).

The Army has devoted considerable effort to monitoring progress at its NPL installations, in particular. The table above provides examples of measures of merit, Records of Decision, used to demonstrate progress at Army NPL installations.

The following showcase success stories are examples of significant Army IRP project activities conducted in FY 1992. These stories explain in detail cleanup efforts and the progress made in reducing risk to human health and the environment at two major Army installations, Louisiana Army Ammunition Plant (LA) and Twin Cities Army Ammunition Plant (MN). (Appendix B provides additional descriptions of installations on the NPL.)

Twin Cities Army Ammunition Plant, Minnesota

Twin Cities Army Ammunition Plant (TCAAP), Minnesota has conducted numerous interim remedial actions that have significantly reduced risk for nearby residents. Over 320,000 pounds of volatile organic compounds (VOCs) have been removed from contaminated soils and ground water, and 1,400 cubic yards of soils contaminated with PCBs have been excavated and decontaminated. To date, 3.4 billion gallons of ground water have been successfully treated.

Background

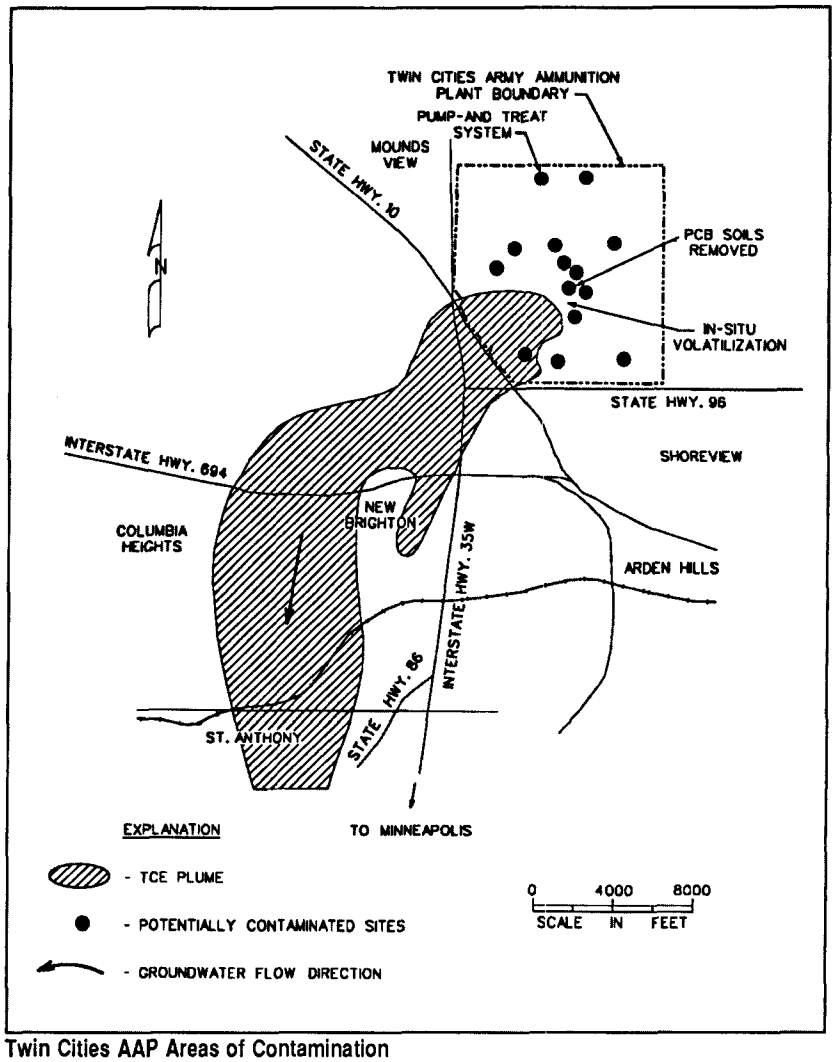
The Twin Cities Army Ammunition Plant is located in Ramsey County, Minnesota, north of the St. Paul-Minneapolis metropolitan area. It covers about four square miles and is bounded on all sides by suburbs of the Twin Cities: Shoreview to the north and east, Arden Hills to the south, and Mounds View to the west.

The plant was built to produce small caliber ammunition in support of America's armed forces. During World War II, Korea and the Vietnam conflict, TCAAP produced 16.5 billion rounds of ammunition. Currently, most of the plant is still in standby status, although two major lessees are manufacturing ammunition products at the site.

Ground Water Contamination Discovered

Preliminary investigations conducted in the early 1980s indicated that ground water on or near TCAAP was contaminated with volatile organic compounds (VOCs) from the plant. The contamination was first detected in the TCAAPs water supply wells, in water supply wells serving the nearby Arden Manor Trailer Park, and in six private wells in New Brighton and Arden Hills. However, an expanded ground water survey indicated that some of the municipal wells belonging to the cities of New Brighton and St. Anthony, providing drinking water for approximately 32,000 people, had also been contaminated with VOCs.

The primary contaminant found in the ground water was trichloroethene (TCE), a commonly used industrial solvent and suspected carcinogen. Because of the level of concentration of TCE, EPA placed the New Brighton - Arden Hills Area (including TCAAP) on the National Priorities List in 1982.



Twin Cities AAP Areas of Contamination

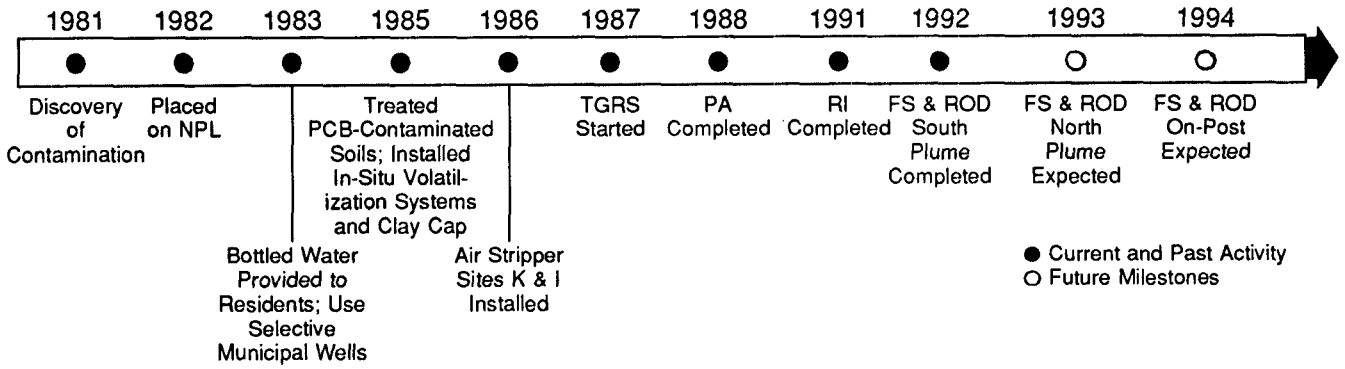
Protection of Public Health Given Highest Priority

Interim Remedial Actions (IRAs) were immediately taken to ensure that people on and off the installation had clean drinking water. In 1983, the Army provided bottled water to the six affected individual residences until they could be connected to a municipal water supply. In 1988, the Army provided temporary granular activated carbon treatment for the City of New Brighton municipal water wells until the construction of a permanent municipal water treatment facility, also funded by the Army, was completed in 1990. The City of St. Anthony was also provided with a permanent granular activated carbon municipal water treatment facility funded by federal and state dollars. The City of St. Anthony facility was completed in early 1991. The installation map shows the location of interim remedial actions and potentially contaminated sites at TCAAP.

TCAAP is "a model of what can be accomplished in the Superfund Program."

Dr. Mark Schmitt
Minnesota Pollution Control Agency

CLEANUP TIMELINE



Site Risks Have Been Reduced Through Interim Remedial Actions

The overall facility remediation plan targets 2002 as the date for all source area and plume cleanup systems to be in place. While studies and work continue toward a final remedy at TCAAP, a number of IRAs are being taken to reduce human health and environmental risks to acceptable levels.

In 1985-1986 about 1,400 cubic yards of soil contaminated with PCBs were excavated from a former burning area. The soils were stored, and subsequently decontaminated by incineration in 1989. Once their safety was verified, the soils were graded into the landscape, covered with top-soil, and seeded.

Also in 1985, layers of clay were placed over two sites to keep rain and snow from washing more contamination down into the ground water. Then ISV (in-situ volatilization) systems were installed to force air and VOCs through the soil and remove VOCs. The VOCs were captured using granular activated carbon filters. Between the two sites, 128 air extraction vents and associated filtration equipment have removed more than 228,000 pounds of VOCs since 1986 (see table).

In 1987, the TCAAP Ground Water Recovery System, known as TGRS, was put into operation. The system has treated more than five billion gallons of water since then, and returned the clean water to a site on TCAAP where it reenters the ground water. The TGRS is designed to prevent migration of VOC-contaminated ground water beyond the plant's southwest boundary. Seventeen wells, twelve located along the southwest boundary and five at contamination sources, pump contaminated ground water through air stripping towers and carbon filters. More than 90,000 lbs of VOCs have been removed using this method to date.

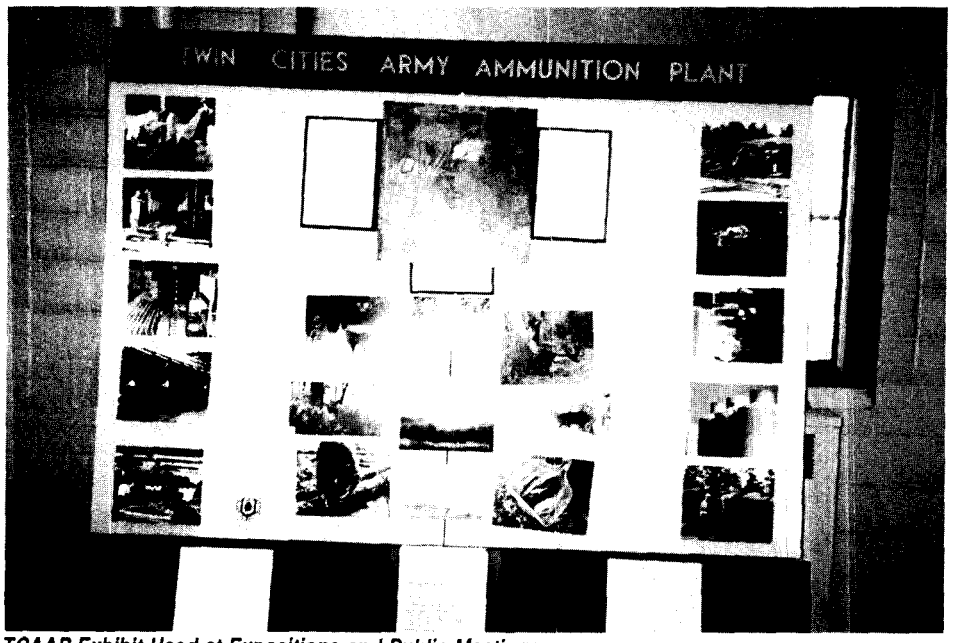
Twin Cities Army Ammunition Plant
Installation Restoration Program Remedial Action Status
Estimated VOC Removal Through June 1992

Site/System	Description	VOC Removal
SOIL REMEDIATION		
Site D	Soil ISV	131,335 lbs.
Site G	Soil ISV	97,500 lbs.
	Subtotal	**228,835 lbs.**
GROUNDWATER REMEDIATION		
Site A	G.W. Treatment	4 lbs.
Site I (Building 502)	G.W. Treatment	353 lbs.
Site K (Building 103)	G.W. Treatment	53 lbs.
BGRS/TGRS	G.W. Treatment	90,390 lbs.
New Brighton	G.W. Treatment	3,400 lbs.*
St. Anthony	G.W. Treatment	110 lbs.**
PGRS	G.W. Treatment	0 lbs.***
	Subtotal	**94,310 lbs.**
	TOTAL	**323,145 lbs.**

*Through May 1992
**Through February 1991
***Estimated start-up is FY 1993

Decision Nearing On Future and Final Ground Water Cleanup Method

The ground water plume at TCAAP is geographically divided into three operable units (south plume, north plume, and on-post). In August 1992, TCAAP completed investigation work on the south plume and issued a proposed plan for containing the contamination, removing VOCs from the aquifer, and using the treated water to meet local municipal water supply needs. The plan, developed jointly by EPA, the Minnesota Pollution Control Agency, and the Army, requires the installation of one or more ground water extraction wells, monitoring wells, and a water remediation/treatment facility where contaminants would be removed and water would be treated to drinking water quality using granular activate carbon. The water would be provided to the City of New Brighton to augment its municipal supply. The system is expected to operate as a remediation system for 50 years or more. When remediation is completed, it will become part of New Brighton's municipal water system for long-term use.



TCAAP Exhibit Used at Expositions and Public Meetings

Community Relations Aid In Problem Resolution

An active program to initiate and maintain a dialogue with affected communities has been in place at TCAAP since early May 1987. Nineteen fact sheets have been prepared and distributed to the site information repositories. These fact sheets were also presented to attendees at five public meetings. In addition, more than 25 press releases have been distributed to major media, local media and concerned citizens, as well as to local, state and federal officials. As required by the Federal Facility Agreement (FFA), each press release and fact sheet is coordinated with the EPA and the State of Minnesota prior to release.

Public meetings are a proven method of fostering understanding. TCAAP, the Minnesota Pollution Control Agency (MPCA) and EPA have worked together to ensure such meetings are conducted at critical times in the remediation process. To date, five such meetings have been held. The first was to announce the signing of the FFA. Others addressed the boundary ground water recovery system, the New Brighton granular activated carbon treatment facility and other subjects.

At the beginning of a soil incineration program, a site tour was conducted for local citizens to explain the process. At the conclusion of the Remedial Investigation in November 1991, a tour of all sites on the installation was conducted for local officials, and was repeated in October 1992. A TCAAP open house for the general public, featuring bus tours and environmental displays, was held in October 1992.

An exhibit, designed to be used in malls surrounding the TCAAP area and at public meetings, has been delivered to the installation and will be updated as cleanup progresses. This method of taking visual information into the community is expected to further strengthen citizen understanding of cleanup processes and progress.

References

1. "Twin Cities Installation Restoration Program Equals Cleaner Environment," Briefing Paper, 1982.
2. Proposed Plan for Ground Water Remediation for Operable Unit 3 at the New Brighton/Arden Hills Superfund Site, EPA, MPCA, US Army, August 1992.
3. United States Army Toxic and Hazardous Materials Agency, "Remedial Investigation: Twin Cities Army Ammunition Plant," November 1991.
4. Minnesota Pollution Control Agency, "Twin Cities Army Ammunition Plant/New Brighton, Arden Hills/St. Anthony: Off-TCAAP Remedial Investigation," November 1991.

Louisiana Army Ammunition Plant, Doyline, Louisiana

At Louisiana Army Ammunition Plant (LAAP) near Doyline, Louisiana, the Army has removed and treated over 102,000 tons of contaminated soil and 53.6 million gallons of contaminated water, effectively eliminating any potential health threat to on-site workers and off-site residents.

Background

Louisiana Army Ammunition Plant (LAAP), located approximately 22 miles east of Shreveport, Louisiana, was built in 1942 to produce ammunition. An important Army munitions facility, LAAP is used today to produce and assemble a variety of projectiles, mortars and mine clearing charges.

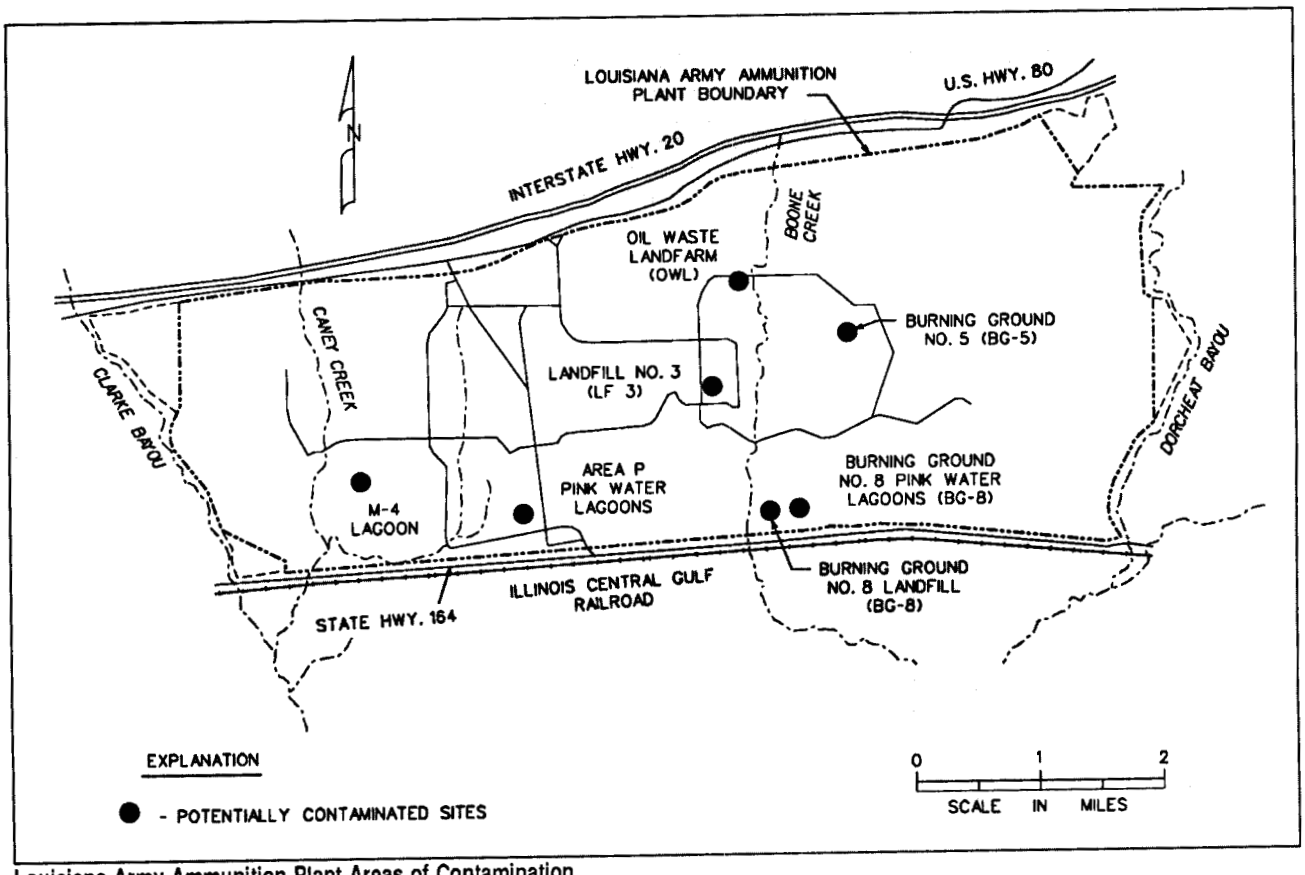
Past operations at numerous manufacturing, loading and support facilities resulted in the generation of explosive and metal contaminated wastes that were disposed of at several locations on the installation. Seven areas of concern were identified for field investigation and evaluation. They are shown on the installation map.

Of these seven areas, the site that presented the most immediate concern was Area P. From the early 1950s to 1981, Area P received explosives contaminated wastes. Pink water (explosive contaminated wastewater) generated from various manufacturing lines was disposed of in 16 unlined lagoons in this area. As a result of ground water contamination from the lagoons, the installation was placed on the National Priorities List (NPL) in 1989.

Interim Response Actions at Area P Control Risk

Even before LAAP was listed on the NPL, efforts were taken to mitigate the risk posed by Area P contaminants. An IRA initiated in 1987 treated 102,000 tons of contaminated soil and 53.6 million gallons of contaminated water in a lagoon at Area P. The IRA was completed in 1990. In October 1990, the cleaned-up soils were returned to excavated areas and a protective cap was installed.

The Area P cleanup relied upon high-temperature incineration to treat soil and carbon adsorption for remediation of contaminated lagoon water. To control the costs and risks of cleanup work, all soil and water treatment was performed on site. Cleanup of the soils was accomplished over a 15-month period using a mobile incineration system. Contaminated lagoon water



Louisiana Army Ammunition Plant Areas of Contamination

was treated using a custom-designed carbon adsorption system that was constructed and operated on-site.

The IRA effectively eliminated risks to onsite workers posed by the presence of the lagoon contamination. Studies completed during FY 1992 have shown that contamination remaining at other LAAP sites poses no risk to off-site or onsite populations under current and reasonably foreseeable future land use.

To evaluate contaminant transport potential, a three-dimensional computer ground water flow and contaminant transport model was developed and calibrated for the site. Conditions were simulated for a 100-year period using five year increments. The computer simulations showed that the contaminated ground water in the upper aquifer will not cross the boundaries of the facility and that none of the municipal well fields in the area would be impacted.

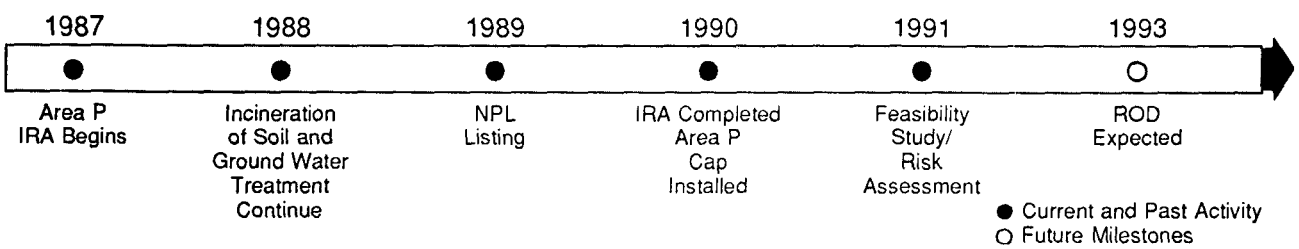
All seven areas of concern on the facility, including Area P, have been evaluated under a Feasibility Study and associated risk assessment. With the completion of the IRA at Area P, all of the areas of concern show no risk under current and reasonably foreseeable future industrial land use scenarios. A Record of Decision is anticipated to be signed for the entire installation in 1993. At that time, efforts will be taken to remove the installation from the NPL.

Computer Modeling And Risk Assessment Lead The Way

Preliminary ground water investigations at LAAP indicated that the subsurface flow system at the installation occurs in three aquifers. Contamination had been detected in the surficial aquifer but it was not known if it was being drawn deeper or had the potential to impact the three municipal drinking water well fields located within a 3-mile radius.

Area P Lagoons After Cleanup

CLEANUP TIMELINE



References

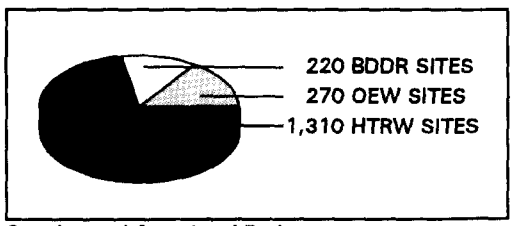
1. U.S. Army Installation Restoration Program at Louisiana Army Ammunition Plant: A Case History, Barbara Ann Campbell, February 1992.
2. Installation Action Plan for Louisiana Army Ammunition Plant, May 1992.
3. Three-Dimensional Ground Water Quality Modeling In Support of Risk Assessment At The Louisiana Army Ammunition Plant, Anderson et al, January 1992.

Formerly Used Defense Sites

The Secretary of the Army is the DoD Executive Agent for implementing DERP at Formerly Used Defense Sites (FUDS). As Executive Agent, the Army is responsible for environmental restoration activities under DERP on lands formerly owned or used by any DoD Component. The U.S. Army Corps of Engineers (USACE) is responsible for executing the FUDS program. Investigation and cleanup procedures at formerly used sites are similar to those at currently owned installations. However, information concerning the origin of the contamination, land transfer information, and current ownership must be evaluated before DoD considers a site eligible for restoration.

The funding allocated to the FUDS program in FY 1992 accelerated the progress of IRP and BDDR activities. During FY 1992, 1,116 PAs were completed and 1,084 new PAs were initiated at FUDS. In FY 1992, continuing and new work for sites requiring remedial/removal action was performed for each of the following phases: 92 SIs, 93 RI/FSs, 234 RDs, 154 RAs, and 25 IRAs. There was also work performed on 53 BDDR projects.

A total of 7,344 FUDS with potential for inclusion in the program have been identified through inventory efforts. The number of FUDS increased by 558 over last year. Entries that were determined to be duplicative were removed from the inventory and numerous other sites not previously counted were added to the inventory. The quality of data in the inventory continues to improve.



Ongoing and Completed Projects

By the end of FY 1992, PAs had been initiated at 5,233 properties. Of these, 1,119 were underway and 4,114 were complete. During the PA phase, an Inventory Project Report (INPR) is conducted to determine if the property is eligible and if any hazards exist. Based on the completed PAs, we have determined that 2,832 sites are eligible and 1,282 are ineligible for the FUDS program. Of the eligible properties, 1,815 require no further action. Each of the other 1,017 properties require one or more remedial/removal projects.

Work requirements have been identified for approximately 1,800 sites on 1,017 properties. Of the identified sites, approximately 1,310 are required to address hazardous, toxic, or radioactive waste (HTRW) contamination from formerly used underground fuel storage tanks, landfills, leaking polychlorinated biphenyl (PCB) transformers and other sources. Approximately 270 have been identified for the detection and removal of ordnance and explosive waste (OEW) from former target ranges, impact areas or storage/disposal areas, and approximately 220 have been identified that require the removal/demolition of unsafe buildings, structures or debris (BDDR).

USACE also represents DoD interests at NPL sites where former properties are located and where DoD may be a Potentially Responsible Party (PRP). Former properties that have passed from DoD control may have been contaminated by past DoD operations as well as by other owners, making DoD one of several PRPs. Ongoing USACE efforts will determine the allocation, if any, of DoD cleanup responsibility.

Thirteen FUDS are currently listed on the NPL. The sites are described in Appendix E. West Virginia Ordnance Works, a formerly owned site that was being

remediated under the Army IRP in FY 1991 is now described in Appendix E. All work for this site was transitioned from the Army into the FUDS program in FY 1992.

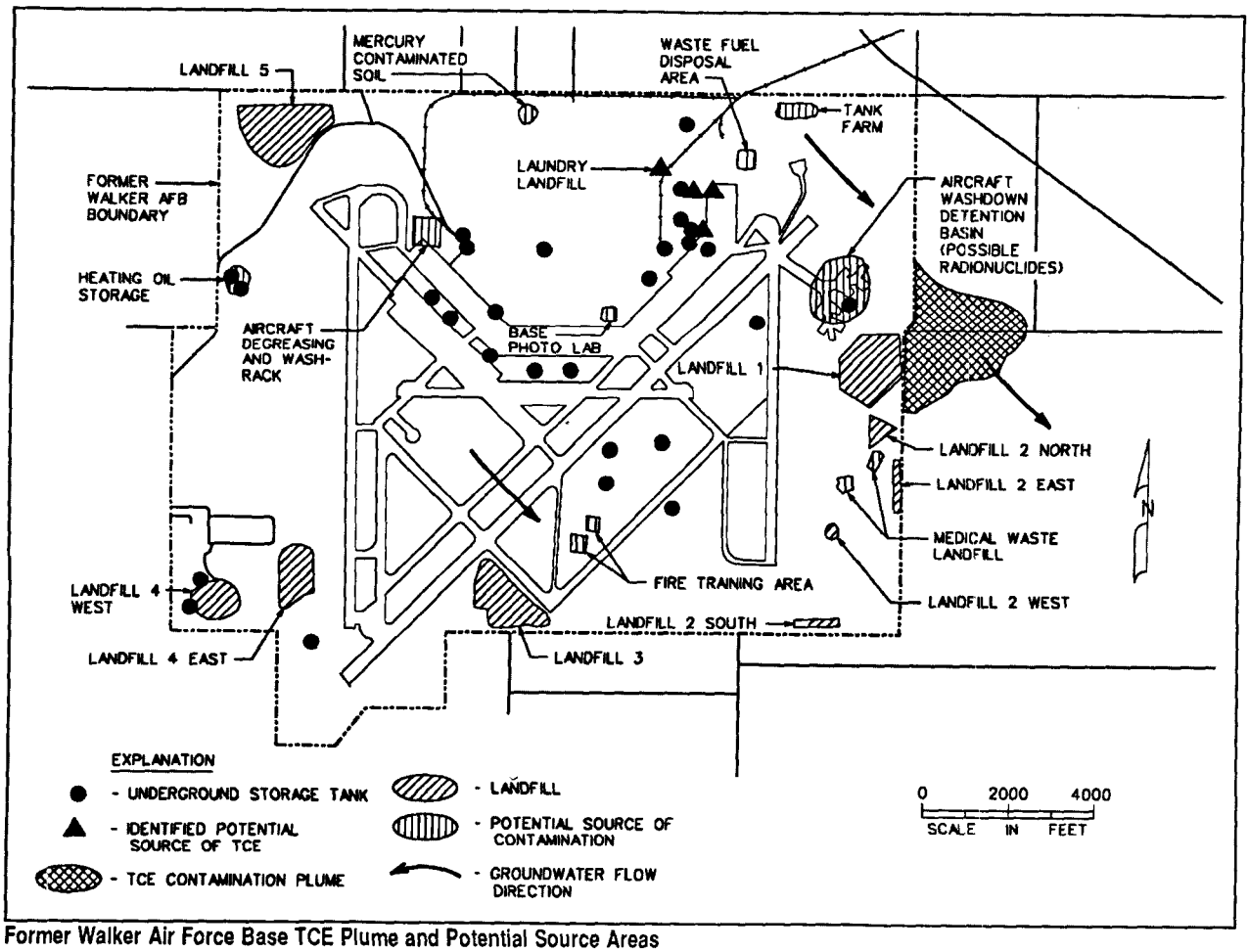
In FY 1992, $126.6 million was invested in IRP and BDDR activities at former sites. The following are success stories detailing important work conducted by USACE at sites in the FUDS program. (Appendix E provides additional details for FUDS on the NPL.)

Former Walker Air Force Base, Roswell, New Mexico

At the former Walker Air Force Base, Roswell, New Mexico, the U.S. Army quickly mitigated a potential health threat from contaminated ground water providing alternate water supplies to affected residents. The effort is notable for how quickly the interim remedial action was implemented.

Background

Walker AFB was a large installation, supporting up to more than 5,000 personnel, on over 5,000 acres. Construction and land acquisition began on April 4, 1942, at which time the base was called the Roswell Air Field. Originally constructed as an Army Air Corps flight training school, it was used by the Air Force as a Strategic Air Command (SAC) base. The SAC base mission was to support the 6th Bombardment Wing, with two squadrons of B-52s and two squadrons of KC-135s. It was closed on July 1, 1967. Currently, the property is owned by the City of Roswell and is known as the Roswell Industrial Air Center (RIAC). It is used for commercial and military air transport, and continues to be an active hub for commerce in the region. (See the installation map below.)



Former Walker Air Force Base TCE Plume and Potential Source Areas

Discovery of the Problem

Residents of Y-O Acres, a rural subdivision south of Roswell, New Mexico complained of foul tasting water from their wells after a heavy rainstorm and local flooding in July 1991. Personnel from the New Mexico Environment Department (NMED) sampled and re-sampled the wells and confirmed that the ground water was contaminated with TCE, with concentrations of up to 120 parts per billion (ppb). The regulatory standard for TCE in drinking water set by the EPA is 5 ppb. Families whose wells were affected by the contamination were told by water resource specialists of NMED not to drink, bathe, or wash clothes in their household water.

From information gathered during a site visit, the Albuquerque District, Army Corps of Engineers, concluded that the contamination could possibly be coming from a source or sources located on the former Walker AFB. Confirmatory sampling and analysis verified TCE contamination in the drinking water. Record searches and site visits conducted during September 1991, and examination of historic aerial photographs indicated many potential sources of contamination at the former base. Four landfills, two fire training areas, more than 20 abandoned underground storage tanks, and various waste burial sites are the major possible sources of contamination that are currently being investigated.

Interim Remedial Measures by COE

The Chavez County Board of Commissioners formally declared an emergency on September 16, 1991, and requested assistance from the Corps of Engineers. After analyzing the situation, the COE made recommendations to address the immediate problem of ground water contamination. Two days after declaring an emergency, the COE announced that it would provide bottled water as an interim measure to the approximately 65 residents that used the 12 wells. On October 10, 1991, the residents whose wells were affected were told in a public meeting that an alternative water supply amounting to 50 gallons per person per month would be provided, until a more permanent supply could be established. Bottled water delivery from a local vendor began the next day, fifteen days after the emergency had been declared. The measures effectively eliminated the risks to residents' health from the TCE-contaminated wells.

Construction of 6" Water Supply Lines

More Permanent Measures by COE Provide Municipal Water Supply

After COE authorization was sought and received, and contracting and funding issues were negotiated, the City of Roswell agreed to extend their municipal water supply lines to these residents. The city will charge standard city rates for the water until the contamination is remediated. COE-funded work began on November 4, 1991, and water line construction was completed on November 21, 1991.

The COE has conducted a cost comparison study, calculating the difference in cost that is incurred by the residents in receiving municipal water over what it cost them to pump their own. The additional cost, estimated at approximately $7,000-$8,000 per year for all of the residents combined, is currently paid to the residents by the COE.

Investigation of the Soil/Ground Water Problem

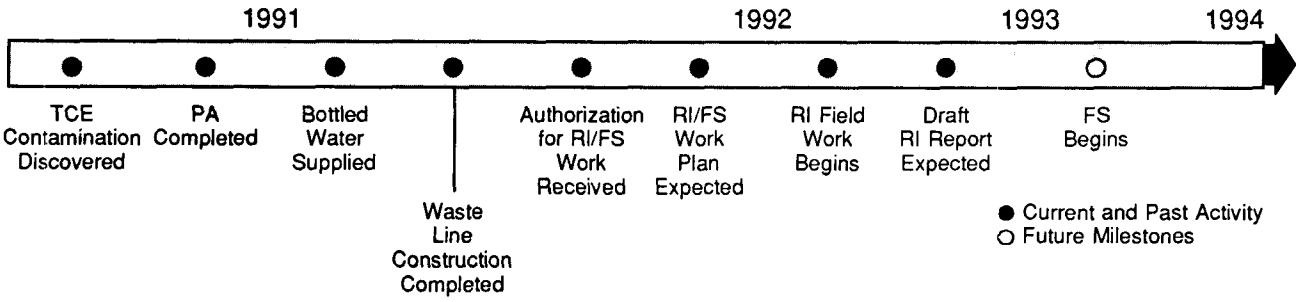
Concurrent with the immediate interim remedial action taken to protect human health, the COE began the process to plan the investigation that will ultimately lead to the cleanup of the contamination. Currently, the COE is planning a Remedial Investigation of contaminated ground water and soils at the site. The investigation will include sampling and chemical analysis of soils, soil vapors and ground water. Also planned is the removal of more than 20 abandoned underground storage tanks (USTs), the contents of which are unknown, but which historically have contained fuel, waste oil, solvents or waste solvents.

Based on available data, the dimensions of the contamination, as estimated by the NMED in December 1991, are about 3,600 feet by 2,500 feet, extending downgradient from the former Walker Air Force Base. The aquifer, located at a depth of about 150-160 feet, flows in an east to southeast direction, from the RIAC towards the Pecos River. The areal extent of contamination that will need to be cleaned up has been estimated at about 7.2 million square feet.

The possible sources of contamination that have been identified in the preliminary assessment are many and varied. More than 20 USTs have been identified, some of which may have been used for solvent storage. Often, wash racks have historically been sites of disposal of used solvents directly to the soils. Also, a base laundry, which also conducted dry cleaning operations, burned to the ground and was demolished prior to closure in 1967. The demolition wastes were bulldozed into what were previously brine pits, and covered over with native soil.

With the completion of the interim measure of supplying a clean water source, the COE is currently developing plans to locate the source of contamination, and to remediate it.

CLEANUP TIMELINE



References

1. U.S. Army Corps of Engineers, "Potential Hazardous Waste Site Preliminary Assessment," September 1991.
2. Dennis Goodnight, "High TCE Level Found in Water," *Roswell Daily Journal*, September 4, 1991.
3. U.S. Army Corps of Engineers, "DERP Formerly Used Defense Sites Inventory Project Reports," October 9, 1991.
4. Steven J. Cary, Chief, Ground Water Protection and Remediation Bureau, State of New Mexico Environment Department to Thomas J. Wash, Chief, Formerly Used Defense Sites Branch, Environmental Restoration Division (CEMP-RF), U.S. Army Corps of Engineers, December 4, 1991. Official file of David Epperly, Tulsa District U.S. Army Corps of Engineers, Geotechnical Branch.
5. Rob Goldsmith, "Well Plan Not 'Feasible'.' *Roswell Daily Record*, September 22, 1991.

Removal of Booster Adapters near Building 118.

Former Raritan Arsenal, Edison, New Jersey

The U.S. Army removed over 113,000 items of unexploded ordnance and 12,360 pounds of trinitrotoluene (TNT) from the former Raritan Arsenal in Edison, New Jersey. This action significantly reduced the risk to human health and safety in what is now a heavily-developed commercial and industrial area. This cleanup is noteworthy for the technical complexities of a state-of-the-art operation involving the detection, removal and detonation of large amounts of explosives in a heavily developed area. Close communication and coordination with Federal, State and local authorities, the press, and the general public contributed to the success of this project.

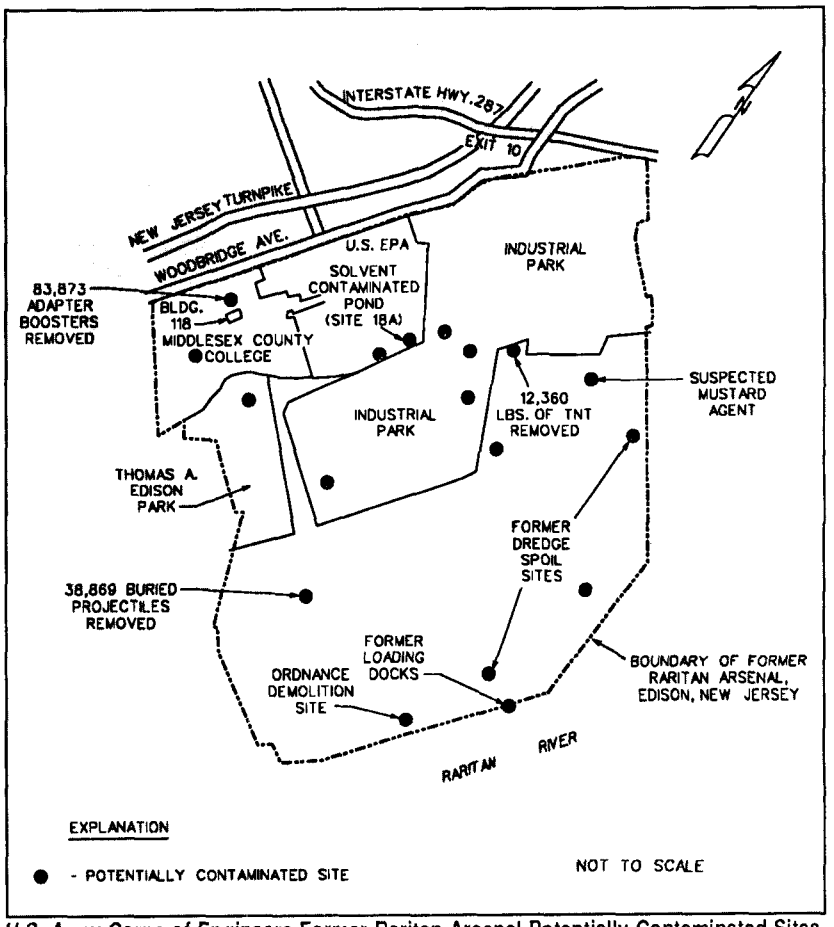
Background

The former Raritan Arsenal is located in a heavily-industrialized portion of Middlesex County, New Jersey, about 20 miles southwest of New York City. The 3,200-acre arsenal site is located on the Raritan River in the township of Edison, which has a population of about 70,000 people.

The Army used the arsenal for the receipt, storage, shipment and decommissioning of ordnance, arms and machinery. From its opening in 1917 during the First World War to 1963, waste materials, including ordnance and chemical agents were buried and burned on-site.

From 1961 to 1963 operations were phased out and property was transferred to a number of owners. Subsequently, heavy commercial development occurred within the boundaries of the former arsenal. The property now contains a large industrial park, a hotel-convention center, a major EPA facility with 400 employees, Middlesex County College, and a county park. The southern part of the installation, however, remains largely undeveloped wetlands. Although land was cleared of ordnance prior to construction, the Army identified 17 ordnance-contaminated sites in adjacent, undeveloped areas. (See map.)

In addition to large amounts of unexploded ordnance, the types of contamination resulting or suspected from former arsenal activities include explosive residues, chemical agents, and contaminants such as spent solvents and fuels. The ground water beneath the area is not used for drinking water purposes, and there is no indication that nearby drinking water supplies have been contaminated by former arsenal activities.



U.S. Army Corps of Engineers Former Raritan Arsenal Potentially Contaminated Sites

Ordnance Removal

The U.S. Army Corps of Engineers recovered 113,619 items of ordnance from the former arsenal as of June 1992, and removal is still occurring (see table at right). Ordnance investigation and removal activities have taken place at 17 locations and are expected to continue through FY 1997.

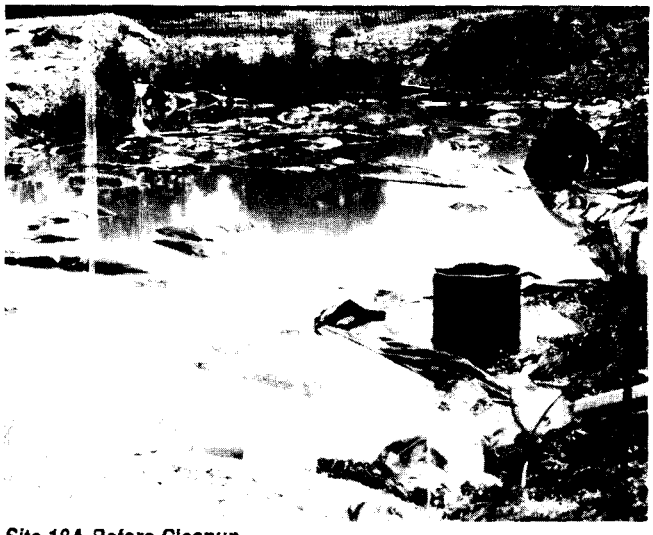
Unexploded Ordnance Destroyed On-Site at Former Raritan Arsenal	
UXO, MK II Grenades (unfuzed)	9
UXO, 37mm projectiles	30,149
UXO, MK II Booster Adapters	83,352
UXO, Grenade Rifle, VB French	67
UXO, MK 23 Practice Bomb	1
UXO, 9.2" Projectile	1
UXO, 75mm Projectile	21
UXO, Adaptor Booster	9
UXO, 155mm Projectile	1
UXO, TNT	12,360 lb
UXO, 20mm Projectile	8
UXO, Stokes Mortar Round	1

Removal Procedures

The U.S. Army Corps of Engineers has carefully cleared large areas of munitions in a logical sequence that protects the health and safety of those doing the demolition as well as of the many workers and students in the area. Often, this has been a complex and painstaking task, as many of the removals were conducted in close proximity to schools or office buildings.

The Corps conducts detection and removal in a carefully planned sequence. Work begins with ordnance searching. Crews clear brush, locate suspected hot spots, and use magnetometers to detect ordnance. "Hits" are marked with red flagging. Munitions within one foot of the surface are excavated by shovel and removed by hand. Munitions deeper than one foot are excavated using search moving equipment to remove most of the soil. Final removal is accomplished by hand. Crews excavate to six feet or the ground water table. After excavation, soils are sifted and examined and the area is backfilled after it is determined to be ordnance free.

The Corps restricts access and maintains security in cooperation with local police and security services to prevent injury to the public. A Health and Safety Plan is strictly followed and includes daily safety meetings, monthly safety audits, and air quality monitoring. Personnel cold stress monitoring, regular medical surveillance, and personal protective procedures are also part of the Health and Safety Plan. As a result of these precautions, no incidents or injuries have occurred despite the large amount of explosives recovered.



Site 18A Before Cleanup

Site 18A After Cleanup

Removal Action Eliminates Direct Threat to Human Health and Wildlife

In order to eliminate any possible direct threat to humans and wildlife, the Army removed, during June of 1992, over 4,100 gallons of hydrocarbons and solvents, 26 55-gallon drums, and over 200 cubic yards of contaminated soils and materials from an abandoned man-made pond (Site 18A). The pond is on land now owned by EPA, and was adjacent to a jogging trail used by EPA employees. Analysis of samples collected at the site revealed concentrations of the carcinogenic chemicals trichloroethylene, vinyl chloride, and polycyclic aromatic hydrocarbons (PAH) far in excess of levels considered safe for drinking water. Although the water is not used for drinking, the site posed a threat of accidental exposure to office workers and could have contaminated surface and ground water.

The pond has been drained and soil removed, and other work is continuing at the site to determine the presence of any residual contamination, buried drums or ordnance in the area. The threat to human health and the environment has been substantially reduced.

Ongoing Studies and Schedule for Final Cleanup

Work is ongoing to determine the extent of any other contamination at the former arsenal. This is being addressed through a Remedial Investigation/Feasibility Study (RI/FS), which began in 1991 and is scheduled for completion in 1993. The remedy design study (Remedial Design) will begin in 1993, with final cleanup expected in 1994 (see timeline on the next page).

News Release

US Army Corps of Engineers
New York District

Release Date: 7-27-92 For Immediate Release

Contacts: MAJ Ben Bauman (908) 603-9517
Andrew L. Miller (212) 264-9113

Technical Review Committee Meeting Scheduled

NEW YORK — The Former Raritan Arsenal project office of the U.S. Army Corps of Engineers announced that the Technical Review Committee meeting for the Former Raritan Arsenal will take place on August 7, 1992, at 10 a.m. The meeting will be held at the Expo Center, located at 97 Sunfield Avenue, in Raritan Center.

The meeting will review present and future activities concerning the remediation of the Former Raritan Arsenal. The public information repository is located at the Edison Township Main Library, 340 Plainfield Avenue, Edison, N.J.

Sample News Release

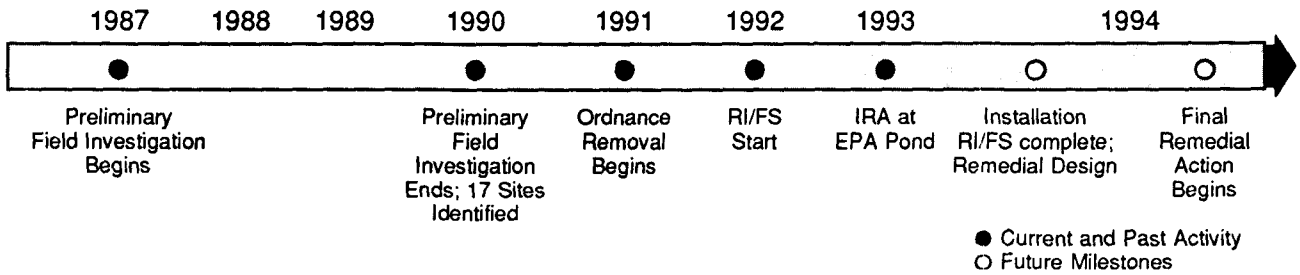
Public Communication

Since the spring of 1990, the former Raritan Arsenal has received a great deal of attention from the media, local citizens, special interest groups, and local officials. The hazardous waste and ordnance work has become a high profile project. Awareness has been heightened by the fact that Middlesex County has the most hazardous waste sites of the 21 counties in New Jersey.

The Army has responded to these concerns by providing an on-site project manager to deal with the public, by maintaining a constant flow of information, and by implementing activities that reach broad audiences within the community and address their concerns. Examples (see sample news release above) of such activities include distribution of frequent project updates, news releases and fact sheets, regular meetings of the Technical Review Committee, site tours, briefings, and maintenance of information repositories and telephone information lines.

These community relations activities have allowed the Army to be responsive to public concerns about cleanup activities. For example, ordnance detonation activities were successfully modified to address complaints about noise from demolition activities on-site near the Raritan River. Explosives were laid in trenches and covered with two feet of sand prior to detonation, and noise levels were significantly reduced.

CLEANUP TIMELINE

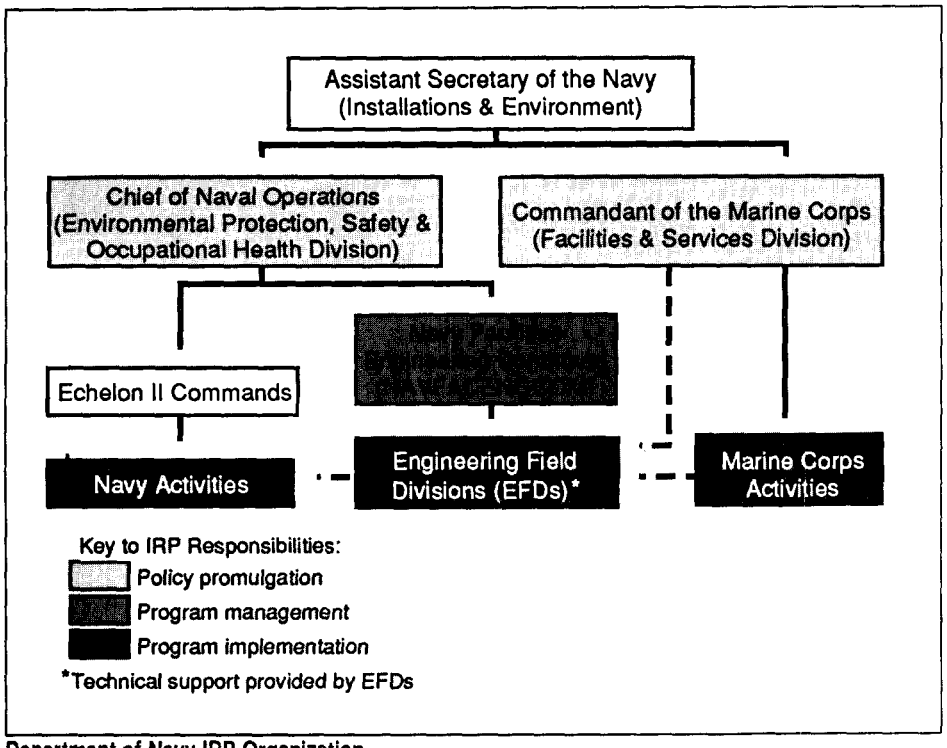


References

1. Dames and Moore, "Community Relations Plan for the Former Raritan Arsenal," Prepared for the U.S. Army Corps of Engineers, March 1992.
2. IT Corporation, "Final Report, Former Raritan Arsenal, Edison, New Jersey," Prepared for the U.S. Army Corps of Engineers, May 1992.
3. Richard C. Salkie, Associate Director for Removal and Emergency Preparedness Programs, "Removal Site Evaluation for Raritan Depot Pond," U.S. Environmental Protection Agency, Region II, September 6, 1991.
4. U.S. Army Corps of Engineers, "Raritan Arsenal Cleanup Fact Sheet," June 18, 1992.

Department of Navy IRP Progress

The most significant IRP growth among DoD Components in FY 1992 occurred in the Department of Navy's program. The number of Navy and Marine Corps sites included in the IRP increased from 2,409 to 3,258 including USTs and DERA-eligible RCRA Solid Waste Management Units (SWMUs) identified during RCRA Facility Assessments. Progress in IRP activities has occurred mostly in RI/FS completions which almost tripled during FY 1992.



Department of Navy IRP Organization

The National Contingency Plan and protocol developed by the Environmental Protection Agency (EPA) for assessing and cleaning up sites are followed by the Department of the Navy (DON) as the basis for the Navy/Marine Corps Environmental Restoration Program. As of October 1, the Department of the Navy has 23 installations on the National Priorities List (NPL) and four proposed for listing on the NPL.

The Department of the Navy continues to make significant progress in the Installation Restoration Program. The major Navy and Marine Corps accomplishments in FY 1992 include the initiation of new RI/FS work and continued progress in cleanup actions. Funding received in FY 1992 was invested in RI/FS activities, increasing the number of sites where RI/FS work was completed from 38 to 110. RD completions at Department of Navy sites increased from 9 to 12 during FY 1992 and PA work was completed at 2,925 sites by the end of the fiscal year. As the DON's experience in conducting studies increases, technical experts are able to develop new methods, based on that knowledge, to expedite the process at installations in the early phases of the program. This allows flexibility and should be reflected in increasing numbers of interim remedial actions, removals, and remedial actions.

An important aspect of the Department of Navy's process are studies of wetlands and estuarine and marine environments on or adjacent to DON installations. These studies include biota and

sediment sampling in order to determine if contaminants are present in these environments and to measure their impact if they are present. An example of such a study conducted by the Department of the Navy in conjunction with EPA's Narragansett Laboratory is the Allen Harbor Study at NCBC Davisville, an installation which is being closed under the Base Closure Act.

Initiatives begun in 1992 include:

- Speeding up the process by working on more than one phase concurrently rather than in sequence.
- Using the partnering concept to improve working relationships with both regulators and contractors.
- Emphasizing teamwork and early identification of roles and authorities of all team members, planning flexible workplans and sampling based on specific objectives and goals.
- Using a non-phased sampling and analysis approach.
- Reducing review time by reviewing documents concurrently with regulators.
- Using the value engineering process to refine the decision making process.
- Using new contracting procedures.

In order to streamline site investigations and the design of remediation projects, the Navy has awarded eight CLEAN (Comprehensive Long-Term Environmental Action Navy) contracts, which provide coast-to-coast coverage at all DON facilities. These contracts cover Preliminary Assessments, Site Inspections, Remedial Investigations, Feasibility Studies and Remedial Designs. Remedial Actions are covered by eight separate contaminant specific contracts called Remedial Action Contracts (RACs). When used in conjunction, these contracts allow the Navy to rapidly respond to contaminated sites as well as demonstrate innovative cleanup technologies.

The Department of Navy signed four IAGs covering NPL installations in FY 1992. This action brings the total number of Navy and Marine Corps NPL installations covered by IAGs to 22. RI/FS activities are underway or completed at all NPL facilities and removal actions and IRAs were completed or were ongoing at 25 of the 27 Department of Navy facilities final-listed or proposed for listing on the NPL.

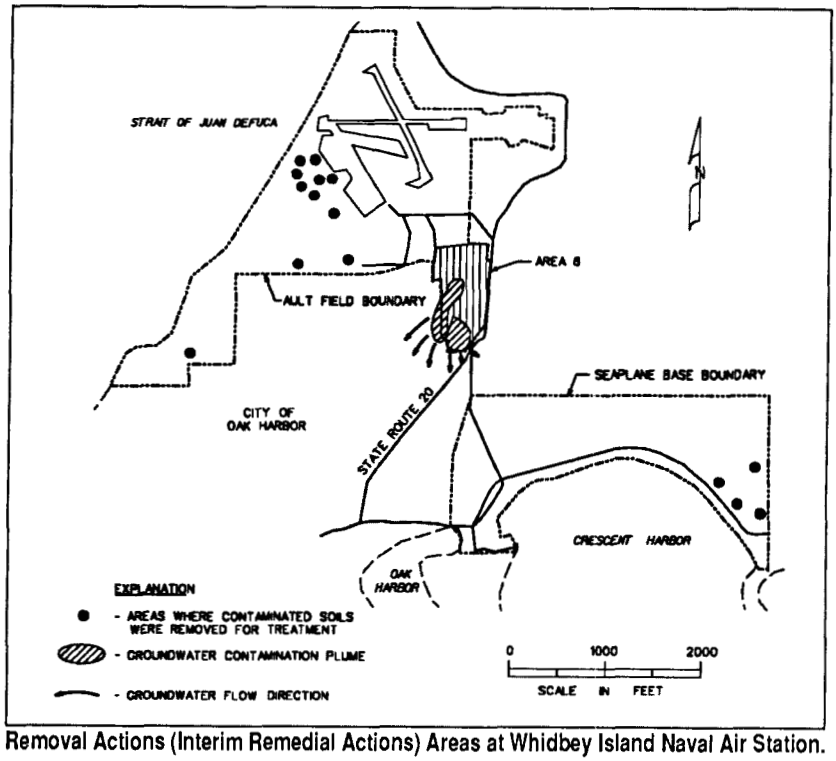
The following are showcase stories detailing significant Department of Navy IRP efforts at selected installations. (Appendix B provides additional details for installations final-listed or proposed for listing on the NPL.)

Whidbey Island Naval Air Station, Washington

The Navy has reduced potential risk from contaminated ground water at Whidbey Island Naval Air Station through several interim remedial actions, including provision of alternate water supplies and the construction of a ground water extraction and treatment system. In addition, the Navy has applied a phased RI/FS approach to expedite cleanup. The approach has resulted in significant cost savings and has helped streamline IRP activities at the installation.

Background

Since the 1940s, operations at Whidbey Island Naval Air Station (NAS), Washington have generated a variety of hazardous wastes which were disposed of onsite at a time when regulatory requirements had not been established. Wastes consisted primarily of solvents, oily



Removal Actions (Interim Remedial Actions) Areas at Whidbey Island Naval Air Station.

sludges, and thinners. An initial investigation conducted in 1984 identified the waste disposal areas as potential sources of contamination. In 1985, EPA completed a Hazardous Ranking System (HRS) evaluation at Whidbey Island NAS and nominated the Station's two sites, Ault Field and the Seaplane Base, for inclusion on the National Priorities List (NPL). In 1990, both sites were added to the NPL. A Federal Facilities Agreement (FFA) was signed in 1990 by the Navy, EPA, and Washington State Department of Ecology. The Navy is conducting RI/FSs to determine the nature and extent of soil and ground water contamination and to evaluate potential remedial alternatives.

NAS Whidbey's offer to provide city water to residents and businesses that are in close proximity to the presumed contaminant flow is a positive and proactive action.

Joyce E. Bouvouloir, R.S.
Environmental Health Director
Island County Health Department

Application of a Phased Approach to RI/FS

To help expedite cleanups at Whidbey Island NAS, the Navy grouped the 14 contaminated areas (see installation map on previous page) on the two NPL sites into 4 Operable Units (OUs) based on similar characteristics such as type of contaminants and pathways (i.e., soil, ground water). This strategy allows each OU to progress independently through the IRP process instead of delaying remediation activities until agreement on cleanup procedures for all sites is reached. The remaining 26 areas that had little or no contamination were isolated and studied separately with limited field work to determine if any additional investigation was needed. This approach resulted in significant cost savings by avoiding unnecessary RI/FS work at uncontaminated areas and has contributed to continuous progress by streamlining and prioritizing IRP activities based on nature and extent of contamination as well as threat to public health and environment.

Naval Air Station Whidbey Island, Oak Harbor, Washington

Proposed Plan
Superfund Interim Remedial Action at Ault Field Area 6 Landfill

This proposed plan describes an interim action that will be taken to reduce the potential hazard from the migration of a contaminated plume of ground water at the Area 6 landfill. The interim action will comply with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, commonly known as Superfund). The Navy, the U.S. Environmental Protection Agency (EPA), and the Washington Department of Ecology (Ecology) are seeking comments from the public on this proposed plan.

This plan, submitted in accordance with Section 117(a) of CERCLA, highlights the interim action alternative preferred by the agencies. The actual remedy selected may be the preferred alternative, a combination of elements from some or all of the alternatives, or another identified response action. Comments are being sought on all alternatives. The alternative to be used will not be selected until the public comment period has ended and all comments have been received and considered.

HOW YOU CAN PARTICIPATE

You are encouraged to submit written comments on the proposed interim remedial action or any of the other alternatives presented, during the Public Comment period which will be from January 3, 1992 to February 3, 1992.

Comments may also be made in person during the **PUBLIC MEETING** to be held at 7:00 pm, January 27th, 1992 at the Chief Petty Officers Club, Clover Valley Road and Heller Road, Oak Harbor. **Please send your written comments or requests for more information to:**

Mr. Howard Thomas
Public Affairs Officer
Naval Air Station Whidbey Island
Oak Harbor, Washington 98278-5000
Phone: (206) 257-2287

OVERVIEW OF THE PROPOSED PLAN

A plume of contaminated ground water is migrating from the Naval Air Station's (NAS) landfill located west of Highway 20, south of Clover Valley Road and east of Goldie Road. This area is known as Area 6. This proposed interim action is being taken to retard or completely stop the spread of the plume until an overall plan can be developed.

In a separate action, landowners adjacent to or near Area 6 boundaries are being offered hookups to Oak Harbor or Navy water sources.

PUBLIC COMMENT PERIOD: JANUARY 3, 1992 through FEBRUARY 3, 1992

PUBLIC MEETING: JANUARY 27, 1992

LOCATION: CHIEF PETTY OFFICERS CLUB, CLOVER VALLEY ROAD and HELLER ROAD, OAK HARBOR, WASHINGTON

Proposed Plan for Interim Remedial Action at Ault Field Area 6 Landfill

Interim Remedial Action for Area 6 Landfill

Since ground water contamination was migrating from Area 6 where one of the landfills is located, the Navy proposed interim remedial actions (IRAs) to contain the spread of contamination until an overall remediation plan can be developed. Area 6 comprises a portion of OU1 at Ault Field. The contaminants of concern include chlorinated solvents, vinyl chloride, and metals, primarily chromium. After evaluating several potential alternatives, the Navy, working with EPA and the Department of Ecology, selected ground water extraction and treatment as the interim action that would most reduce the potential risk to human health and the environment, comply with Federal and State applicable or relevant and appropriate requirements (ARARs), and be cost effective. The selection of this interim remedy

is now documented in a Record of Decision signed in April 1992 by the three parties. The IRA includes the installation of extraction wells to remove ground water from the shallow aquifer beneath Area 6, the treatment of extracted ground water using metal precipitation, and air stripping, and the discharge of the treated water in the aquifer by irrigation or reinjection. It is estimated that the system will treat approximately 200,000 gallons of water daily. Implementation of the IRA is expected in the beginning of FY 1993.

Potable Water Offered to Neighboring Residents

The initial RI results have indicated that a plume of contaminated ground water is migrating from Area 6 toward drinking wells located offbase. As a result, the Navy contracted with the Washington Department of Health to test the water in private drinking wells. Although no contamination was found in the samples collected, the Navy coordinated with the EPA, the Department of Ecology, the Washington Department of Health and local agencies to offer alternate water supplies to residences located adjacent to Area 6. Water agreements have been subsequently signed between the Navy and neighboring property owners certifying that the Navy will connect two well owners to the local public water system or to the Navy water system, as a preventative measure to risks associated with any future contamination of the drinking wells. The water connections were completed during the summer of 1992. A baseline risk assessment was conducted for Area 6 identifying ground water as the primary medium of concern for potential human health effects. Cancer and non-cancer health risks from potential future use of Area 6 shallow ground water are high.

Environmental Exhibit at Whidbey NAS Air Show

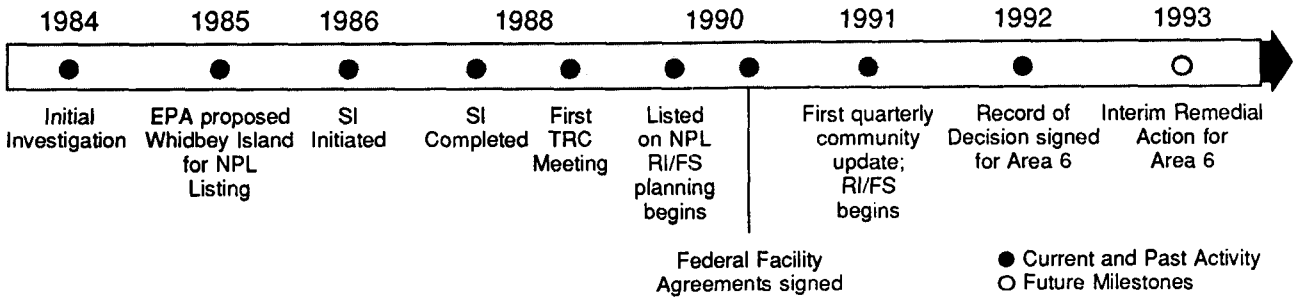
Removal Action at Whidbey Island NAS

Under the underground storage tank (UST) program, 17 tanks were removed from 14 sites. A total of 1,984 cubic yards of soils contaminated with petroleum hydrocarbons were excavated for treatment. These soils are currently stockpiled on-site and covered with a 9 mm thick permalon cover waiting to be land farmed on Navy property. At all of the sites where contaminated soil was removed for treatment, no further remedial action was determined to be warranted. In the remaining 13 sites, 4 require no further action and 9 are being evaluated to determine cleanup approach(s).

Public Involvement in the Interim Remedial Action Evaluation

The Navy is continuously encouraging the public to become involved in issues concerning Whidbey Island NAS. First, the Navy held a public meeting in January 1992 to take comments on a proposed IRA plan. The plan provided four potential remedial alternatives that address ground water contamination migrating from Area 6 to off-Navy property. The Navy responded to comments presented by the public and considered the public comments and concerns in making the final decision on the appropriate IRA for OU1. Second, Whidbey NAS has invited public representatives as Technical Review Committee (TRC) members to represent the community interests in the area that is impacted or potentially impacted by response actions at Whidbey NAS. Third, Whidbey Island NAS developed a comprehensive Community Relations Plan that describes a program for community involvement in all remedial investigations and feasibility studies. Fourth, fact sheets are published and distributed by Whidbey Island NAS to inform the community about the Navy's program to evaluate and clean up the old hazardous waste (HW) disposal sites. Finally, information on contamination at Whidbey Island NAS has been made available to the public at three informational repositories.

CLEANUP TIMELINE



A Technical Review Committee (TRC) has been formed to review and comment on actions and proposed actions for suspected contaminated sites that will undergo RI/FS activities at Whidbey Island NAS. Members of the committee include representatives from the installation, EPA Region X, Washington Department of Ecology, public representatives from the involved community, and other federal and state representatives. Regular meetings are held every quarter at Whidbey Island NAS with additional meetings scheduled when necessary. These efforts maintain interaction among the involved parties and ensure progress in IRP activities at the Naval Air Station.

Future Activities

The Navy is currently considering removal actions for portions of OUs 2 and 4. Area 4, included in OU2, has polychlorinated biphenyls (PCBs)-contaminated soil as a result of leaks from PCB transformers stored in the area in the past. Area 14, also a portion of OU2, was used as a pesticide rinsate disposal area. At the Seaplane Base, where five contaminated sites were grouped to form OU4, storm drains were found contaminated as a result of past disposal activities. The Navy will determine if removal actions such as the excavation of the PCB- and pesticide-contaminated soil and the cleanup of the storm drains will be conducted, based on Phase II sampling results. The Interim Remedial Action planned for Area 6 landfill is expected to begin early Fiscal Year (FY) 1993.

Removal of USTs will continue and excavation and treatment of soil contaminated with petroleum hydrocarbons as a result of USTs will be conducted in FY 1993.

References

1. "UST Removal, Closure, and Assessment Report," January 1992.
2. "Draft Feasibility Study Report for Whidbey Naval Air Station," June 1992.
3. "Draft Final Remedial Investigation Report," June 1992.
4. "Draft Community Relations Plan for Superfund Activities at Whidbey Island NAS," June 1991.

Brunswick Naval Air Station, ME

At Brunswick Naval Air Station, the Navy has expedited cleanup through the use of focused Feasibility Studies, and an overlap approach whereby proposed plans are initiated before the final feasibility study is completed. These approaches can reduce the time needed to complete the remedial phase by as much as six months. In addition, the Navy has signed two interim RODs, and thereby minimized the potential health risk to nearby residents.

Background

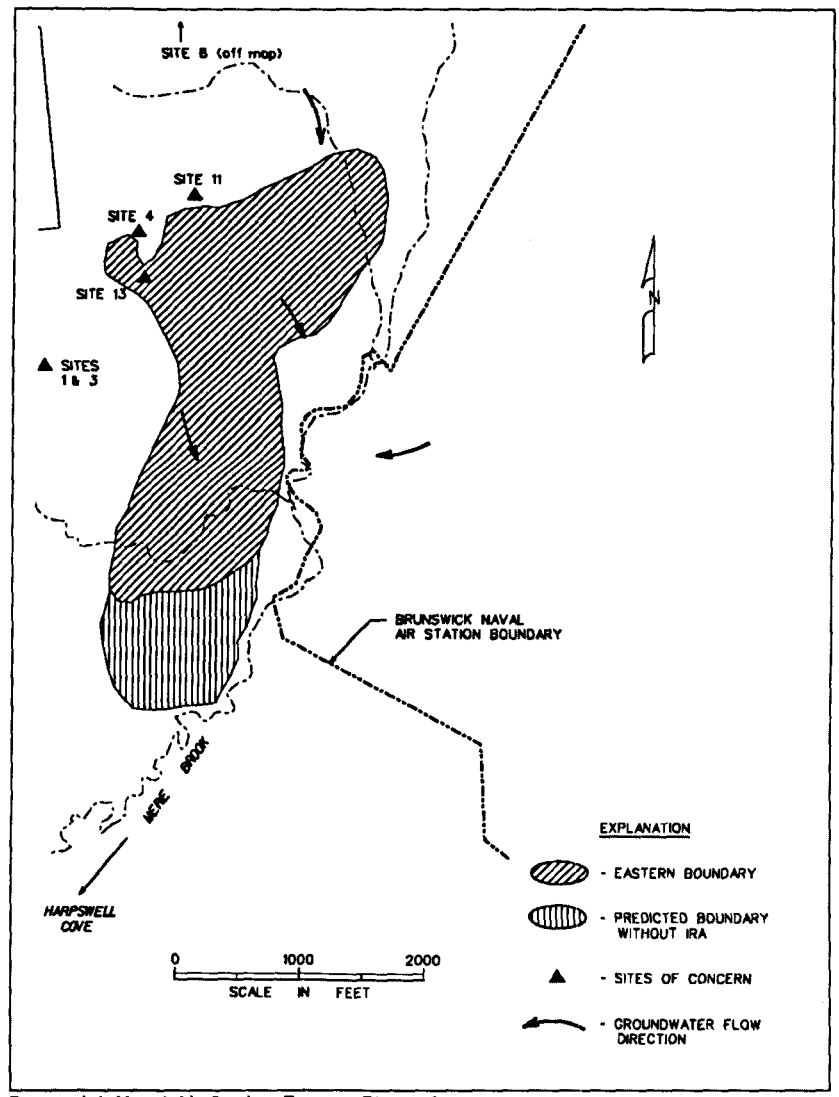
Brunswick Naval Air Station (NAS) is an active facility supporting the Navy's antisubmarine warfare operations in the Atlantic Ocean and Mediterranean Sea. The installation's primary mission is to operate and maintain P-3 Orion aircraft. Early hazardous waste investigations at Brunswick NAS were conducted under the Navy Assessment and Control of Installation Pollutants (NACIP) program which was later restructured and renamed the Installation Restoration (IR) Program to be consistent with CERCLA and SARA.

In 1981, the Chief of Naval Operations nominated Brunswick NAS to be one of the first Navy activities to undergo review of past hazardous waste practices under the NACIP program. An Initial Assessment Study (IAS), completed in 1983, confirmed the presence of past disposal or spill sites that contain hazardous wastes. Past disposal practices started as far back as the 1940s when the installation became active. The installation was placed on the National Priorities List (NPL) in 1987. In 1990, the Navy entered into a Federal Facility Agreement (FFA) with the EPA and the Maine Department of Environmental Protection for the cleanup of contamination at Brunswick NAS. The Navy is currently investigating 13 contaminated sites.

A Navy Approach to Expediting IRP Activities

In order to accelerate the FS/ROD/RD process at Brunswick NAS, the Navy completed Focused Feasibility Studies (FFS) at Sites 1 and 3, and Site 8 (see installation map below). In this approach, the feasibility study is conducted for critical sites separately from the overall FS to speed up the transition of these sites from the study phase into the cleanup phase without being constrained to a schedule that is based on the status of other sites.

Further, the Navy is using an overlap approach to speed up actions within the IRP process. This involves the initiation of the Proposed Plan for remediation before the final feasibility study is completed, and the development of remedial design before the Record of Decision is finalized. This approach can reduce the time needed to reach the remedial phase by at least six months. In order to conduct this process successfully, a high level of effort is required by all involved parties to participate and provide comments early in the process and reach an informal agreement on future activities planned for each phase. Also, this requires the Navy to keep the community well informed on these issues.



Brunswick Naval Air Station Eastern Plume Area

Two Records of Decision for Brunswick NAS

In June 1992, two interim Records of Decision (RODs) were completed and signed by the Navy and EPA for Brunswick NAS. These RODs are aimed at controlling and containing the spread of known contamination at several sites until all investigations are completed and an overall plan is developed to remove contamination from all sites. This will minimize the potential health risk associated with migration of contaminant off the installation. They are the first RODs reached in the air station's installation restoration program that address former waste sites. The first ROD addresses a selected interim remedial action (IRA) that provides containment of landfill wastes and contaminated ground water at Sites 1 and 3. Based on the proximity of Sites 1 and 3, common historical land use, and hydrogeologic characteristics, the two sites are combined and addressed as one site in the ROD. The two sites operated as disposal areas between 1955 and 1975. Wastes disposed of included solvents, paints, pesticides, petroleum products, and oils. The contaminants found include volatile and semi-volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons, pesticides, and inorganic compounds. The Navy evaluated a total of six potential remedial alternatives addressing the contaminants of concern. The final selected remedy includes containment by constructing a cap over the landfills and a slurry wall around the waste to divert clean water away from the landfills. Contaminated ground water contained by the cap and slurry wall will be pumped through extraction wells and treated by ultraviolet (UV) oxidation to destroy organic compounds. The future discharge of the treated water in the Brunswick Publicly-Owned Treatment Works (POTW) is pending POTW approval. Ground water cleanup levels for contaminants have been set at the Maximum Contaminant Levels (MCL) (see table for cleanup levels).

Proposed Cleanup Levels for Sites 1 and 3
Proposed Plan: Sites 1 and 3

Medium	Maximum Concentration Detected at NAS	Target Clean-up Level	Rationale
HUMAN HEALTH			
Groundwater			
Arsenic	107 µg/L	50 µg/L	MCL[1,3]
Vinyl Chloride	180 µg/L	2 µg/L	MCL[4]
Methylene Chloride	460 µg/L	5 µg/L	MCL (p)
1,2-Dichloroethylene (cis)	140 µg/L	70 µg/L	MCL[3]
1,2-Dichloroethylene (trans)	140 µg/L	100 µg/L	MCL[(3)]
Chromium (total)	11 µg/L	100 µg/L	MCL (p)[2]
Lead	60 µg/L	5 µg/L (at source)	MCL
Nickel	78 µg/L	100 µg/L	MCL (p)[2]
ECOLOGICAL			
Leachate Soil/Sediment			
Mercury	3.3 mg/kg	1 mg/kg	risk-based

NOTES:
MCL = Maximum Contaminant Level
MCL(p) = Proposed Maximum Contaminant Level
mg/kg = milligrams per kilogram
µg/L = Micrograms per liter

[1] = The MCL for arsenic is currently under review; USEPA 1991a.
[2] = MCL (p) is equal to MCLG.
[3] = USEPA 1991b.
[4] = MEG for Vinyl Chloride is 0.2 µg/L

The second ROD describes an Interim Remedial Action (IRA) for the Eastern Plume, to prevent further migration of the plume. The Eastern Plume is a result of contamination at the Acid/Caustic Pit (Site 4), the former Fire Training Area (Site 11), and the Defense Reutilization and Marketing Office (DRMO) (Site 13). The principal threat associated with the plume is the discharge of contaminated water into Mere Brook which further discharges into the Harpswell Cove estuary. Studies conducted by the Navy show that without any effort to stop the migration of the plume, the contamination will reach the discharge zone in approximately five years. The contaminants of concern are primarily volatile organic compounds (VOCs). The potential threat to human health was determined not to be an immediate threat because water from the contaminated plume is not currently used as a drinking water supply. With the implementation of the IRA, migration of the contamination into the estuary can be stopped and a reduction of contaminant concentrations in the ground water can be achieved until a final remedy is chosen. The IRA involves the installation of extraction wells, the treatment of contaminated ground water using ultraviolet (UV) light/oxidation, and finally, the discharge of the treated water into the Brunswick POTW. Discharge to the POTW has not yet been approved.

The remedial design (RD) is underway for each of the selected interim remedial actions described in the RODs. The RD field program began in April 1992 and consists of geotechnical investigation and ground water treatability testing. Geotechnical activities include testing to determine the thickness and depth of the clay layer, the installation of soil borings to characterize soils along the slurry wall and within the landfill limits, and the placement of gas probes in the landfill to detect landfill-generated gases. Further, a bench-scale ground water treatability study was initiated in May 1992 to obtain quantitative data to determine the appropriate design process for treating the contaminated water.

Public Participates in Brunswick NAS Issues

The Navy is continuously keeping the community of Brunswick informed about remediation activities at Brunswick NAS through informational meetings, fact sheets, press releases, general public and Technical Review Committee (TRC) meetings. The Navy first informed the public about the presence of past waste disposal areas at the base in 1981 when these areas were identified as potential sources of contamination. In 1987, the Navy established an information repository at the local library for public review of site-related documents. In 1988, the Navy released a Community Relations Plan describing a program that will address community concerns and disseminate information to the community. Further, the TRC, formed in 1988, has served as an important link between the Navy, EPA, and the State of Maine Department of Environmental Protection, and the public, and has provided an important vehicle for public participation. Several informational meetings have also been held to discuss RI findings and proposed remedial plans. Finally, in 1992, the community received a Technical Assistance Grant (TAG) from EPA to review and interpret the Navy Program at Brunswick NAS. The Figure below shows the significant events in the IRP at Brunswick NAS.

Future Activities

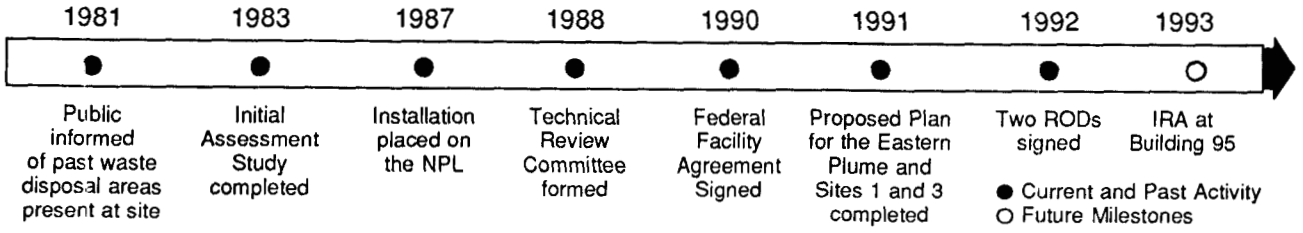
The Navy is planning several actions for 1993 at Brunswick NAS. A "non-time-critical" removal action will be conducted at Building 95 where soils have been contaminated with pesticides and herbicides. This action, by definition, is an IRA that can involve more than six months planning before response actions must begin. The chemicals found were used between 1955 and 1983 and include primarily pesticides. Polynuclear aromatic hydrocarbon (PAH), used as a liquid carrier in the application of pesticides was also found in soils in the vicinity of Building 95. An Engineering Evaluation and Cost Analysis (EE/CA) was prepared to document the identification and evaluation of removal actions in support of "non-time-critical" removal action. The Navy will select and implement one of the alternatives proposed in the EE/CA which will consist of constructing a soil cover over the contaminated soils to prevent contact by humans or ecological receptors, excavating the top 2 foot soil layer for off-site incineration, or excavating contaminated soil for on-site treatment by solvent extraction. The EE/CA serves as the basis for an Action Memorandum which provides the written record of the selection of the remedial alternative after it is approved by the regulatory agencies.

Soil Gas Studies, Site 1

Other future activities include the construction and operation of the remedial systems selected for Sites 1 and 3 and the Eastern Plume. Further, the Navy will conduct a risk assessment at the completion of the ground water remediation. If the excess cancer risks are greater than a one-in-one-thousand lifetime risk, the Navy will implement additional remedial actions.

In addition, to further accelerate the cleanup process, the Navy is currently preparing proposed plans and remedial designs concurrently for Sites 5, 6, 8, and 9. Remedial Action is expected in 1993.

CLEANUP TIMELINE



References

1. "Record of Decision for an Interim Remedial Action at the Eastern Plume Ground Water Operable Unit, Brunswick NAS, Maine," June 1992.
2. "Record of Decision for a Remedial Action at Sites 1 and 3, Brunswick NAS, Maine, June 1992.
3. "Draft Remedial Design Work Plan, Sites 1 and 3 and Eastern Plume," July 1992.
4. "Draft Engineering Evaluation/Cost Analysis, Building 95, Volume 1, August 1992.
5. "Proposed Plan, Eastern Plume," December 1991.
6. "Proposed Plan, Sites 1 and 3," December 1991.

Accelerated Cleanups at Moffett Field NAS, CA

At Moffett Field NAS, EPA, and the State of California have formally agreed to a modified schedule that will allow cleanup to begin more than three years earlier than previously planned. The cleanup will be expedited organizing the existing 19 IRP sites into six operable units (OUs) with different schedules. This will allow individual OUs to progress independently through the cleanup process, rather than delaying remedial activities until agreement is reached on cleanup base-wide.

In addition, three source control activities are currently being implemented: a pump and treat system to control petroleum hydrocarbons migration from several excavated leaking tanks; excavation and bioremediation of petroleum hydrocarbon-contaminated soil; and the January 1993 construction of a pump and treat system to control fuels and chlorinated solvents migration from an abandoned fuel farm and a former dry cleaning facility.

Cleanup of PCB-Contaminated Soil at Naval Supply Center Pearl City Junction, HI

The Navy has removed and disposed of 954 cubic yards of PCB-contaminated soils in an open storage area at Naval Supply Center, Pearl City Junction, Hawaii. Completion of removal and disposal of approximately 26 cubic yards remaining is expected by November 1992. Building 4 and the adjacent open storage area were used for storage of various supply materials, including electrical transformers containing PCB oil. The Navy is transferring this property to the State of Hawaii, and the cleanup is being expedited to ensure cleanup prior to land transfer.

X-Ray Cooling Water Remediation NSWC-Indian Head, MD

The Navy is using solidification/stabilization to treat soils contaminated with silver from past X-ray photography activities.

The silver contamination resulted from the discharge of X-ray photographic rinse water from Building 730 at the Naval Surface Weapons Center at Indian Head, Maryland, during the period 1953 to 1965.

Seven-hundred twenty pounds of silver solution were spread over 600 feet of drainage swales. A study conducted in 1991 revealed sediment concentrations of silver to be as high as 570 ppm. Higher concentrations were adjacent to the building, with decreasing concentrations at downstream locations indicating a continued migration of silver through sediment/surface water flow within the drainage system. TCLP testing showed that the contaminated sediment was not characteristically hazardous. A risk assessment concluded a borderline risk to site workers but a significant risk to aquatic invertebrates. The Navy, with the Maryland Department of Environment, selected a remedy which would excavate soils/sediments exhibiting silver concentrations greater than 10 ppm, treat the excavated soil using solidification/stabilization technology, and provide long-term management through incorporation of the treated material within an on-site explosion berm. This remedy will give the Navy an alternative to costly off-site disposal and possible PRP responsibilities. It will also be consistent with the construction of an explosion berm required for a military construction project.

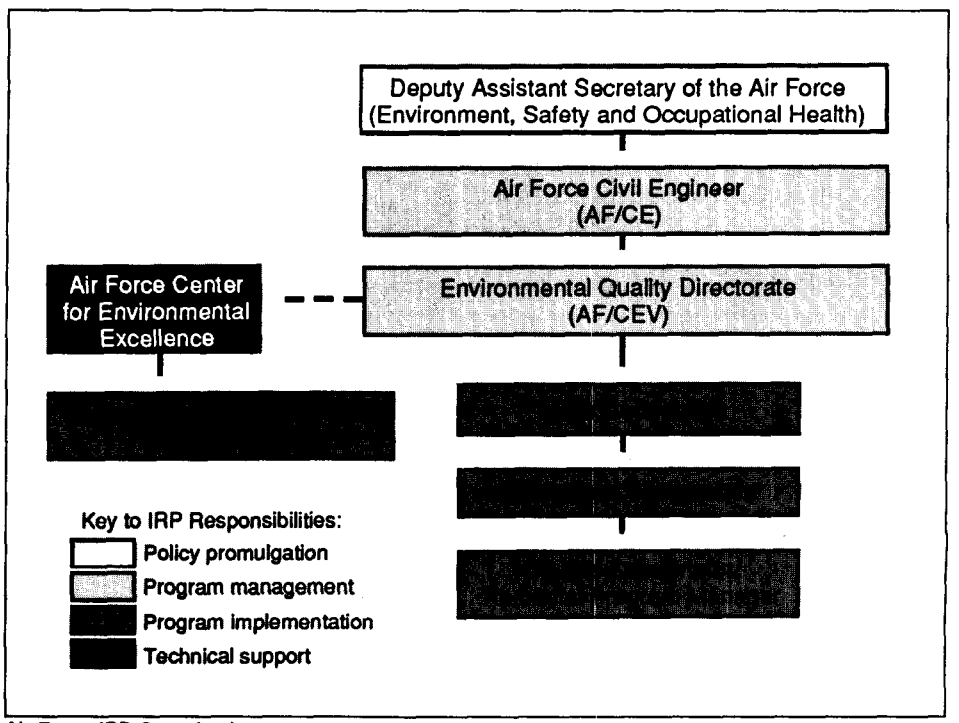
Air Force IRP Progress

An additional Air Force installation, Andersen AFB, Guam, was proposed for the NPL in 1992. The total number of sites at Air Force installations increased slightly from 4,354 to 4,474. By the end of FY 1992, IRP activities were complete and no further remedial actions were planned at 1,283 Air Force sites, an increase of more than 50 percent over FY 1991 totals.

The Air Force has identified its cleanup strategy as a "bias for action"–getting out of the study stage by closing out the sites posing no risk or moving into the cleanup phase. This task has been especially challenging because of pressure by regulatory agencies to more thoroughly characterize and study sites. The Air Force is working aggressively with EPA and state regulators to reduce the time and cost of cleanup.

In addition, in FY 1992, the Air Force made significant progress in five distinct areas: management action plans, training, contracting, cost estimating and development of generic cleanup protocols.

- Management Action Plans (MAP) – The MAP is a summary of the status of the environmental restoration and compliance programs at each installation. In addition, the MAP outlines the strategy for implementing the environmental restoration response actions necessary to protect human health and the environment. The MAP guidebook was finalized in May 1992 and six regional workshops were conducted for RPMs and State and Federal representatives. Draft MAPs are scheduled to be completed for all bases by the end of December 1992.



Air Force IRP Organization

- Training – The Air Force continued environmental leadership courses during 1992. By the end of the year, all senior officers in all major commands had received training. The Air Force offered a variety of other courses during FY 1992 (see "Training of DoD Personnel in DERP Activities" section in this report).

- Contracting – The Air Force implemented guidance for the use of a single contractor for site study and assessment.

- Cost Estimating – The first phase of a parametric cost estimating software was completed. The software, which is used to estimate the cost of all phases of cleanup, was distributed and ten training classes conducted.

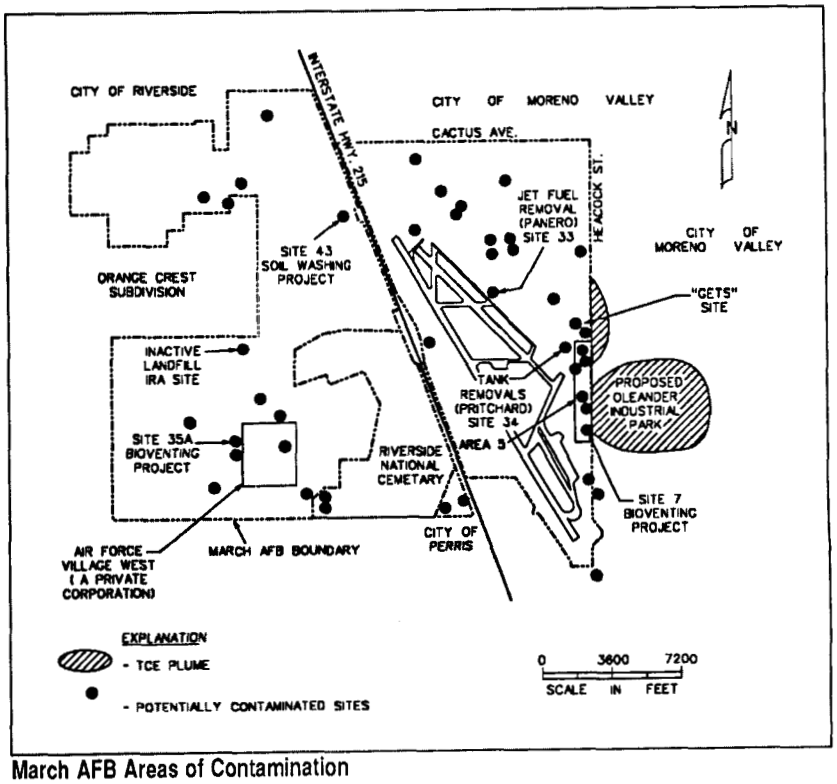
- Generic Cleanup Protocol – The Air Force implemented a generic protocol for the cleanup of petroleum contaminated sites using bioventing technology. The protocol which has been endorsed by EPA, will be implemented at 35 sites at 20 installations throughout the country.

The Air Force's major accomplishments in FY 1992 included increasing the number of closed-out sites and registering significant progress in RI/FS and RD/RA work. In past years, limited funding has restricted the Air Force to addressing only contamination at NPL installations and a few non-NPL installations. The additional funding received in FY 1992 allowed the Air Force to expand the assessment of potential contamination to all Air Force installations.

The number of closed-out sites increased from 834 to 1,283 in FY 1992. The number of sites at which RA is complete increased from 150 to 196 in FY 1992. By the end of the year, 122 IRAs had been completed and 54 were underway.

During FY 1992, the Air Force completed and signed IAGs for three NPL installations. This brought the total number of Air Force NPL installations with signed IAGs to 30. RI/FS activities are underway or complete at all of these NPL facilities. Remedial actions and IRAs have occurred at all of the 32 Air Force NPL facilities. RODs were signed at six Air Force installations in FY 1992, bringing the total number of Air Force installations with at least one signed ROD to ten.

The following are examples of significant Air Force IRP project activities. These studies illustrate cleanup progress and community relation activities at several installations, including an active base, March Air Force Base, CA, and a closure base, Pease Air Force Base, NH. (Appendix B provides additional details for installations on the NPL.)



March AFB Areas of Contamination

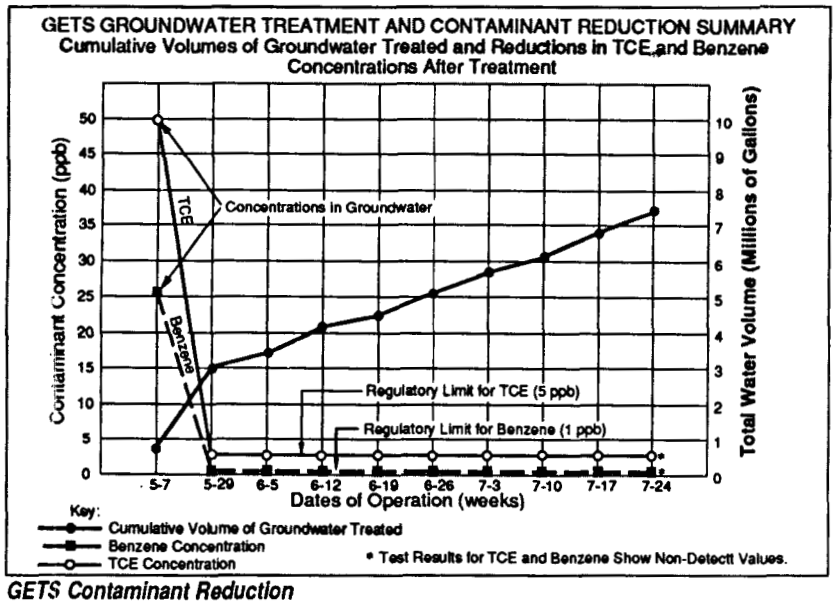
March Air Force Base, Riverside, CA

Solvent-contaminated ground water migrating off March Air Force Base (AFB), near Riverside, California, is being interdicted and treated by a pump-and-treat system. The system started operation on May 22, 1992 and is meeting and even exceeding State of California maximum contaminant levels for organic contaminants in ground water. This system will prevent migration of ground water contaminants off-base and further contamination of several drinking water wells located adjacent to the installation. In addition, March AFB is actively identifying other immediate threats to public health and the environment and taking action to reduce those risks.

Area 5 and Site 4 Groundwater Contaminants and Regulatory Limits in ppb

Contaminant	Groundwater Concentrations Detected	Regulatory Limit*
Benzene	<0.2 - 26.0	1.0
Carbon Tetrachloride	<0.12 - 2.1	0.5
Trichloroethylene	<0.12 - 50.0	5.0
Tetrachloroethylene	<0.03 - 170.0	5.0
Trans-1,2-Dichloroethylene	<0.1 - 38.0	10.0
Vinyl Chloride	<0.18 - 5.6	0.5

*State of California Maximum Contaminant Levels (MCLs).



GETS Contaminant Reduction

Installation Setting and History

March AFB is located on 7,123 acres about 60 miles east of downtown Los Angeles near Riverside, California. Moreno Valley, a city of approximately 120,000 people, is immediately adjacent to the base boundaries on the north and east sides of the base. An endangered species, the Stephen's kangaroo rat, and a sizable population of burrowing owls (a California species of special concern) are protected on the base.

March AFB was originally opened in 1918. It was the first U.S. Army Air Base established in the western United States. Currently, March AFB is used primarily to maintain an effective air-to-air refueling operations capability. March AFB was placed on the NPL in October 1989; a Federal Facility Agreement (FFA) was signed in 1990. The FFA divided the IRP sites into three operable units.

Ground Water Contamination

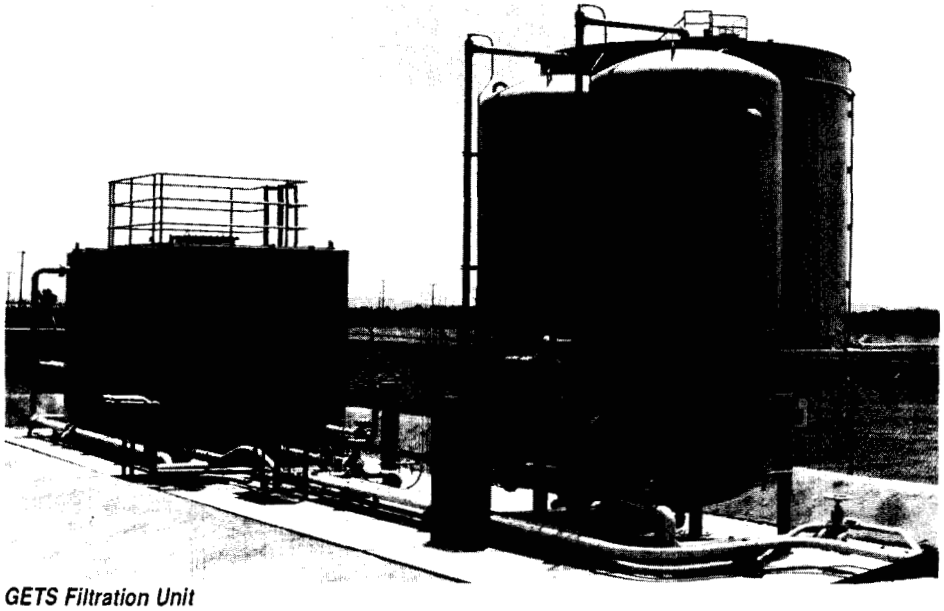
The most probable source of contaminated ground water flowing off-base is Area 5, which is located on the eastern border of the base (see map). Area 5 includes an inactive landfill (IRP Site 5), two inactive fire training areas (IRP Sites 7 and 29), and a main oil/water separator, a system that prevents oil from washing into drainage channels (IRP Site 9). The principal ground water contaminants that have been detected are trichloroethylene (TCE), tetrachloroethylene (PCE), and trans-1-2-dichloroethylene. Concentrations range from 170 parts per billion (ppb) of PCE and 130 ppb TCE on base, to 15 ppb TCE in one off-base private well. The table on Page 38 shows ground water concentrations for various contaminants and the regulatory limits that will be used as standards for those contaminants.

Interim Response Action: Provision of Alternate Water Supplies

During an early investigation of ground water contamination, the Air Force found that contamination from adjacent areas had polluted one well on base, and had migrated off the base and contaminated five private drinking water wells. The contaminated well on base was taken out of service. The base began supplying bottled water to the off-base well owners in 1986. The Air Force then contracted with the local water company to extend its water mains to the homes with contaminated wells.

Interim Response Action: Ground Water Extraction and Treatment System (GETS)

To prevent further migration of contaminated ground water off-base, the Air Force installed a ground water extraction and treatment system (GETS). GETS consists of a carbon adsorption treatment system connected to a series of nine wells that are placed like a fence along the eastern boundary of the installation. One-hundred thousand gallons of contaminated water per day is extracted and pumped through the carbon adsorption unit. The diagram on this page shows the



GETS Filtration Unit

progress of the system in terms of the cumulative volume of ground water treated over time and the effluent contaminant reductions achieved for benzene and TCE. The diagram on the next page shows how the system operates.

The effluent from the system meets or exceeds Federal and California drinking water standards. This water is then used to irrigate the base golf course, and ultimately to recharge the aquifer.

GETS became fully operational May 18, 1992. The U.S. Environmental Protection Agency (EPA) recently commended the base for surmounting some start-up problems and bringing this project on line quickly.

> ***"It is obvious that it was the very good efforts on the part of March Air Force Base...that turned this project around and brought the start-up of this facility after EPA had expressed concern. I want to thank you for your efforts, and I hope that you will pass along the words "job well done" to those others on your team responsible for bringing this project to completion."***
>
> **Richard T. Russell, P.E.**
> **Remedial Project Manager**
> **U.S. EPA Region IX**

Other Remedial Activities

Base-wide investigations have revealed 43 potentially-contaminated sites (see map). Where necessary, the Air Force has conducted emergency response actions to eliminate immediate threats to base personnel and surrounding communities and to stabilize the site. For example, in January 1992, the Air Force discovered metal drums and construction debris in an old, on-base inactive landfill. Heavy rains and resulting storm water runoff had eroded soil in a drainage channel revealing this potentially hazardous material. The Air Force acted promptly to warn regulators and the public of the potential hazard, and posted warning signs, put up a fence around the site, and took samples of the materials and sent them to a laboratory for analysis. Test results indicate that no immediate threat existed. However, since the materials were located on base property, there was a potential for contaminant migration as a result of continued storm water discharges.

Analysis of the materials at the inactive landfill revealed elevated levels of lead and hydrocarbons. The Air Force met with Federal, state and county regulators to determine appropriate actions. The Air Force is implementing site stabilization actions which include steps to divert and control storm water flow such as installation of rock check dams, and excavation of 5,000 cubic yards of soil to form shallow impoundments.

Other interim remedial actions were taken in FY 1992 including removal of 6,046 gallons of jet fuel floating on top of the ground water and 34 50,000-gallon tanks and associated piping and support equipment from the Panero Aircraft fueling system (Site 33) along with the removal of six 50,000-gallon tanks from the Pritchard aircraft fueling system (Site 34).

In addition to these immediate removal actions, a schedule for the long-term cleanup of the base has been developed. A base-wide RI/FS is planned for completion in August of 1995, a base-wide proposed cleanup plan is expected in September of 1995, and a base-wide Record of Decision will be completed in March of 1996. The base cleanup timeline is shown on the next page.

Fence and Warning Signs at Old Landfill Site

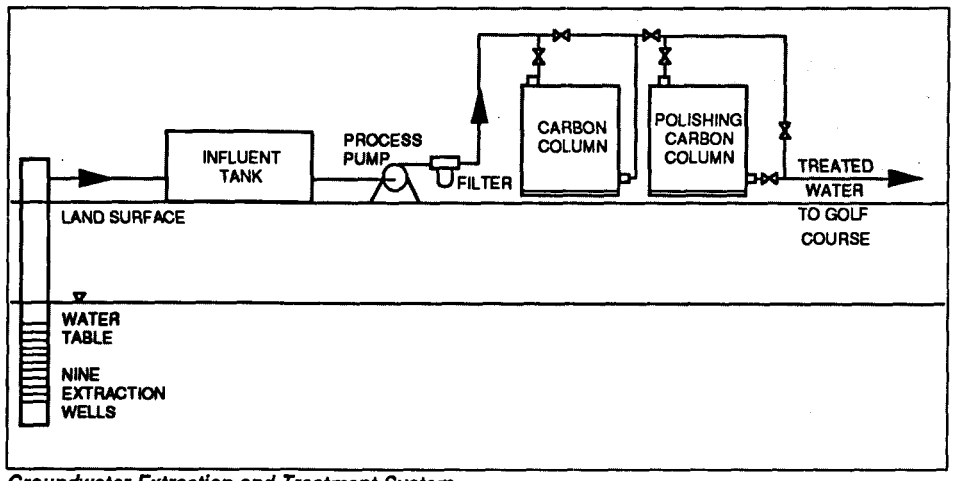
Air Force will use Innovative Technologies to Accelerate Cleanup Schedules

The Air Force is considering the use of several innovative cleanup technologies. These include soil washing and bioventing. In addition, the base is proposing to the regulatory agencies that sites contaminated with low levels of hydrocarbons be cleaned up using low

temperature thermal incineration in lieu of being included in the lengthy RI/FS process for the base. March AFB, in cooperation with the regulators, has proposed to accelerate remedial action at OU3 from January 1995 to September 1993.

The EPA has selected a former gasoline pump island in an isolated portion of the western side of the base as the location for the test of a soil washing project. The project is part of EPA's Superfund Innovative Technology Evaluation (SITE) program. The technology will be used to treat soil contaminated with organic compounds, such as gasoline and diesel fuels. The soil washing project is scheduled to start during FY 1993.

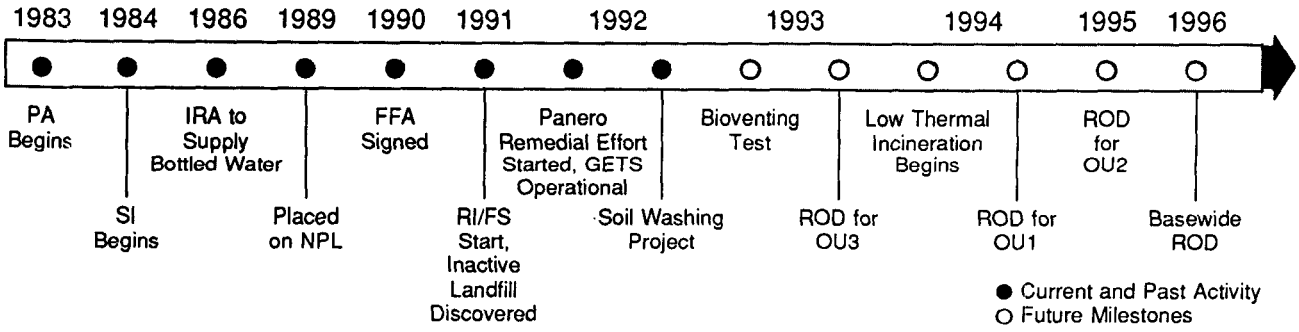
During the process, contaminated soil is excavated and fed into a "washer" where a special cleaning agent is added and mixed with the soil. In addition to cleaning the soil, the cleaner stimulates common soil microbes that digest the hydrocarbons and break them down into harmless substances. Investigations are continuing to locate additional sites for cleanup with this treatment.



Groundwater Extraction and Treatment System

Another innovative treatment planned for March AFB is bioventing, which is also used to treat petroleum-contaminated soil. This treatment consists of injecting oxygen or nutrients into the soil to stimulate the growth of hydrocarbon-eating microbes. The bioventing test is scheduled to begin in January 1993 at Site 35a or Site 7.

CLEANUP TIMELINE



References

1. The Earth Technology Corporation, "Installation Restoration Program Remedial Investigation Feasibility Study Final Base-Wide Workplan, March Air Force Base, California," Prepared for the United States Air Force, January 1992.
2. Environmental Management, 22nd Civil Engineering Squadron, March AFB, California, "Fact Sheet: Soil Cleaning Project at March AFB," August 24, 1992.
3. Environmental Management, 22nd Civil Engineering Squadron, March AFB, California, "Ground Water Cleanup at East March AFB and Ground Water Extraction and Treatment System," May 20, 1992.
4. Gary Polakovic, "Base Waste Dump Found in Gravel Pit," *The Press Enterprise.*
5. Richard T. Russell, P.E., Remedial Project Manager, United States Environmental Protection Agency, Region IX, Letter to John R. Sabol, P.E., Program Manager, Installation Restoration Program, March AFB, May 27, 1992.

Pease Air Force Base, Newington, NH

Pease Air Force Base is a successful example of how environmental cleanup and cleanup-related compliance activities can be coordinated so that property disposal and reuse goals can be met at a closing installation. Key to this coordination is comprehensive planning to integrate cleanup with reuse concerns and close cooperation among the installation and Federal, state, and local authorities.

Background

The base is located in a commercial and residential area, about 60 miles north of Boston, in coastal southeastern New Hampshire. The Great Bay, a National Estuarine Research Reserve, adjoins the base along 6.5 miles of shoreline. This area is used for recreation and fishing for shellfish. The base covers 4,356 acres, of which about 2,600 acres of the base are forested, 57 acres are ponds, and approximately 800 acres are wetlands.

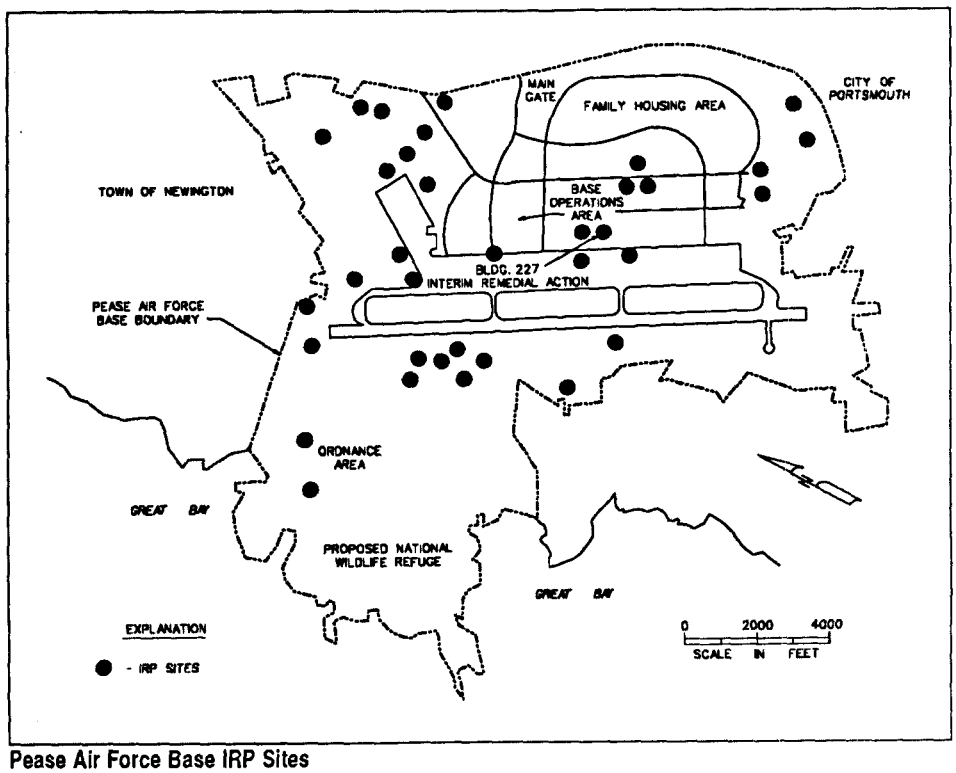
Pease AFB was ranked by the EPA in 1989 and was listed on the NPL in 1990. Its listing was based, in part, on contaminants that include organic solvents and degreasing agents, pesticides and herbicides, paint thinners and strippers, and petroleum products (primarily fuels and lubricating oils). Thirty-two hazardous waste sites were identified at the beginning of the IRP at Pease AFB in 1983.

In April 1991, the Air Force, EPA Region 1, and the NHDES signed a Federal Facility Agreement (FFA) in which the Air Force agreed to undertake, seek adequate funding for, fully implement, and report on all base environmental restoration efforts for 23 areas of concern identified under the IRP (see map below). In addition, the Air Force agreed to further review eight additional waste locations and to conduct a second base-wide PA/SI to ensure all potential waste sites were identified.

The second PA/SI was published in February 1991. In addition to 23 areas of concern identified in the ongoing IRP, 21 points of interest were identified in the PA/SI, of which seven were designated for no further action. Follow-up SIs or RIs are being conducted on the remaining 14 locations. Other locations under investigation and/or remediation include Buildings 120, 119, 213, and 215; underground storage tanks; and hangar-building 227.

Closure and Plans for Reuse

On March 31, 1991, Pease AFB became the first major military installation to be closed in the United States under the Base Realignment and Closure Act of 1988 (Public Law 100-520). The key to the reuse of Pease is the development over a 20-year period of an international airport. Commercial trade, manufacturing and aviation-related activities would be developed in adjacent areas. This concept also includes the conservation of about 1,100 acres of land for a National Wildlife Refuge, preservation of land for public recreation (golf course), and the retention of land by Air Force for use by the Air National Guard. Air Force disposal of property at Pease may also involve the transfer of land parcels to other government agencies or private entities for related commercial and industrial development.



Pease Air Force Base IRP Sites

In compliance with NEPA, the Air Force has completed an Environmental Impact Study (EIS) for the disposal and reuse of the base. During the preparation of the EIS, the Federal Aviation Administration and the Department of the Interior were invited to participate as cooperating Agencies. The DOI shared jurisdiction because of the proposed inclusion of part of Pease AFB in the National Wildlife Refuge System while the FAA was invited as sponsor of the Pease Development Authority (PDA) airport authority. The PDA intends to reuse the runway and associated facilities as an airport.

The completion of the EIS process led to the signing of a Record of Decision (ROD) that stated the Air Force's intention regarding disposition of the base property. The ROD was signed August 20, 1991, dividing the base into 13 parcels.

Coordinating the Cleanup Process with Reuse

Federal law (Section 120(h) of CERCLA) requires that the Federal Government remediate contaminated properties before they can be transferred by DoD to private entities. Therefore, it has been necessary to lease contaminated properties that have no immediate health threat in order to achieve property reuse goals. In addition, the Air Force has developed a comprehensive strategy that integrates cleanup efforts with property transfer goals and requires close coordination with other Federal, State and local authorities.

This approach involves the grouping of sites into geographic zones that consider reuse goals, the identification of contaminated versus uncontaminated areas, the organization of contaminated areas into operable units, and the use of interim remedial actions.

In addition, Pease AFB has used an Environmental Baseline Survey (EBS) to identify portions of property that may or may not be contaminated with hazardous wastes. Information obtained from site inspections and document reviews was used to classify properties into one of three categories based on contamination present and potential for exposure. This information was evaluated in deciding the future disposition of the properties.

Operable Unit/Zone Strategy

In order to expedite the cleanup process at Pease AFB, the U.S. Air Force has grouped the IRP sites on the installation into Operable Units or Zones. Sites are grouped and identified by the type of media (e.g. ground water, soil) and by geographic areas. Each OU or Zone has its own set of deadlines for RI/FS reports, proposed plans, and RODs. This approach allows investigations for separate OUs to proceed independently, at an accelerated pace, instead of delaying progress at those sites until agreement on cleanup procedures has been reached at all sites throughout the installation.

Interim Remedial Actions

In 1984, an aeration system was installed to remove TCE from the base water supply. The system was successful in reducing TCE concentrations below detectable levels, and its operation was discontinued. A number of other remedial activities have been implemented at Pease: three pilot ground water treatment systems are currently being operated at the base, underground storage tanks have been excavated and removed, buried drums discovered during the investigation were excavated and removed, and soils in the vicinity of the tanks and the drums have been chemically characterized. In cases where the soils have been found to be contaminated, they have been excavated and removed for treatment. Through its ongoing IRP activities, the Air Force is addressing the contamination as it is found at various sites across the base.

Interagency Coordination

To accomplish an accelerated effort, the Air Force has acted in partnership and cooperation with the State of New Hampshire Department of Environmental Services (NHDES), EPA Region 1, and the Pease Development Authority (PDA, a state chartered redevelopment authority) to develop plans for future base reuse and to implement cleanup actions at the base. Other state, Federal and local agencies and the public have been crucial in the planning and assessment of alternatives for base disposal and reuse. This close coordination has shortened regulatory review, compressed cleanup schedules, and integrated cleanup with reuse activities. For example, the integration of zones, leading to the development of consolidated RODs, has required revamping of schedules established in the Federal Facility Agreement. Close communication between the installation and regulators has facilitated this process and eliminated a potential stumbling block for the rapid cleanup and turnover of the property for beneficial economic reuse.

"One of the most successful decisions at Pease was to establish a team on-site consisting of the Disposal Site Manager, and a representative of the secretariat's and Air Force Base Disposal Agency Pentagon staff."

Robert Cheney
National Association of Installation Developers

References

1. J. G. Cooper, Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations and Environment) "Record of Decision, Disposal and Reuse of Pease AFB, Final Environmental Impact Statement," Portsmouth, New Hampshire, August 20, 1991.
2. J. G. Cooper, Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations and Environment) "Supplemental Record of Decision for the Disposal and Reuse of Pease AFB, Portsmouth, New Hampshire," April 13, 1992.
3. Roy F. Weston, Inc., "Installation Restoration Program Community Relations Plan," Draft Report for Pease Air Force Base, New Hampshire, October 1990.
4. U.S. Air Force, "Installation Restoration Program Update: Pease Air Force Base, Information Update," December 1992.

Technical Review Committee Ensures Coordinated Cleanups at Tinker AFB, OK

In January 1985, Tinker Air Force Base became one of the first Air Force bases and the first site in its EPA region to institute a Technical Review Committee. More than seven years later, that committee is still serving as a primary means of cooperation with regulators.

The Technical Review Committee (TRC) is composed of representatives from the Oklahoma State Department of Health (OSOH), EPA's Region VI; and Tinker's Environmental Management Directorate. The Environmental Management member chairs the group. The purpose of the TRC is to help communication between Tinker and regulatory agencies. By involving all parties in the progress of Tinker's Environmental cleanup efforts, the TRC provides a coordinated direction to CERCLA NPL and IRP activities. A Technical Working Group meets a month before the TRC to discuss technical issues.

> ***"Both the Technical Review Committee and the Technical Working Group have been excellent forums to facilitate communication between Tinker and the Oklahoma State Department of Health."***
>
> **Damon Wingfield**
> **Oklahoma State**
> **Department of Health**

Innovative Technology and Public-Private Partnership at McClellan AFB, CA

McClellan AFB implemented several innovative treatment projects in FY 1992. A soil vapor extraction system was installed to clean up contaminated soils on the northwest edge of the base, and several innovative treatability studies were initiated, including steam injection vacuum extraction and soil solidification.

In addition, an agreement is being negotiated with eight private companies for a joint industry-government program to test and evaluate innovative remediation technologies at selected sites on the base.

The objective of the proposed industry-government joint testing program is to produce and exchange the much-needed cost and performance data for a variety of innovative technologies tested under "real-world" conditions. The availability of this type of information will encourage the development and use of environmentally sound, less costly solutions to hazardous waste problems. McClellan AFB was selected to participate in this program because of the wide variety of contaminated sites on base and because of substantial environmental management support structure.

NPL Cleanup is Completed at Minneapolis-St. Paul ARB, MN

On September 24, 1992, EPA notified Minneapolis-St. Paul Air Force Reserve Base that the status of the one NPL site on the installation (The Small Arms Range Landfill) is "response complete." This means that EPA will be counting MSP ARB as "cleaned up" even though the Record of Decision (ROD) requires two more years of ground water monitoring. If there is no evidence of increased levels of contamination after two years, it is expected that EPA will delete the site from the NPL.

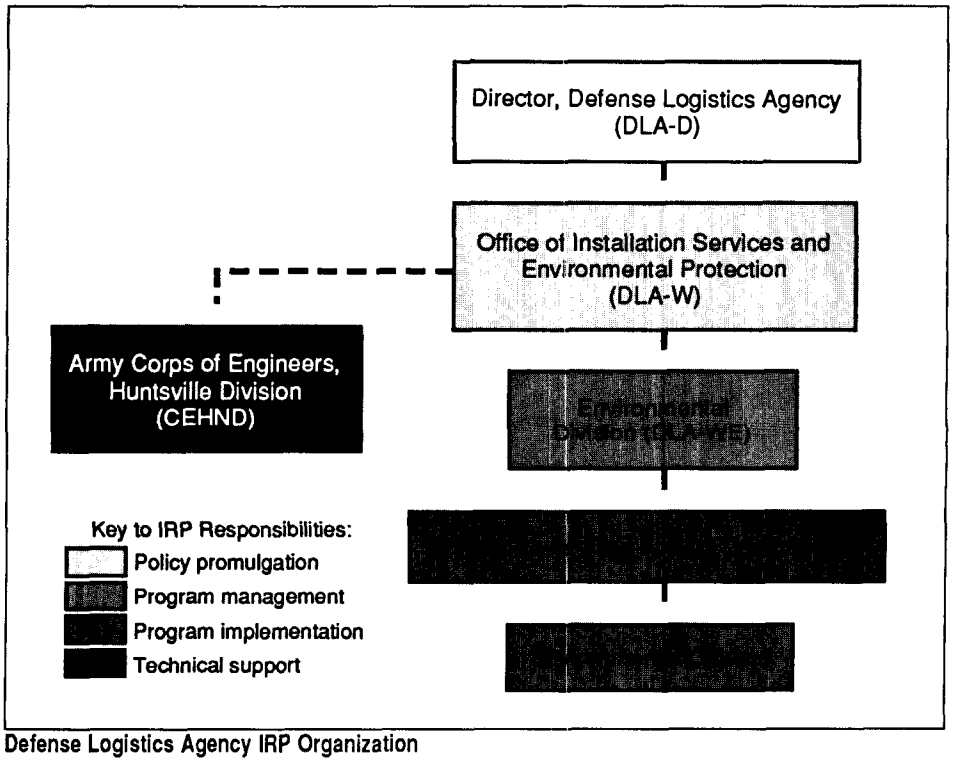
Defense Logistics Agency IRP Progress

The Defense Logistics Agency (DLA) IRP continued to show steady progress in all areas in FY 1992. The number of sites in DLA's program increased slightly in FY 1992, to 460 sites, while the number of installations remained constant at 34. IRP activities have been completed and no further remedial action is planned at 190 sites.

The increased funding received in FY 1992 by DLA was invested primarily in RI/FS and IRA work. As a result, the number of sites at which RI/FS work has been completed or is underway increased from 210 to 297 last year. This represents 88 percent of the total number of sites targeted for an RI/FS. All four DLA NPL sites had an IRA complete or underway by the end of FY 1992. Further, PA work had been completed at all but two of DLA's 460 sites. RA completions at DLA sites increased from 16 to 24 in FY 1992, an increase of 50%.

PA/SI work has been completed and RI/FS activities are underway at all four of the DLA installations final-listed on the NPL. In addition, IRAs have occurred at all of DLA's NPL facilities.

During 1992, Defense Distribution Region Central Tennessee was proposed for listing on the NPL. This brings to five the number of DLA sites on, or proposed for listing on, the NPL. No IAGs were signed in 1992.



Defense Logistics Agency IRP Organization

The following are two showcase stories explaining major DLA IRP cleanup efforts at two installations listed on the NPL. In addition, a short success story on DFSC, Cameron Station (VA) has been included. (Appendix B provides additional details for other DLA installations on the NPL.)

Defense Distribution Region West, Tracy, CA

Defense Distribution Region West (DDRW) Tracy has eliminated immediate threats to nearby residents through a series of interim remedial actions. These include the provision of alternate water supplies to affected residents and rapid installation of a pump-and-treat system to stop further migration of contaminated ground water. The State of California has praised Tracy for voluntarily expediting its ground water protection program.

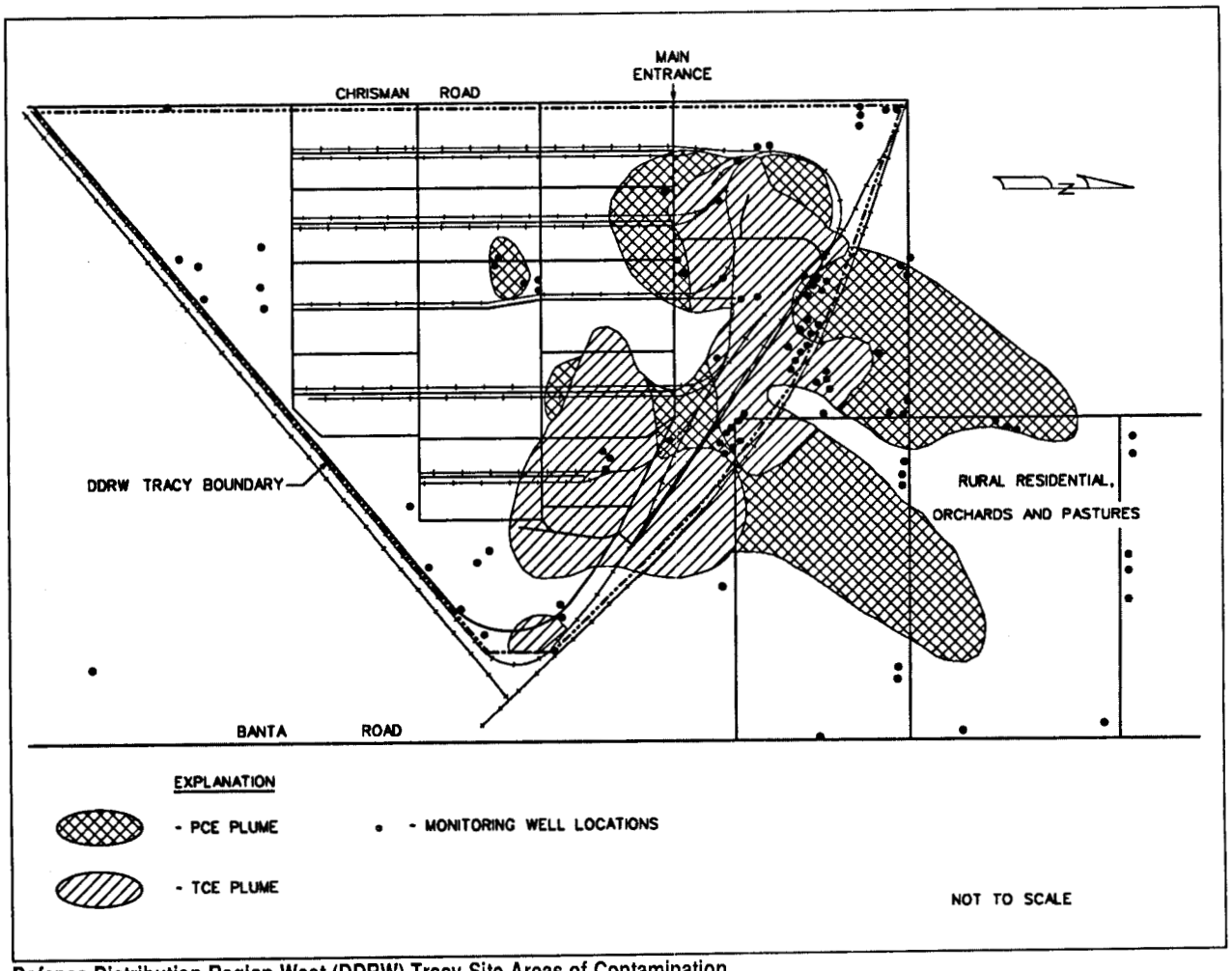
Background

Defense Distribution Region West Tracy, CA, is located 1½ miles southeast of the city of Tracy, California, and 60 miles east of San Francisco. DDRW Tracy is one of seven principal distribution depots in the Defense Logistics Agency (DLA). The depot functions as a storage and distribution facility for food, medicines, construction, clothing, electrical, industrial, and general supplies common to all U.S. military services located within the western U.S. and throughout the Pacific overseas area. In addition to handling supplies, DDRW provides support functions including preservation and repackaging, equipment modification, inspection and repair of materials returned from the field, and operates the West Coast Army Watercraft Maintenance and Storage facility at Rough and Ready Island in Stockton. The 448-acre site has been used as a depot since 1942 (See the installation map below).

Ground Water Contamination

Trichloroethylene (TCE) and perchloroethylene (PCE) were used as cleaning solvents in the depot's industrial areas until 1976. Prior to the early 1970s, many wastes such as solvents, pesticides, fuels, and lubricants were disposed of onsite by such practices as burning, discharge, soil percolation, and burial. Identified waste disposal sites include burn pits, medical supplies burial, embalming fluid dumps, construction materials burial, pesticide waste disposal trenches, lube/oil dumps, battery acid sumps, maintenance areas, fuel storage tanks, and other locations of hazardous waste disposal.

DDRW Tracy was placed on the National Priority List (NPL) on August 30, 1990, primarily due to the contamination of the ground water and its migration off-site. As



Defense Distribution Region West (DDRW) Tracy Site Areas of Contamination

a result of placement on the NPL, Tracy entered into a three-party Federal Facilities Agreement (FFA) on June 27, 1991. The agreement was between DDRW Tracy, the California Regional Water Quality Control Board (RWQCB), the U.S. Environmental Protection Agency, and the California Department of Health Services.

Previous Studies

DDRW Tracy's Preliminary Assessment/Site Inspection (PA/SI) was completed in 1980. The PA identified 32 sites of contamination on-depot with strong migration potential. Eighteen of the 32 sites were closed out as a result of the SI.

DDRW Tracy began sampling a series of 14 ground water monitoring wells to determine the quality of the water beneath the depot. This Depot Hydrogeological Study was completed in 1985. The results of the sampling indicated that in three of the monitoring wells, TCE and PCE levels in the uppermost aquifer exceeded the state action level of five parts per billion (ppb). In an attempt to identify the possible sources of the contamination and to determine if the contamination had migrated beyond the depot's property, 12 additional test wells were installed including 10 along the northern boundary. It was determined that contaminated ground water migrated approximately 2700 feet off site in a northeasterly direction. Two private, off-depot drinking water wells have been contaminated with VOCs. Figure 1 is a plan view of DDRW Tracy with the TCE and PCE contamination plumes illustrated.

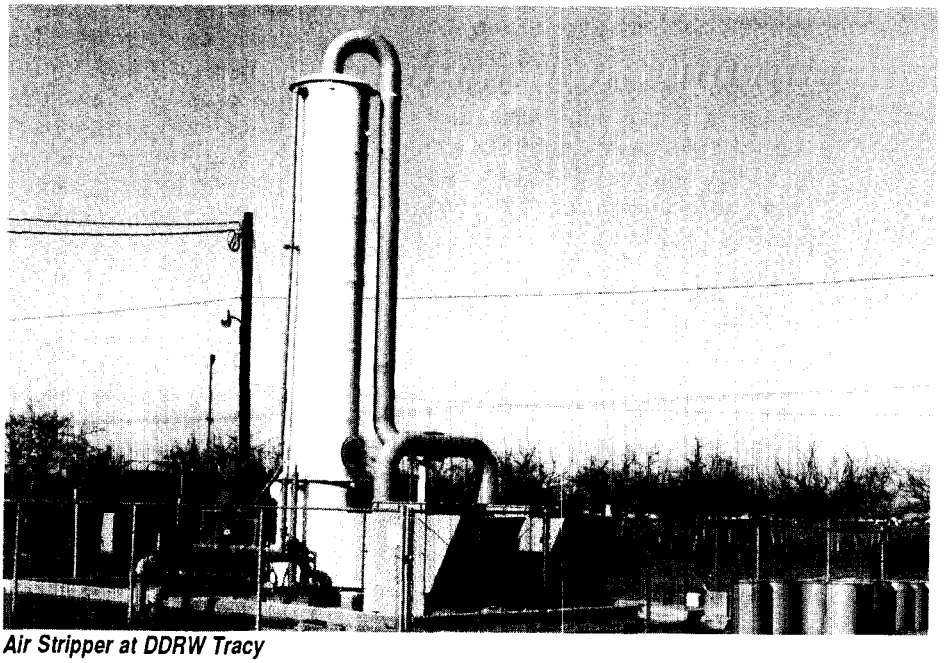
Residents living in the immediate vicinity of the site are aware of issues that may affect them. Some farmers located closer to DDRW Tracy have expressed concern regarding PCE and TCE contamination of their water and crops. In an effort to address these concerns, DDRW Tracy has taken water and crop samples and had them analyzed for PCE and TCE. The results indicated that some irrigation water is contaminated with PCE and TCE, but that there was no crop uptake of these contaminants.

Interim Remedial Actions

Numerous remedial projects are currently underway at DDRW Tracy. A Remedial Investigation/Feasibility Study (RI/FS) began in September 1986 for the 14 sites not closed out during the PA/SI. All sites were grouped into one operable unit with the ground water issue being the main focus. This has resulted in the application of a variety of Interim Remedial Actions (IRAs). Below are descriptions of the actions already taken by DDRW Tracy.

Due to the known migration of the contamination off-site, immediate action was taken to reduce the risk to human exposure. Private drinking water wells within a 1-mile radius were sampled and analyzed. As a result of these tests, DDRW Tracy is providing bottled water to two private residences whose wells are close to or within the contamination plumes, where concentrations of TCE and PCE exceeded 5 ppb.

To prevent further migration of the contaminant plumes and to intercept the most contaminated portion of the ground water, an IRA contract was awarded in September 1989. This effort included the construction of a ground water withdrawal, treatment, and reinjection system. The system consists of a series of six ground water extraction wells, a water transmission pipeline, an air stripper to remove contaminants from the ground water, a carbon adsorption system to remove volatilized contaminants from the air stream, three reinjection wells, and ten monitoring wells. The system is capable of treating 500 gallons per minute of water with a maximum influent contaminant level of 500 ppb of TCE and PCE to an effluent level of 1 ppb TCE and PCE. The activated carbon adsorption system captures all the volatilized TCE and PCE with a net result of zero contaminants released through the air stream. Construction of the IRA was completed in April 1991 with installation costs reaching approximately $1.7 million and system operation began on October 4, 1991. The system has the capacity to be expanded to include an additional ten extraction wells and three reinjection wells. DDRW Tracy has



Air Stripper at DDRW Tracy

received praise from the California RWQCB and the California Department of Toxic Substances Control for voluntarily expediting the ground water protection program and bringing the system on line ahead of regulatory requirements.

Collection and analysis of ground water samples from all monitoring wells are completed on a quarterly basis. In addition, the water level at selected wells are measured on a monthly basis. This data is assisting in the determination of the effectiveness of the IRA. The full-size treatment system is anticipated to be installed within the next 2 to 3 years. The extent of the full-size system will be based on the performance of the IRA. The duration for complete restoration is estimated to take 20 to 30 years at a cost of $1 to $1.5 million annually.

In addition to the contaminated upper aquifer, lead-contaminated and petroleum-contaminated soil was found at the depot during the remedial investigation. A total of 450 cubic yards of suspected lead-contaminated soil was removed from the Subsistence Warehouse Construction Project area. Removal and remediation of the petroleum-contaminated soil was required. A total of 670 cubic yards of petroleum-contaminated soil was removed and remediated from the Building 201 underground storage tank area. The soils were processed through a rotary kiln where they underwent low temperature desorption. The soils were successfully treated to nondetect levels of total petroleum hydrocarbons.

Two other projects conducted at DDRW Tracy include an abandoned well project and point source investigation. The abandoned well project consists of the proper closure of two previously abandoned deep drinking water wells located on the depot in the area of highest contamination. These were of concern due to their capacity to potentially provide a conduit for the contaminated water to be drawn down into the lower aquifer. The point source investigation focused on clean closure of the depot's lined waste ponds.

Future Work

The initial RI/FS is being completed that addresses only the ground water issues. This RI/FS is scheduled to be completed by the end of fiscal year (FY) 1992. A Record of Decision (ROD) which also addresses only the ground water issues is scheduled for completion in FY 1993.

An installation-wide RI/FS will then be prepared. This site-wide RI/FS is scheduled for completion by the end of FY 1994. An installation-wide ROD will then be prepared for completion in FY 1996. Completion of the site-wide ROD will hopefully lead to an approach to clean up the entire facility. A cleanup timeline demonstrating past cleanup and future plans for remediation of the facility is shown on the next page.

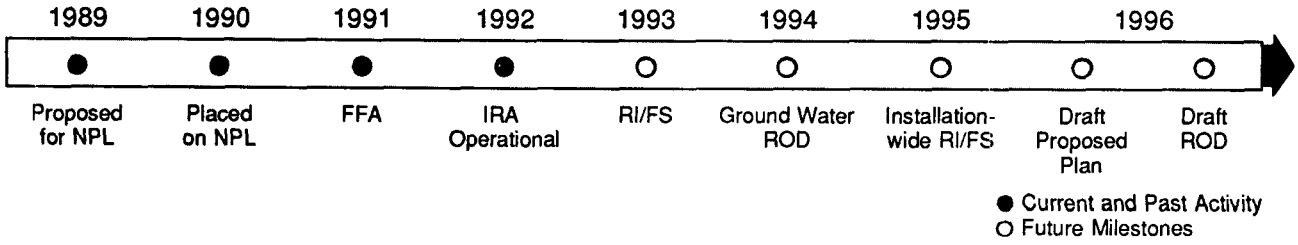
Community Relations

A Community Relations Plan (CRP) was originally prepared in November 1986. A requirement of the FFA established in 1991 was for DDRW Tracy to amend the 1986 CRP to reflect the work at Tracy completed through June 1991. The purpose of the CRP is to involve the community and other interested parties in the IRP process at DDRW Tracy. This is accomplished by the establishment of procedures for the accurate and timely release of information to interested citizens and public officials, and encourage two-way communication between DDRW Tracy and the community. DDRW Tracy encourages public involvement and monitors community concerns and information needs during all IRP activities. Numerous community relations activities/articles have been conducted/published by the DDRW Public Affairs Office/ Environmental Protection Office since 1984. Activities include public meetings, press releases and tours of the site.

Local print media coverage of DDRW Tracy is handled by the *Tracy Press* and the *Western Region Roundup* (a DDRW publication). In addition to these two papers, the Public Affairs Office of DDRW also keeps the *Stockton Record*, *Manteca Bulletin*, and *Modesto Bee* informed of events as they are scheduled or occur at DDRW Tracy. For actions at DDRW Tracy which require the publication of public notice announcements, the DDRW Environmental Protection Office uses the *Tracy Press* and the *Stockton Record*. These two papers have the highest circulation in the potentially affected area. All of these newspapers have carried articles about the ground water monitoring program. Many of these articles contained excerpts from statements by local residents and representatives from the RWQCB, the California Department of Health Services, and the San Joaquin County Health District.

The public's concerns for DDRW Tracy were determined by public interview. The interviews were conducted in May 1991 and consisted of mail solicitation, and telephone and personal interviews. Based on these interviews, the level of community concern at DDRW Tracy was assessed as medium. Evelyn Costa, County Board of Supervisors member, was interviewed during the community interviews. Ms. Costa stated that she did not have any current concerns regarding the site and felt it was being handled properly. In addition, she also indicated that she was pleased with DDRW Tracy's public image and interest in the community.

CLEANUP TIMELINE



References

1. Defense Logistics Agency, Defense Distribution Region West, Environmental Program, Community Relations Plan, 1991.
2. U.S. Department of Defense, Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1991, Document Number ADA 244196, February 1992.

DFSC Develops a Generic Statement of Work for Fast Cleanup

The Defense Fuel Supply Center (DFSC), Cameron Station (VA) has streamlined the environmental cleanup contracting process. They have designed a "generic" SOW which can be put into place for emergency situations where soil and/or surface or ground water have been impacted by fuel from a spill or leak. The first step will be to task the facility contractor to obtain bids on interim investigation and cleanup measures. This can be awarded to the selected A/E firm in less than one month. Follow-on work to satisfy regulatory requirements can begin within three months from the start date.

This procedure was developed in response to an emergency situation in 1987, when a leak was discovered in a 250-mile pipeline connecting DFSP Searsport, Maine with Loring Air Force Base. The generic statement has been improved upon and has been used for six additional sites where soil and ground or surface water was threatened by fuel.

DFSC will use this procedure at DFSPs on a permanent basis. Two major benefits occur when this in-house procedure is used. First, it demonstrates to regulatory agencies that DFSC is pursuing cleanup of soil and ground water in a timely fashion. Secondly, it is less cumbersome and less costly than using conventional contracting methods.

Defense Distribution Depot, Ogden, UT

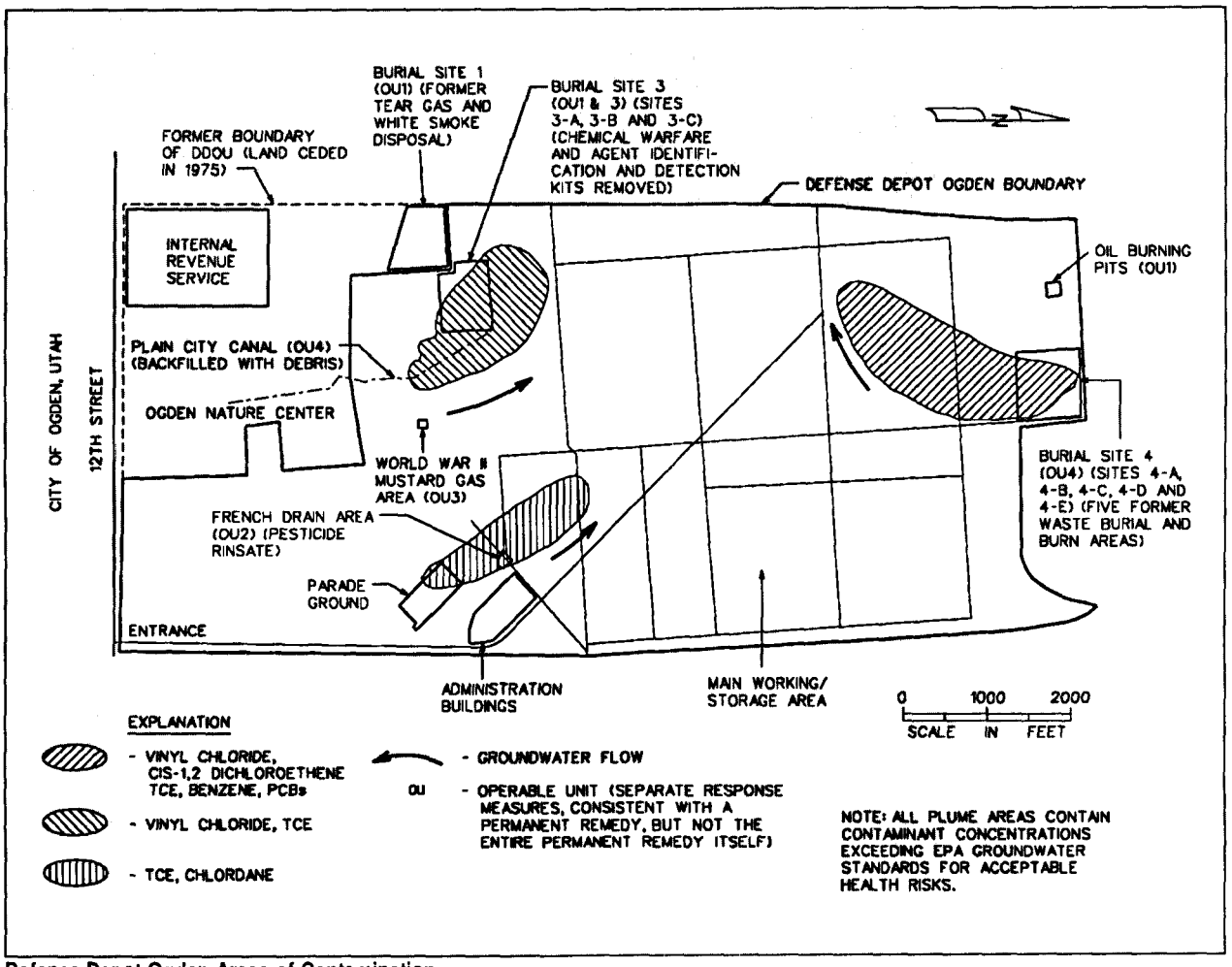
DoD has been criticized for not moving quickly enough to clean up contaminated sites. The Department has been encouraging timely site decisions to close out or remediate sites. Defense Distribution Depot Ogden, Utah is the first Federal Facility in EPA Region VIII to complete the study phase (RI/FS) at all sites and to move into final, long-term cleanup. The progress is a result of several factors, most notably a strong working relationship among key DLA, EPA and State personnel. The installation has also moved rapidly to eliminate a potential threat to human health at the installation by taking early actions to remove buried chemical warfare agents at the site. A public health assessment by ATSDR has recently placed Defense Distribution Depot Ogden, Utah (DDOU) in the category of "no apparent health hazard."

Background

The facility, now known as DDOU, was established eight days after the beginning of World War II. It provided a critical staging point for supplies used by allied forces in the Pacific theater throughout the war, as well as during the Korean, Vietnam, and Persian Gulf conflicts. As was common practice throughout the U.S. prior to the adoption of land disposal restrictions, unusable materials and wastes were buried on site. DDOU's current mission includes receipt, storage, maintenance, inventory and issue of non-ordnance items such as electronic, industrial, construction, clothing and textile items, package petroleum and industrial/commercial chemicals to military installations, other DoD agencies, and federal civilian agencies. DDOU serves primarily the Western United States and the Pacific area.

Contaminants

Among the wastes buried at DDOU were training kits used to train U.S. forces on the effects of mustard gas (see site map below). The kits contained dilute amounts of mustard gas that the soldiers would rub on their arms, enabling them to recognize the poison if they were ever exposed during combat. In addition, over 1 million pounds of mustard gas were stored at DDOU during World War II, but



Defense Depot Ogden Areas of Contamination

were removed shortly after to Dugway Proving Ground, also in Utah. It was primarily because of concern over the amount of mustard gas potentially present and its mobility in the environment that DDOU was listed on the NPL in 1987.

Moving rapidly to address the most significant and immediate threat to human health at DDOU, DLA conducted an interim remedial action to remove all chemical warfare agents including the mustard kits from their burial places by the end of 1988. An exhaustive search has shown that no other chemical warfare agents remain on site. In addition, the extensive characterization and study work that has been conducted at DDOU since 1979 has enabled the facility to proceed rapidly to the final cleanup stage. Furthermore, in a public health assessment dated September 30, 1992, the Agency for Toxic Substances and Disease Registry (ATSDR) has placed DDOU in the category of "no apparent health hazard."

Studies Completed

The U.S. Army and Hazardous Materials Agency (USATHAMA) records search and subsequent investigations identified 44 sites on the installation where hazardous materials may have been stored, treated, or disposed of. Investigations have confirmed that no further risk to public health exists at 34 of these sites, and they have been closed-out. Ten sites will be remediated. These ten sites are grouped into four operable units. They are:

- **Operable Unit 1**: Contains riot control agent and white smoke containers, and other debris.
- **Operable Unit 2**: Contamination includes rinsate from pesticide containers; pesticides have been detected in ground water.
- **Operable Unit 3**: Contained chemical agent identification and detection kits, unfused red smoke and tear gas grenades; all chemical warfare agents were removed during an interim remedial action in 1988.
- **Operable Unit 4**: Consists of open burning pit trenches, an oil holding/burning pit, fluorescent tube burial area, sanitary landfill, and possible methyl bromide cylinder/water purification tablet burial area. (No methyl bromide cylinders were discovered during the remedial investigation.)

DDOU is the First Federal Facility in EPA Region VIII to Complete All Study Work

DDOU's restoration program is leading the way among Defense Department NPL sites. With the signing in late FY 1992 of the fourth and final ROD required at DDOU, it has become the first federal facility in EPA Region VIII to complete all required study work and begin long-term cleanup. Even prior to the signing of the last ROD, work was well underway to cleanup contamination problems.

The progress registered at DDOU is the result of several factors, most notably a strong working relationship among key DLA, EPA and State personnel. This good working relationship is evidenced by a long history of close coordination with regulatory agencies and the public. For example, DDOU signed the first Memorandum of Agreement (MOA) in Utah for cleanup with the State and EPA in 1986. DDOU also established a Technical Review Committee to provide for public input and review of the study and cleanup of contaminated sites at the installation. Early signing of a Federal Facility Agreement in 1987 resulted in the early identification of, and resolution of areas of potential disagreement. The significant milestones of progress at DDOU are shown on the cleanup timeline at the end of this story.

Future Cleanup Work Will Focus on Ground Water and Contaminated Soil

In addition to the chemical warfare agents mentioned earlier, on-site soil and ground water contamination at DDOU has resulted from fire training activities, rinsing of pesticide containers, and burial of tear gas grenades, water purification tablets, and other miscellaneous materials. The principal on-site chemicals of concern are trichloroethylene (TCE), and vinyl chloride, but pesticides, dioxins, furans, and PCBs have also been found.

Cleanup at Operable Unit 2

As the installation map shows, levels of several of these contaminants exceed acceptable levels on-site.

However, this contamination currently poses little risk to off-site residents, since it occurs in isolated areas on-site at relatively low concentrations and it is not currently migrating off the installation. Furthermore, the shallow ground water aquifer on the base is not used for drinking water. In order to prevent any possible future contact with hazardous substances at DDOU, however, all ground water contamination will be reduced to acceptable levels (Federal Maximum Contaminant Levels). Analysis of data from off-depot ground water wells indicate levels of contaminants below national drinking water standards. All private wells are safe for human use. (see table).

Field work has already begun at the area polluted by rinse water used to clean pesticide and herbicide containers (Operable Unit 2). DDOU has installed wells which will extract the contaminated ground water. The ground water will then be pumped through an air stripper to remove pollutants, and, if necessary, the water will also be sent through a carbon absorption unit. Water purified to below drinking water standards (Maximum Contaminant Levels) will be pumped back into the ground; where no standards exist water will be treated until the contaminants pose less than one in a million excess cancer risk. A one in a million excess cancer risk means that no individual will have more than a one in a million chance of developing cancer in their lifetime as a result of living or working at or near DDOU.

Summary of Contaminants Detected in Ground Water Wells Off Site

Analyte	Water Quality Standard	Well Location and Approximate Depth (ft)				
		Devries (14 ft)	Hodson (15 ft)	Illum-1 (21 ft)	Illum-2 (65 ft)	Okey (13 ft)
Volatile Organic Compounds (ug/L)						
cis-1,2-Dichloroethene	70	<0.5	<0.5	<0.5	<0.5	<0.7
Metals (mg/L)						
Arsenic	0.05	<0.005	<0.005	<0.005	0.024	<0.005
Barium	2.0	0.16	0.13	0.33	0.13	0.17
Iron		<0.1	0.30	0.15	2.0	0.10
Manganese		<0.015	0.18	0.068	0.12	0.23
Lead	0.05	0.003	0.008	0.009	0.006	0.003

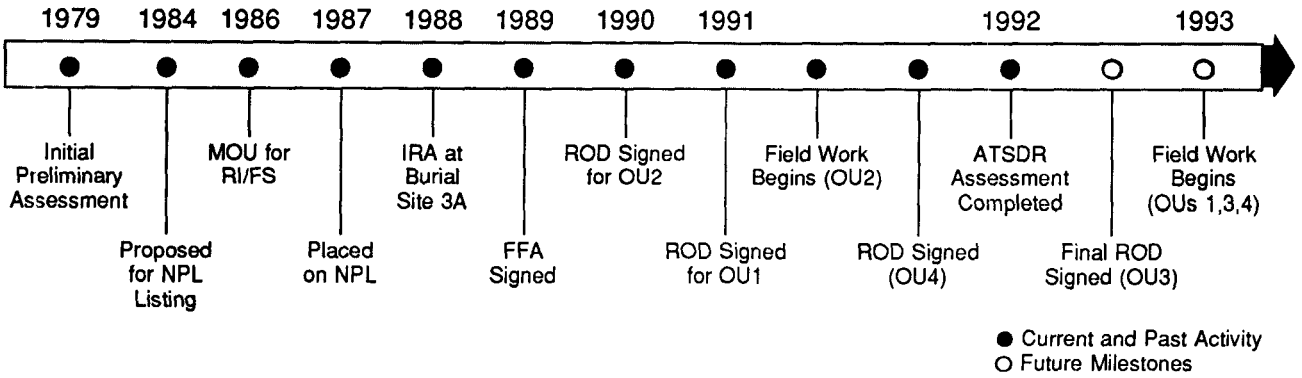
Contaminated soils will be removed off-site and treated. Cleanup levels for the pesticides bromacil and chlordane will be 1 mg/kg or the lowest concentration that can be consistently detected. The remedies selected for the other OUs are basically the same as for OU 1: ground water extraction combined with air stripping and if necessary, carbon adsorption and removal and off-site treatment of contaminated soils. Final cleanup is expected to begin at Operable Units 1, 3, and 4 during FY 1993.

DDOU Ground Water Monitoring Plan to Serve as an EPA Model

The EPA is interested in using a ground water monitoring plan developed by DDOU as a guide for other facilities throughout the nation. The plan, which is one of the first developed in the U.S., lays out a network of carefully-placed wells that are used for sampling to determine if contaminants are being effectively removed from ground water. Currently there are about 100 such wells on the installation.

The Depot Environmental Coordinator examines one of the first wells installed at DDOU

CLEANUP TIMELINE



References

1. Defense Logistics Agency, "Final Record of Decision and Responsiveness Summary for Operable Unit 1, Defense Depot Ogden," Utah, June 10, 1992.
2. Defense Logistics Agency, "Draft-Final Record of Decision and Responsiveness Summary for Operable Unit 2, Defense Depot Ogden," Utah, September 7, 1990.
3. James M. Montgomery, Consulting Engineers, Inc., "Draft Final Remedial Investigation/Feasibility Study Report for Operable Unit 3, Defense Distribution Depot Ogden, Utah" Prepared for U.S. Army Corps of Engineers, December 6, 1991.
4. James M. Montgomery, Consulting Engineers, Inc., "Draft Final Remedial Investigation/Feasibility Study Report for Operable Unit 4, Defense Distribution Depot Ogden, Utah," Prepared for the U.S. Army Corps of Engineers, September 27, 1991.
5. Defense Logistics Agency, "Final Record of Decision and Responsiveness Summary for Operable Unit 4, Defense Distribution Depot Ogden, Utah," August 3, 1992.
6. Defense Logistics Agency, "Final Record of Decision and Responsiveness Summary for Operable Unit 3, Defense Distribution Depot Ogden, Utah," August 21, 1992.
7. Agency for Toxic Substances and Disease Registry (ATSDR) "DDOU Public Health Assessment," September 30, 1992.

"DDOU is to be commended for its efforts to remediate its sites on schedule. No other federal facility in Region Eight has reached this milestone."

Robert L. Duprey
Hazardous Waste Management Director
EPA Region VIII

Research, Development, and Demonstration/ Other Hazardous Waste Program Progress

DoD is working to identify and develop cost-effective cleanup technologies, efficient and cost-effective waste site investigation technologies, and efficient methods to manage wastes and prevent pollution at the point of generation. Such efforts include research, development, and demonstration of pollution prevention and innovative cleanup technologies. Our progress this year in these areas is explained in this section. Efforts in this area are very important to DoD's overall cleanup program as they will allow for more cost-effective cleanup. Pollution prevention and hazardous waste minimization efforts will avoid the creation of future waste sites and pollution problems. In FY 1992, DoD invested approximately $28 million in research, development, and demonstration of cleanup and pollution prevention technologies.

Bioventing Demo at Eielson Air Force Base, AK

An effort was initiated by the Air Force at Eielson AFB, in conjunction with the EPA Risk Reduction Laboratory (EPA RREL) to develop an in-situ, inexpensive treatment technology for effectively treating hydrocarbon contaminated fuel in a sub-Arctic environment. Various soil warming methods are being tested to determine if warmed soil enhances the performance of bioventing.

The anticipated benefit will be a low-tech, inexpensive soil clean-up technology that could be operated year-round at the numerous Air Force fuel contamination sites in the northern U.S. Additionally, data illustrating the effectiveness of bioventing for remediating hydrocarbon contaminated soil and the effect of soil warming techniques on in-situ biodegradation rates will be collected as part of the study.

This three-year field effort will end in the summer of 1994. At that time Eielson AFB will decide if the bioventing system should be expanded to influence the entire contaminated site and possibly implement bioventing at other base sites.

Ion Vapor Deposition

The Air Force Civil Engineering Support Agency (AFCESA) has demonstrated the use of Ion Vapor Deposited (IVD) aluminum as a replacement for cadmium electroplating. During a three-phase, four year project, AFCESA evaluated, improved, and demonstrated the applicability of IVD aluminum as a substitute for electroplated cadmium, a toxic metal.

AFCESA installed a state-of-the-art IVD coater at Warner-Robins Air Logistics Center (WR-ALC), Robins AFB, GA. From June 1991–July 1992, coating procedures were developed for 122 parts which used to be cadmium plated. As a result, the cadmium plating line at WR-ALC has been completely eliminated and all other ALCs are switching from cadmium-plated parts to IVD aluminum.

Use of the IVD aluminum process not only eliminated the need for using cadmium, but also for cyanides and other hazardous materials used in the plating baths. In addition, processing of parts with IVD aluminum is quicker and less labor intensive than cadmium electroplating. The savings which result from decreased labor requirements, reduced occupational hazards, and eliminated ventilation requirements and hazardous materials disposal are estimated to be between $160,000 and $400,000 per ALC.

Supercritical Water Oxidation of Hazardous Wastes

The Air Force is using supercritical water oxidation to determine the chemistry, chemical kinetics, and safety of oxidizing explosive propellant ingredients in supercritical water. Supercritical water oxidation is a promising technology that rapidly and completely oxidizes hazardous wastes above the critical point of water where gas-like mixing and densities are observed. A 30-gallon per day bench scale reactor has been built, automated and tested. The results of the testing are being used by a Joint Service Program to develop a prototype system capable of disposing of 800 to 4,000 pound rocket motors. The system uses liquid nitrogen to remove the propellant from the motor casing for subsequent disposal by a supercritical water oxidation reactor with a 250 pound per day yield. The 30 month effort is expected to demonstrate the environmentally safe disposal of three government furnished Minuteman II 3rd stage Class 1.1 motors.

Photocatalytic Oxidation Demo at Tyndall AFB, FL

A new ground water treatment process was demonstrated in a joint Air Force–Department of Energy (DoE) effort at Tyndall AFB, FL this summer at a fuel contamination site. The photocatalytic process uses sunlight to activate a catalyst flowing through the contaminated ground water. First, the ground water is pumped to the surface. A powerful oxidant is then released from the activated catalyst and the organics in the water are destroyed. The National Renewable Energy Laboratory (NREEL, A DoE laboratory) has been working on the process in parabolic trough reactors. Preliminary results indicate favorable performance of the new treatment system, particularly if coupled with conventional pretreatment procedures. Final analysis, including comparisons to other commercial and innovative technologies, will be completed this winter. This technology is aimed at the 1,100 Air Force and numerous DoE sites contaminated with organics in the ground water. Continued development of more active photocatalysts is ongoing to bring the costs of this solar activated system even lower. Estimated availability date for the complete advanced solar reactor system is July 1994.

Site Characterization and Analysis Penetrometer System (SCAPS)

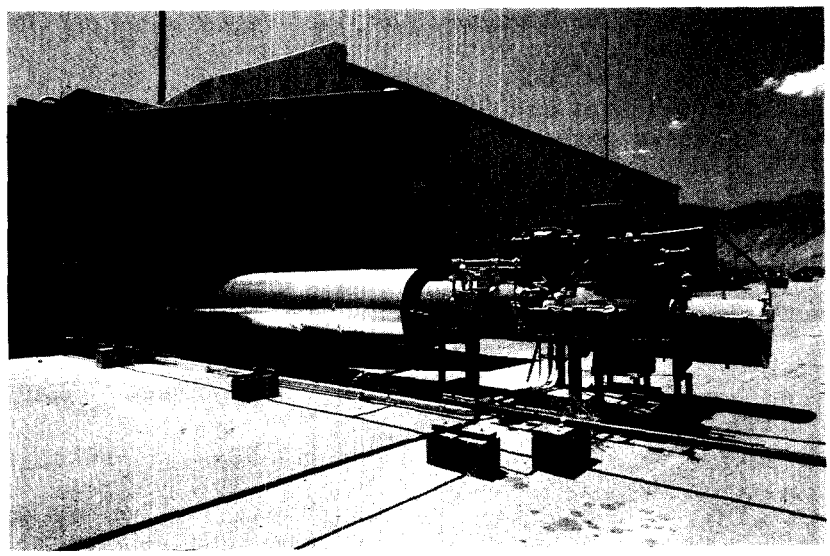
This joint effort aimed at meeting Department of Defense and Department of Energy needs for quicker, more cost-effective methods of gathering data for site cleanup, resulted in the development of a penetrometer based system which maps areas of subsurface contamination. Current hazardous waste site assessment practice relies on a system of exploratory well drilling and sampling and laboratory analyses of soil and ground water samples to obtain information. The cone penetrometer provides a more effective means of placing fewer monitoring wells to achieve the same results obtained utilizing exploratory drilling. Penetrometer-based investigations have the potential of being faster, more cost effective, and safer than those involving drilling at waste sites. The development of sensors which are capable of detecting in-situ explosive and chlorinated contamination is currently underway and expected to be integrated with SCAPS units in FY 1993. Among some of the sites where the penetrometer has been successfully demonstrated are Savannah River DOE Site, Tyndall Air Force Base, Jacksonville Naval Air Station, and Ft. Dix, New Jersey.

Bioremediation of Explosive Contaminated Soils

Composting is a biotreatment technology which has the potential to effectively degrade the high explosives TNT, RDX, HMX at a low cost. Composting studies at Louisiana Army Ammunition Plant have revealed that composting is economically feasible and that the by-products of composting exhibit little to no toxicity. The composted soil can also be used to assist the restoration of the contaminated site. Current composting R&D efforts include a study and a demonstration recently completed at Umatilla Army Depot Activity (UMDA). Test results provided the impetus for the use of composting over other technologies to remediate explosive-contaminated UMDA washout lagoons which are currently on the National Priorities List (NPL). Cost analyses have indicated that the full-scale application of composting will be possible at a cost of approximately $200 per cubic yard of contaminated soil (approximately a 50 percent savings as compared to incineration).

Hot Gas Decontamination System

The Army currently owns a large inventory of excess facilities and equipment that cannot be disposed of due to contamination from chemical agents and energetic materials. The only currently acceptable method of decontaminating this material has been through the expensive process of disassembly and incineration. This process is not only expensive, but it also destroys the intrinsic value of the decontaminated material. The Hot Gas Decontamination System provides a nondestructive alternative by using hot gas to vaporize and thermally destroy explosives contaminants. The hot gas concept has been proven in pilot-scale tests at Cornhusker Army Ammunition Plant and Hawthorne Army Ammunition Plant for explosives contamination. The Hot Gas system is currently being installed at the Western Area Demil Facility (Hawthorne Army Ammunition Plant) to decontaminate metal sea mine casings. The Hot Gas Decontamination System provides the Army with a mechanism to more economically decontaminate and dispose of excess property formerly used in the processing of explosives and chemical weapons.



Hot-gas Decontamination of Explosives-Contaminated Equipment

Super Tropical Bleach Rejuvenation Facility

Military units would use Super Tropical Bleach (STB) for decontaminating equipment in case of a chemical agent attack. For this reason, Army units stock STB as part of their "basic load" of supplies for deployment. Army logisticians and the Defense Logistics Agency (DLA) maintain stores of STB to augment unit-level supplies in case of a conflict.

As with other materials, STB has a finite shelf life. The Army and DLA must dispose of approximately 750,000 pounds of expired STB each year. Since STB is a strong oxidizer, it must be disposed of as a hazardous waste.

Pine Bluff Arsenal (AR) has developed a process to rejuvenate expired STB. This process rechlorinates the bleach and removes moisture, bringing the STB back to its original specifications. The savings in disposal costs and new STB purchases amount to more than $2 million per year.

In 1992, Pine Bluff completed its design and awarded a contract to finish constructing the STB rejuvenation facility. The facility should be operational by the end of FY 1993. At that point, Pine Bluff will begin reclaiming spent STB throughout the Department of Defense.

Field Demonstration of Fiber Optic Laser Spectrometer at Tinker AFB, OK

The Air Force has supported for the past three years the development of a novel transportable laser system. Lasers are extremely desirable light sources because the light can be launched into the optical fiber with high efficiency. Unfortunately, most laser systems only offer one or a few fixed wavelengths. This system is unique for its combination of broad wavelength tunability in a field transportable package.

In August of 1991, the system was transported in a van from Fargo, ND, to Oklahoma City, OK for a small-scale field test. No significant problems were encountered over 50 hours of running time.

This research could lead to development of monitoring devices to meet the current and anticipated requirements of the Air Force. Such monitoring devices will accelerate other R&D projects such as in-situ biodegradation or other ground water remedial actions by providing in-situ real-time collection of data. With the support of Tinker AFB, the laster spectrometer is being teamed with cone penetrometer technology forming a sophisticated site characterization tool. Tinker will be conducting a long-term field demonstration of the laser spectroscopy system for ground water monitoring. System development and demonstrations will occur over FY 1993-1994. It is anticipated that, by the end of FY 1995, such systems will obtain EPA acceptance for satisfying monitoring requirements at hazardous waste sites. The probability of meeting Air Force objectives of developing long-term, in-situ ground water monitoring techniques that will provide cost savings over traditional monitoring methods is excellent.

Cleanup of PCB-Contaminated Soil at the Navy Public Works Center, Naval Station, Guam, M.I.

An on-site pilot test of a chemical dechlorination process conducted at the Navy Public Works Center, Naval Station, Guam, M.I., has demonstrated PCB destruction from several thousand parts per million (ppm) to levels below 2 ppm. A refined full-scale system is planned for operation and site cleanup.

The PCB on-site treatment technology used for the pilot test was developed by the U.S. EPA Risk Reduction Engineering Laboratory and the Naval Civil Engineering Laboratory (NCEL). The refined full-scale system to be used for the cleanup is called Base Catalyzed Decomposition Process (BCDP). The use of this technology offers a permanent solution to the problem as compared to removal and off-site disposal. *R&D Magazine* selected this technology as one of the Top 100 Technologically Significant Products of the Year.

Paint Spray Gun Washers at the Pearl Harbor Naval Shipyard

In October 1991, the Pearl Harbor Naval Shipyard (NAVSHIPYD PEARL) spent approximately $600 to procure a paint spray gun washer for evaluation at one of the shipyards's paint shops. The washer has worked so well, the paint shop requested four more washer units.

Before the paint shop received the washer, paint spray guns were cleaned manually. Using this process to clean 15-20 spray guns consumed approximately 360 gallons of organic solvent and took around 15 minutes per gun. During the first five months of new washer operation, approximately 15 to 20 paint spray guns were cleaned per week. During this time, studies show the gun washer consumed a total of seven gallons of thinner and required less than five minutes to clean each gun. One of the major advantages is the filtration and reuse of thinner in the gun washer.

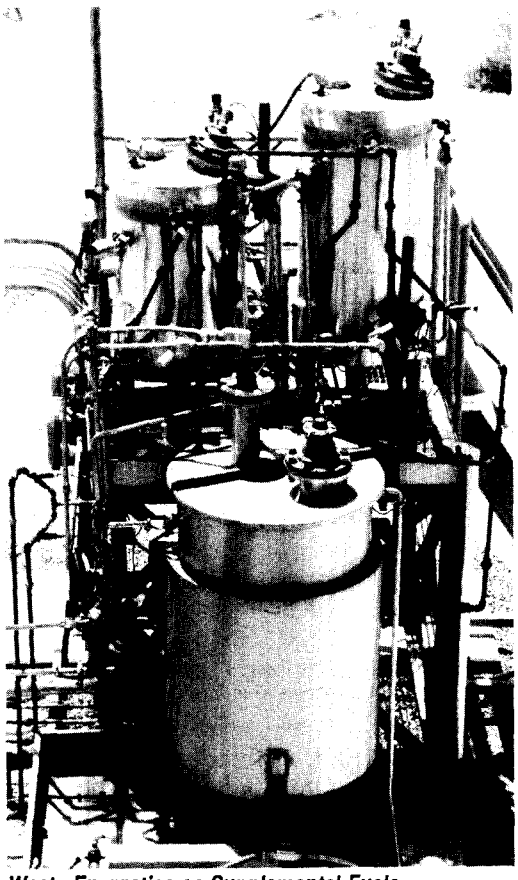
By applying the average hazardous waste disposal unit cost for Hawaii of $38 per gallon and the average solvent procurement cost of $4 per gallon, the gun washer has reduced disposal costs from $15,120 to just $300 during the five-month evaluation period. Also, by applying the typical labor rate figure of $45 per hour, the gun washer has reduced labor costs from $4,050 to $1,350 during the same period. Based on a $600 investment cost, the gun washer paid for itself in under one month.

Unexploded Ordnance Detection Systems

The Army demonstrated two prototype unexploded ordnance (UXO) detection systems by conducting a UXO survey at the site for the construction of the U.S. Navy's Underwater Explosions (UNDEX) Test Facility at Aberdeen Proving Ground, Maryland. The two prototype systems, the Surface-Towed Ordnance Locator System (STOLS) and the Ground Penetrating Radar Ordnance Search System (RADAR), are designed to detect, identify by size and depth, and map potential subsurface UXO. The STOLS sensor technology is magnetometry-based; whereas, the RADAR sensor technology is ground penetrating radar. The advanced development and demonstration of STOLS and RADAR are being managed by the Army as part

of its technology transfer program to develop and demonstrate UXO detection and remediation technologies.

The UNDEX Test Facility site was a 60-acre ordnance test area with known UXO contamination. The site had been used as an artillery projectile impact area, a bombing range, a mine test area, and a munition disposal area for over 50 years. The UNDEX Test Facility site was successfully surveyed and a report issued which detailed over 4,000 subsurface anomalies. Of these 4,000 anomalies, many were live, fuzed, high explosive filled bombs and projectiles. Accurate location, size, and depth determinations of the UXO by STOLS and RADAR allowed explosive ordnance disposal technicians to safely uncover and dispose of the UXO.



Waste Energetics as Supplemental Fuels

This was the first operational demonstration and evaluation of both systems and the results indicate that STOLS and RADAR outperform current ordnance detection technologies in categories of speed, accuracy, reliability, depth of detection, estimation of size, and mapping of UXO locations. Additional development and demonstrations are planned for both systems.

Use of Waste Energetics as Supplemental Fuels

The Army, as the sole manager of munitions, is faced with a serious problem of disposing of an ever-growing inventory of waste energetic material. The current disposal methods of incineration and open burning/open detonation are becoming increasingly expensive while also becoming more restricted by regulatory requirements. One possible alternative technique is the reuse of these energetic materials as a supplemental fuel for industrial boilers. Initial studies have shown that it is feasible to utilize the energy content from explosives in the form of fuel supplements. These results were obtained in tests, conducted at the Hawthorne Army Ammunition Plant, which demonstrated explosives/fuel oil mixtures could be safely fired in industrial boilers. These tests utilized a state-of-the-art pilot scale system for explosives solvation and fuel oil blending. The pilot system was successful in burning the explosives supplemented fuel in a standard boiler configuration. Future research and testing calls for the development of propellant supplemented fuels and the determination of full-scale design information. In addition, systems will be examined to determine the possibilities of increasing the energetics concentration beyond those currently established.

Dry Filters Minimize Disposal Cost

The Aircraft Intermediate Maintenance Division (AIMD) was painting ground support equipment in two wet filter paint booths at Naval Air Station, Barbers Point. Spray painting in the paint booths created a fine mist of waste paint or overspray. The wet filter used a water curtain which stripped the paint overspray from the air and collected the paint in the water curtain well. This filtering process generated wastewater and waste paint sludge. Approximately 5,000 gallons of wastewater and sludge generated annually by the two wet filter booths contained a variety of paint constituents which required disposal as hazardous waste (HW).

To minimize this waste stream, the two paint booths were converted from wet to dry filter operation for less than a thousand dollars. The dry filters minimize this waste stream in two ways. First, the spent disposable dry filters occupies significantly less volume and is significantly lighter than the waste water and sludge generated by the water curtain. Second, the dry filters need only pass the Toxicity Characteristic Leaching Procedure (TCLP) to be exempt from HW disposal regulations.

Each dry filter change generated only 220 gallons of HW while each wet filter change generated 1,705 gallons of HW. Replacement filters cost only $100 per booth. Although the first set of dry filters proved to last twice as long as the water curtain filters between filter changes, cost savings based on similar filter change frequencies including three filter changes per year and a disposal unit cost of $38 per gallon, the annual disposal cost of this waste stream dropped from approximately $194,400 to $25,100. The economic payback for conversion was almost immediate.

Training of DoD Personnel in DERP Activities

The Defense Environmental Restoration Program requires a team effort to complete effectively its varied and complicated tasks. This is especially true in the IRP portion of the program. DoD has implemented training programs so that personnel can effectively manage various aspects of the cleanup process. During FY 1992, over 3,700 DoD personnel received DERP-related training. The following are examples of courses of instruction provided in FY 1992. In the future, the Air Force will be the lead component for DERP training.

USACE DERP Training

The Directorate of the Army Corps of Engineers Training Management located at the Huntsville Division of the USACE has provided DERP training to Army and Corps personnel involved with the Army IRP and FUDS programs. During FY 1992, the Corps trained over 1,700 individuals in 68 course sessions under the Hazardous/Toxic and Radioactive Waste Training Program. These courses are designed to meet the unique hazardous/toxic and radioactive waste (HTRW) training requirements encountered in DERP and to meet specific requirements mandated by Congress under SARA.

The HTRW Training Program is taught by experts in the environmental field. Courses include Hazardous/Toxic and Radioactive Waste Overview, Safety and Health for Hazardous Waste Sites, 8-Hour Refresher, Implementation of HTW Environmental Laws and regulations on USACE projects. In addition, several new courses are currently under development for implementation in the FY 1993 training program. These include Geotechnical Aspects for HTW Sites, Technical Applications of Environmental Requirements, and Explosive Ordnance Recognition and Safety.

Army Training

In FY 1992 the Army provided a variety of IRP training courses. The training included a ground water modeling use and needs workshop, an Army DERP Conference/Workshop, and initiation of an environmental electronic bulletin board.

The USATHAMA, in conjunction with the Waterways Experiment Station, and the Directorate of Military Programs, hosted the first ever Army Ground Water Modeling Use and Needs Workshop in Denver, Colorado. The purpose was to define the near-term and long-term Army user needs in the areas of ground water flow and transport modeling in support of the IRP. Over 75 individuals, from DA, universities and industry attended. The two-day workshop included presentation of case histories, panel discussions, and a tour of the Rocky Mountain Arsenal ground water treatment system. Workshop proceedings will be published in early 1993.

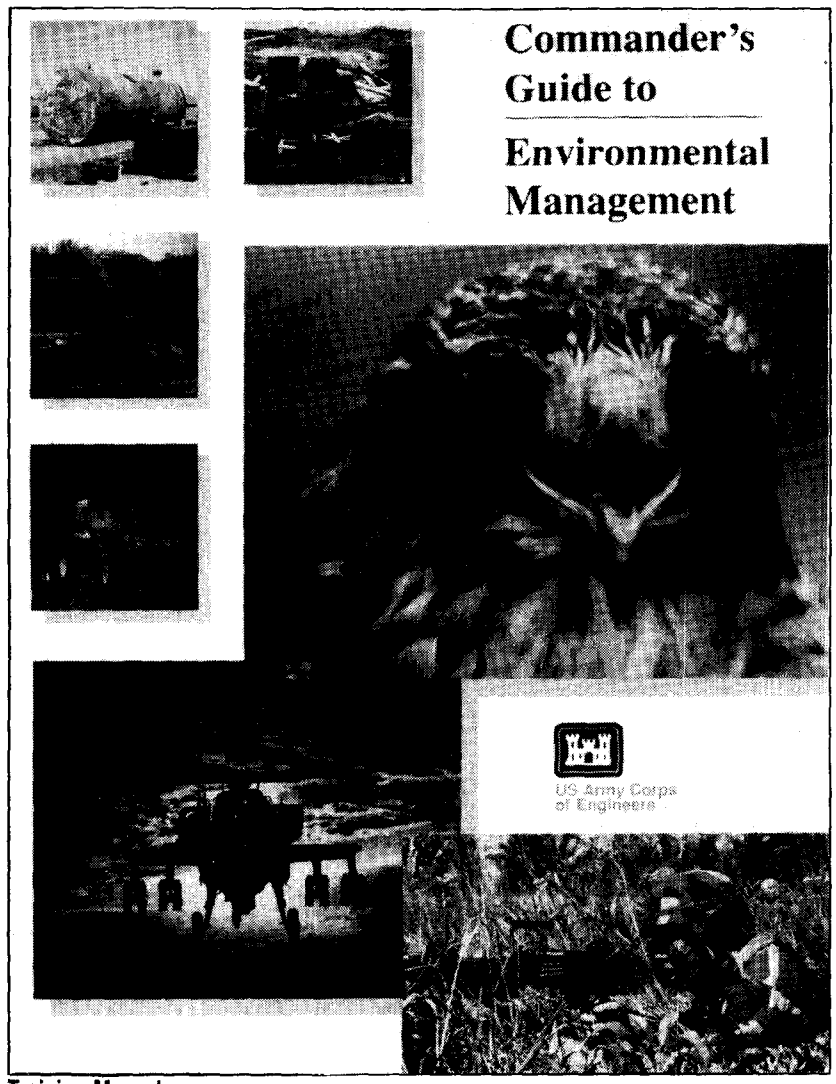
A DERP Conference/Workshop entitled "Partners in Restoration" was held in Dallas, Texas in April 1992. This was the first conference at which the entire CONUS-based active Army environmental restoration community gathered to communicate the latest in Army policy, guidance, and to explain the mechanics of the DERP process. The focus of presentations was on the installation and its role/responsibilities in the DERP. The presentations covered both technical and financial issues. Four hundred Army and regulatory agency personnel attended.

The Army Defense Environmental Electronic Bulletin Board System (ADEEBBS) is an on-line communication system initiated by the USATHAMA and developed by U.S. Army Construction Engineering Research Laboratory (USACERL). ADEEBBS is dedicated to the exchange of information concerning the Army's mission. It serves as forum for disseminating and sharing information on Army cleanup technologies, program policy and guidance, regulatory compliance, Legacy, cultural and natural resources, meetings, and environmental training. Its capabilities include use as a communications platform, an electronic bulletin board, a reporting mechanism, an information source, and a portal to other systems. System equipment and user training has been completed at 125 Army installations.

Department of the Navy Environmental Training Plan

The Navy has created a comprehensive, Navy-wide, environmental training plan. The Plan will ensure that every person in the Navy can obtain the environmental and natural resource training needed to ensure that their actions comply with, protect, and enhance our environment and its laws. The Plan will also ensure that appropriate training is available and that sufficient resources are applied to guarantee the effectiveness of the programs.

The Plan identifies which courses are available to meet these requirements and/or can be modified to do so. Opportunities to train personnel in-house or use other DoD component and EPA courses are being and will be used wherever practical. A substantial part of the Plan addresses the environmental training needs of environmental remediation personnel including not only compliance-oriented courses but also competence in technical and regulatory partnering issues.



Training Manual

DERP Education

The Center for Environmental Restoration Education (CERE) at the Air Force Institute of Technology at Wright-Patterson AFB, OH, completed a successful first year. CERE's goal is to locate and provide Air Force students the best, most cost effective education to support their DERP related duties. Over 2,000 students attended courses offered by various agencies covering DERP related topics such as ground water hydrology, CERCLA Legal Issues, Toxicology, and Risk Communication.

Of particular interest has been the cooperative efforts between the Air Force and other agencies to develop two new courses. For example, a CERCLA cleanup course was developed through cooperative efforts of the Air Force and the EPA. The team approach was designed to foster teamwork between Air Force and regulatory personnel in remediating federal facility hazardous waste sites.

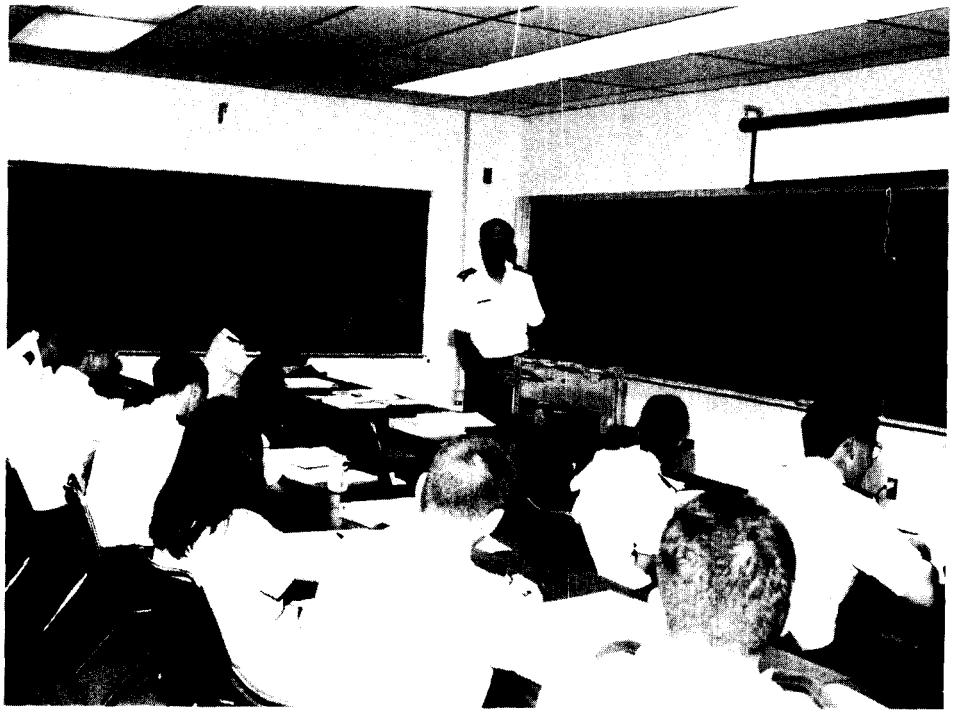
The course, which was attended by 520 students this year was so successful that efforts are now underway to expand the course to include other DoD Components and state regulators. The EPA Deputy Assistant Administrator for Federal Facilities Enforcement lauded the course as a "...step toward establishing more effective working relationships between EPA and the Air Force."

The Air Force also teamed with the Agency for Toxic Substances and Disease Registry (ATSDR) to develop a Health/Risk Assessment and Health Risk Communication training Course. The course is aimed at informing students of the roles of ATSDR and health/risk assessments in the Installation Restoration Program cleanup process.

Defense Environmental Restoration Account funds were also used to sponsor students attending three professional continuing education courses (two of them offered for the first time this year) at the Air Force Institute of Technology (AFIT).

The introductory Installation Restoration Program course, which has been offered at AFIT since 1988, continued to familiarize students with the basic technology, law, management, and public affairs knowledge required to work in the DERP. This year, 259 students, with engineering, legal, public affairs, and contracting backgrounds, attended the course.

Also, this year, 75 students attended a new AFIT course in Environmental Restoration Project Management, designed to familiarize students with the methods, processes, and techniques of managing environmental restoration projects; and 32 students attended a new AFIT course in Environmental Restoration Contracting, which provided information on how to plan, organize, prepare, manage, and administer environmental restoration contracts.



Air Force DERP Training Session

Looking to the future, CERE hopes to improve and expand its systems for publicizing and evaluating courses, and for assisting users in identifying their educational requirements. These improvements will serve to ensure that every student who needs education to perform his or her DERP-related duties has access to the highest quality education available.

DLA Training–Safety and Health for Hazardous Waste Sites

DLA personnel new to the environmental program completed the 40-hour CERCLA site safety and health course. This course fulfills OSHA requirements and helps assure the safety and health of personnel working at hazardous waste sites. The course specifically addresses CERCLA sites (NPL and non-NPL sites) and RCRA sites where investigations or cleanup operations are underway. In addition, DLA personnel who had previously completed the 40-hour course received the mandatory 8-hour refresher training during FY 1992.

Pilot Expedited Environmental Cleanup Program

Senate Appropriations Act 102-154 directed DoD to establish a Pilot Expedited Environmental Cleanup Program that includes at least five major projects for each Military Department. As stated in the bill, the program is based on the following principles:

- Full compliance with all environmental laws;
- Use of existing authorities (such as CERCLA interim remedial actions) when appropriate for substantial cleanups;
- Use of turnkey contracts to cover more than one phase of any cleanup;
- Establishment of special expedited procedures for any required approval of DoD actions by other Federal, State and local agencies; and
- Use of competition in contract solicitation and contractor competency and cost in contract awards.

The Departments of the Army, the Navy, and the Air Force are conducting expedited projects at several of their installations.

The Army's Presidio of San Francisco (CA) has implemented several expedited efforts. These include the use of base closure funds to remove leaking underground storage tanks, the use of interim remedial actions and coordinating with California regulatory agencies to shorten document review periods from 60 to 30 days.

At **Fort Devens** (MA), the Army has conducted joint reviews with regulators to accelerate the investigation process. The Army and EPA have jointly implemented steps to accelerate removal actions, including use of an action memorandum to document these actions, an accelerated review period, and treating removals as time critical.

Fort Sheridan (IL) and **Fort Benjamin Harrison** (IN) have attempted to initiate pilot projects, but have been hampered by disagreements with regulatory agencies in the former case and by funding concerns in the latter case.

At **Fort Ord** (CA), an Environmental Restoration Plan has been developed to accelerate the cleanup of the installation. The installation has used existing authorities with emphasis on actions and problem solving being handled at the lowest possible level of authority. The installation is also using one engineering firm to conduct all investigations and designs for base-wide cleanup. This has shortened the original procurement schedule by 12 months.

The Department of the Navy has a number of pilot projects throughout the country.

At **Camp Lejeune Marine Corps Base** (NC), the installation has accelerated the remedial study phase through the use of a non-phased sampling and analysis approach. Under this approach, all data are gathered during one instead of multiple field events, thereby shaving months off of the study process. Other expedited procedures include use of concurrent Navy/Marine Corps/EPA and State reviews of draft contract documents, and holding meetings at regulators' offices to expedite review. Up to six months has been saved over normal review times by these approaches.

At **Twentynine Palms Marine Corps Air Ground Combat Center** (CA), expediting approaches in use include editing of draft documents on electronic disk, a tiered sampling approach where additional sampling is done only as needed, and use of large indefinite quantity (IQ) contracts to expedite contracting procedures.

Chase Field Naval Air Station (TX) has undertaken several expedited actions in cooperation with regulatory agencies. For example, the installation has designed its site investigations so that they meet both the requirements of RCRA and CERCLA. Use of an Environmental Advisory Committee is helping shorten reviews by regulators, since the reviewers sit on the committee and (in true Total Quality Management fashion) contribute to the review long before a report arrives on their desks.

Davisville Naval Construction Battalion Center (RI) has used turnkey contracts and has overlapped phases of the IRP process to save both time and money. A specific example of such an overlap is starting the design of a landfill remedial action before all field data are available.

Long Beach Naval Shipyard (CA) is still in the early phase of cleanup, and is using value engineering, analysis and management techniques to avoid problems that have affected many Federal Facilities. In addition, a long-term site management plan is being created that will coordinate the IRP with base closure activities.

The Air Force is also conducting pilot projects at several of its installations. **Castle AFB** (CA) has effectively realigned the sequencing of RI/FS studies to identify contamination in the study process and taking early remedial measures. Castle AFB has also proposed a schedule for remedial action that will save 14 months. These savings will be achieved by overlapping activities where possible, and minimizing regulatory review cycles for project documents.

George AFB (CA) has accelerated cleanup of two ground water contamination plumes by working closely with California regulatory agencies. In addition, George AFB has worked with regulators to use innovative technologies such as bioremediation and soil venting. The use of these technologies will result in significant cost savings and accelerated cleanup times.

Mather AFB (CA) has effectively redefined the RI/FS phase for ground water and soil sites to produce a more efficient and technically sound approach to cleanup through the use of focused feasibility studies. The installation is considering reuse objectives in its cleanup and accelerating cleanup at parcels targeted for early reuse.

Myrtle Beach AFB (SC) is establishing a joint management team (JMT) at the installation. It is composed of representatives of the State, EPA, the Army Corps of Engineers, the Air Combat Command, as well as installation staff. The JMT will facilitate coordination and communication among all parties and facilitating site cleanup.

The installation is also using a turnkey approach to contracting. A new contract vehicle, called a Total Environmental Restoration Contract (TERC) provides one contractor for all phases of cleanup, from initial investigation to final remediation.

The use of accelerated interim remedial actions and accelerated lease actions have expedited cleanup at **Norton AFB** (CA) and permitted the profitable reuse of Air Force facilities by an aircraft manufacturer.

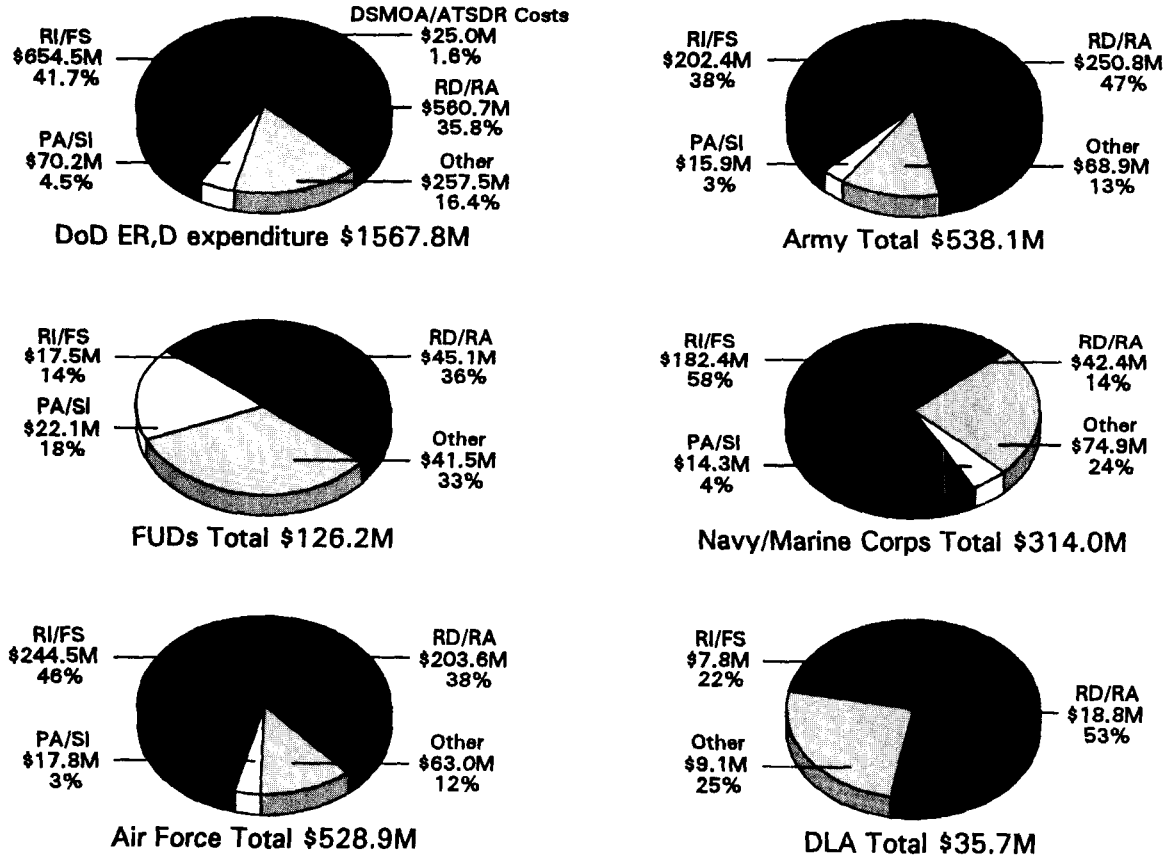
Expedited Pilot Projects					
	Congressional Criteria				
Installation	Full Compliance with Environmental Laws	Use of Existing Authority	Use of Turnkey Contracts	Establishment of Special Expedited Procedures	Use of Competition in Contract Solicitation
ARMY					
Presidio of San Francisco	X	X		X	X
Fort Devens	X	X		X	X
Fort Sheridan *					
Fort Benjamin Harrison **	X	X			X
Fort Ord	X	X	X	X	X
NAVY					
Camp Lejeune MCB	X	X		X	X
Twentynine Palms MCAGCC	X	X		X	X
Chase Field NAS	X	X		X	X
Davisville NCBC	X	X		X	X
Long Beach NSY	X	X		X	X
AIR FORCE					X
Castle AFB	X	X		X	X
George AFB	X	X		X	X
Mather AFB	X	X		X	X
Myrtle Beach AFB	X	X	X	X	X
Norton AFB	X	X		X	X

* Project work cannot proceed because of a disagreement with the state regulators.
** Project work is being delayed because of funding concerns.
"X" indicates activity in this category.

Program Funding

During FY 1992, over 97 percent of the funding provided by Congress through the Environmental Restoration, Defense (ER,D) Appropriation (more commonly referred to as the Defense Environmental Restoration Account (DERA)) was invested in IRP activities. Of this, nearly 36 percent, or $560.7 million was used for RD/RA projects at DoD installations. RI/FS investigation work required almost 42 percent of last year's IRP funds. These funding breakouts are for DERA only. Total funding includes $1,562.4 million in FY 1992 appropriated funds and $5.4 million recovered through court actions against liable third parties. They do not include Base Realignment and Closure Funds.

FY 1992 DERP Expenditures*
(Millions of Dollars)



* Other category includes such items as management, manpower, OHW, BDDR, PRP, etc.
Numbers may not add up to totals due to rounding.

Appendix A
Information Requested by the Superfund Amendments and Reauthorization Act

This Appendix to the Annual Report provides information requested in Section 120(e)(5) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), which applies to all Federal Facilities, and Section 211 of SARA (codified at 10 USC 2706), which pertains to the Defense Environmental Restoration Program.

Federal Facilities Reporting Requirements

Section 120(e)(5) of the SARA legislation specifies that each Federal department or agency shall annually report on the following items:

- A report on the progress in reaching interagency agreements.
- The specific cost estimates and budgetary proposals involved in each interagency agreement.
- A brief summary of the public comments regarding each proposed interagency agreement.
- A description of the instances in which no agreement was reached.
- A report on progress in conducting investigations and studies under Paragraph (1). [Paragraph (1) discusses the timing of RI/FS work at NPL sites].
- A report on progress in conducting remedial actions.
- A report on progress in conducting remedial actions at facilities which are not listed on the National Priorities List.

In addition, SARA specifies "With respect to instances in which no agreement was reached within the required time period, the department, agency, or instrumentality filing the report under this paragraph shall include in such report an explanation of the reasons why no agreement was reached. The annual report required by this paragraph shall also contain a detailed description on a State-by-State basis of the status of each facility subject to this section, including a description of the hazard presented by each facility, plans and schedules for initiating and completing response action, enforcement status (where appropriate), and an explanation of any postponements or failure to complete response action. Such reports shall also be submitted to the affected States."

Appendix B contains a description of each installation final-listed or proposed for listing on the NPL. Each description summarizes the background of the installation, including the types of environmental hazards present, the status of IAG negotiations, the status of IRP response actions, and schedules for initiating and completing those response actions. The information in Appendix B addresses the requirements of the preceding paragraph. Appendix E describes formerly used defense sites (FUDS) that are listed and proposed for listing on the NPL. Appendix B, Table B-1, catalogs DoD facilities that are final-listed and proposed for listing on the NPL and Appendix E, Table E-1, catalogs FUDS that are final-listed on the NPL. The following paragraphs provide detailed responses to the SARA information requirements.

Progress in Reaching Interagency Agreements

During FY 1992, efforts to complete IAGs were accelerated through diligent work by the Components. These IAGs continue to receive a high priority because they establish comprehensive installation-specific arrangements for proceeding with DoD's waste cleanup activities. DoD's goal is to have an agreement in place for all installations final-listed or proposed for listing on the NPL. Extensive field negotiations took place in FY 1992 with EPA and state authorities, and resulted in the signing of more agreements.

The signing of IAGs for 9 installations listed on the NPL in FY 1992 brought the total number of signed IAGs to 85. The installations with finalized agreements are shown in Table A-1. West Virginia Ordnance Works and Weldon Spring Former Ordnance Works are not included on the table because they have been transferred to the FUDS program. The large increase in signed agreements can be attributed to an all-out effort by the Components to negotiate agreements.

Interagency Agreement Cost Estimates and Budgetary Proposals

DERP funding is discussed in the body of this report. The estimate for total program funding is based on existing budget documentation, including program cost data from the individual DoD Component IRPs, and consideration of existing Superfund cost data. Table A-1 lists the installations with signed IAGs along with the estimated expenditures to-date and the estimated additional cost to implement each IAG. Total IRP costs associated with signed IAGs is $11.83 billion ($2.15 billion through FY 1992, and $9.68 billion in future costs). These costs include past IRP costs along with future budgetary estimates for continued investigation and cleanup of the sites at installations where an IAG has been finalized.

Additional details of past expenditures at all DoD NPL installations are shown in Appendix B, Table B-1. That table includes additional funding data for IRAs, RAs, and RI/FSs.

Public Comments Regarding Proposed Interagency Agreements

As of September 30, 1992, public comments had been received on one of the 9 IAGs completed in FY 1992. These comments are summarized below.

Newport Naval Education and Training, Newport, Rhode Island

Five comments were received from the public concerning the status and management of the cleanup process of sites that have not been included in the pre-ROD IAG. The comments were responded to without modification required to the IAG.

Instances Where No Agreement Was Reached

There are no instances where DoD has failed to reach an agreement within the required time period.

Remedial Investigation/Feasibility Study (RI/FS) Progress

Section 120(e)(1) of SARA specifies that RI/FS work must be initiated at sites within six months of listing on the NPL. RI/FS work has been started at 94 DoD installations final-listed or proposed for listing on the NPL. RI/FS start dates are shown in the Installation Narratives in Appendix B.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1992

	Location	Through FY 1992 $(K)	Estimated Additional Cost to Implement IAG $(K)
	ARMY		
1.	Aberdeen PG, MD (2)*	72,718	678,618
2.	Alabama AAP, AL**	19,549	14,196
3.	Anniston AD, AL	13,606	11,791
4.	ARDEC (Picatinny Arsenal), NJ	21,120	62,207
5.	Cornhusker AAP, NE	19,259	15,832
6.	Fort Devens, MA **	10,239	55,888
7.	Fort Devens, Sudbury Annex, MA	5,614	13,194
8.	Fort Dix, NJ	6,332	26,603
9.	Fort Lewis, WA (2)*	21,500	46,610
10.	Fort Ord, CA **	21,333	174,573
11.	Fort Riley, KS	7,992	71,374
12.	Fort Wainwright, AK	7,925	30,012
13.	Iowa AAP, IA	11,474	18,012
14.	Joliet AAP, IL (2)*	12,082	31,862
15.	Lake City AAP, MO	30,556	44,850
16.	Letterkenney AD, PA (2)*	20,320	65,170
17.	Lone Star AAP, TX	6,339	12,866
18.	Longhorn AAP, TX	1,860	37,990
19.	Louisiana AAP, LA	38,963	1,335
20.	Milan AAP, TN	8,039	34,422
21.	Riverbank AAP, CA	12,307	12,857
22.	Rocky Mountain Arsenal, CO	510,900	1,325,956
23.	Sacramento AD, CA**	27,389	39,104
24.	Savanna ADA, IL	16,601	31,565
25.	Schofield Barracks, HI	2,011	24,000
26.	Tobyhanna AD, PA	5,963	11,518
27.	Tooele AD, UT	44,543	105,182
28.	Twin Cities AAP, MN	39,570	163,675
29.	Umatilla AD, OR	20,705	21,172
	Army Total	**1,036,809**	**3,182,434**

*Both NPL listings for this installation are covered under one IAG.
**BRAC installations

Table A-1
Installations Covered by Signed IAGs as of September 30, 1992

	Location	Through FY 1992 $(K)	Estimated Additional Cost to Implement IAG $(K)
	DEPARTMENT OF NAVY		
1.	Albany MCLB, GA	5,924	66,570
2.	Bangor NSB, WA (2)*	21,134	46,450
3.	Barstow MCLB, CA	23,016	92,391
4.	Brunswick NAS, ME	5,880	14,448
5.	Camp Lejeune MCB, NC	9,852	98,560
6.	Camp Pendleton MCB, CA	23,201	52,868
7.	Cecil Field NAS, FL	3,156	57,363
8.	Davisville, RI**	2,217	24,290
9.	Earle Naval Weapons Station, NJ	2,515	33,790
10.	El Toro MCAS, CA	25,492	124,579
11.	Fridley NIROP, MN	7,533	11,128
12.	Jacksonville NAS, FL	9,326	116,019
13.	Keyport NUWC, WA	11,113	29,869
14.	Lakehurst NAWCAD, NJ	15,143	21,275
15.	Moffett NAS, CA**	34,487	24,146
16.	Newport, RI	3,314	61,552
17.	Pensacola NAS, FL	11,667	46,485
18.	Sabana Seca, PR	1,305	15,487
19.	Treasure Island NS – Hunters Point, CA**	42,039	88,025
20.	Warminster NAWCAD, PA	1,539	9,160
21.	Whidbey Island NAS, WA (2)	17,352	49,468
22.	Yuma MCAS, AZ	2,896	116,049
	Department of Navy Total	**280,101**	**1,199,972**
	AIR FORCE		
1.	AFP #4 (General Dynamics), TX	15,129	81,101
2.	Castle AFB, CA**	22,504	63,960
3.	Dover AFB, DE	13,286	34,864
4.	Edwards AFB, CA	39,858	488,420

*Both NPL listings for this installation are covered under one IAG.
**BRAC installations

Table A-1
Installations Covered by Signed IAGs as of September 30, 1992

	Location	Through FY 1992 $(K)	Estimated Additional Cost to Implement IAG $(K)
	AIR FORCE (Continued)		
5.	Eielson AFB, AK	24,336	159,535
6.	Ellsworth AFB, SD	8,521	63,000
7.	Elmendorf AFB, AK	23,227	107,263
8.	Fairchild AFB (4 Waste Areas), WA	13,738	37,000
9.	F.E. Warren AFB, WY	13,696	73,000
10.	George AFB, CA**	41,882	31,355
11.	Griffiss AFB, NY	24,030	115,000
12.	Hill AFB, UT	32,871	509,542
13.	Homestead AFB, FL	7,082	13,000
14.	Loring AFB, ME**	14,710	212,851
15.	Luke AFB, AZ	13,038	19,000
16.	March AFB, CA	25,948	201,161
17.	Mather AFB, CA**	33,860	134,787
18.	McChord AFB, WA (2)*	9,381	13,230
19.	McClellan AFB, CA	81,281	1,560,221
20.	Minn.-St. Paul AFRB (Small Arms Range Landfill), MN	2,707	2,395
21.	Mountain Home AFB, ID	4,246	8,000
22.	Norton AFB, CA**	25,800	57,200
23.	Otis ANGB, MA	23,487	123,815
24.	Pease AFB, NH**	52,910	73,722
25.	Plattsburgh AFB, NY	17,419	58,328
26.	Robins AFB (Landfill #4/Sludge Lagoon), GA	21,955	257,257
27.	Tinker AFB (Soldier Creek/Building 3001), OK	54,012	356,500
28.	Travis AFB, CA	16,093	62,806
29.	Williams AFB, AZ**	12,981	22,853
30.	Wright-Patterson AFB, OH	94,904	295,105
	Air Force Total	**780,646**	**5,236,271**

*Both NPL listings for this installation are covered under one IAG.
**BRAC installations

Table A-1
Installations Covered by Signed IAGs as of September 30, 1992

Location	Through FY 1992 $(K)	Estimated Additional Cost to Implement IAG $(K)
DEFENSE LOGISTICS AGENCY		
1. Defense General Supply Center Richmond, VA	7,821	6,049
2. Ogden Defense Depot, UT	11,246	22,344
3. Sharpe Site, DDRW, CA	17,249	5,324
4. Tracy Site, DDRW, CA	15,098	23,818
DLA Total	**51,414**	**57,535**
DoD TOTAL	**2,148,970**	**9,676,212**

Remedial Action Progress

Section 120(e)(2) of SARA requires that on-site remedial action must be initiated within 15 months of completion of an RI/FS and the issuance of a ROD at an NPL facility. At the end of FY 1992, RD/RA efforts were underway at all 8 DoD NPL installations for which RODs had been completed 15 months earlier or more. These were: Bangor Naval Submarine Base, Lakehurst Naval Air Station, Castle Air Force Base, Fort Dix, Letterkenney Army Depot, Dover AFB, McChord AFB, and Robbins AFB. In FY 1992, final RODs were signed at 22 installations including 7 Army, 8 Navy, and 5 Air Force and 2 DLA installations. DoD anticipates beginning final RA activities at all 22 of these installations within the required time period.

By the end of FY 1992, response actions had been undertaken at 91 DoD installations with sites listed or proposed for the NPL. This work involves several types of Removal Actions and/or IRAs. Additional information on RD/RA initiatives at DoD NPL installations is provided in the narratives in Appendix B.

Remedial Action at Non-NPL Facilities

Remedial actions have been completed or are underway at 725 DoD sites (including sites at NPL installations). At non-NPL facilities, remedial actions had been completed or were underway at 521 sites by the end of FY 1992.

Defense Environmental Restoration Program Reporting Requirements

Section 211 of SARA (10 USC 2706) specifies that the Annual Report to Congress shall include:

"(1) A statement for each installation under the jurisdiction of the Secretary of the number of individual facilities at which a hazardous substance has been identified."

"(2) The status of response actions contemplated or undertaken at each such facility."

"(3) The specific cost estimates and budgetary proposals involving response actions contemplated or undertaken at each such facility."

"(4) A report on progress on conducting response actions at facilities other than facilities on the National Priorities List."

Appendix C summarizes the information requested in items 1, 2, and 4 above. It denotes the number of sites undergoing each step of the IRP at any one installation. The response to item 3 above is found in the Program Funding section of this report. This year, four new milestones have been added which are the counting of interim remedial actions, and the inclusion of remedy-in-place, response complete and site closeout categories.

Appendix C, Table C-1 provides a detailed listing of IRP status for each installation in the program. For each IRP phase listed in Table C-2, five status categories exist: "C," "U," "F," "RC" and "SC." Category "C" represents the total number of sites for which that particular study or action has been completed. The "U" category denotes the number of sites having that particular study or action underway. The "F" category shows the number of sites scheduled to have that study/action performed in the future. "RC" indicates that DoD Component believes the site is closed-out because no further action was required for the site at the completion of the particular IRP phase. "Site closeout (SC)" indicates all required regulatory agency approvals have been obtained. "Remedy-in-place" means that the final RA is functioning properly and performing as designed.

Facilities Having Identified Hazardous Substances

The universe of sites at DoD installations in the IRP is summarized on pages 8 and 9 of this report and explained further in Appendix C. Referring to these tables, a PA is a Preliminary Assessment of an installation to determine if a site may pose hazards to public health or the environment, and may require further study. An SI is a Site Inspection of an installation, which follows a PA and may consist of limited sampling and on-site analysis to determine the existence of actual site contamination. The information collected in the SI is used to score the site with the HRS to determine whether a site should be placed on the NPL. The RI/FS involves quantitative sampling and analysis to identify those sites that are contaminated, the types of contaminants present and their levels, and whether the contamination is causing or contributing to any ground or surface water pollution. RD is an engineering phase following the ROD in which technical drawings and specifications are developed for the subsequent remedial action at a site. RA is the actual construction or implementation phase that follows the design of the selected cleanup alternative for a site.

An RI is required to confirm which sites are actually contaminated, and present a health or environmental risk. Because RIs are still underway at many sites, the absolute number of sites with hazardous substances cannot be determined. A rough estimate can be made by assuming that all sites with RD/RA scheduled, underway at this time or completed have identified hazardous waste that may present a risk. A rough estimate of the number of known hazardous waste sites in DoD is 5,005, the sum of RA work completed, underway, or planned for the future, as shown on page 9.

Status of Current or Contemplated/Undertaken Response Actions

The number of response actions undertaken at any one installation is indicated by the sum of the numbers in the "C" and "U" categories of each response action type listed in the table in Appendix C. Similarly, the "F" category under each type of response action indicates the number of contemplated (future) response actions for each installation.

Four-hundred sixteen cleanups (i.e., final remedial actions) have been completed. This includes 159 Army, 37 Navy, 196 Air Force, and 24 DLA actions at IRP sites. In addition, 960 interim actions have been completed or are underway at 387 installations.

Response Action Cost Estimates and Budgetary Proposals

In FY 1992, the Congress appropriated $1,568 million for the DERP, of which $1,545 million was targeted for the IRP. This includes the supplemental appropriation received in September of 1992. These funds were used primarily to expand and accelerate studies and remedial actions at more than 18,795 individual sites.

Response Action Progress at Non-NPL Facilities

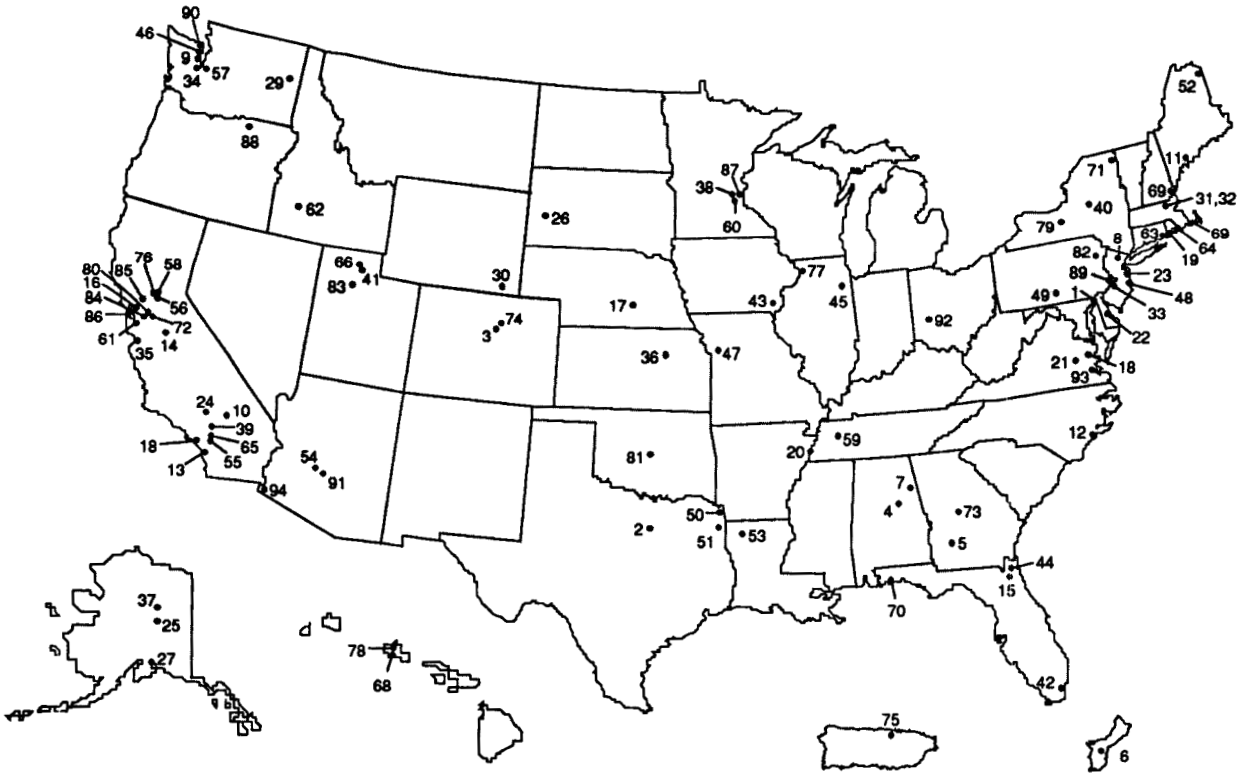
DoD has continued to make progress during FY 1992 in investigating all sites or facilities on DoD installations potentially contaminated with hazardous substances and cleaning up those sites that pose a threat to human health and the environment, regardless of whether they are on the NPL. A total of 18,795 sites on 1,800 military installations are currently included in the IRP. Of the total number of sites, 3,875 are sites associated with facilities listed on the NPL. Facilities not listed on the NPL have a total of 14,920 sites in various stages of the IRP. RAs are ongoing or completed at 521 sites at non-NPL facilities.

Appendix B provides data regarding IRP response actions at DoD facilities on the NPL. The listing in Appendix C, in addition to providing additional information on NPL sites, provides the status of work at non-NPL facilities.

Appendix B
DoD NPL Installations

This Appendix to the Annual Report summarizes information for each DoD installation listed and proposed for listing on the NPL as of the end of FY 1992. Table B-1 provides key data for the facilities listed on the NPL. Narrative summaries for each DoD installation listed on the NPL begins on page B-8.

As of September 30, 1992, 88 DoD installations were listed and six (Pearl Harbor Naval Complex, Concord NWS, Dahlgren NSWC, Yorktown NWS, Defense Distribution Region Central, Andersen AFB) were proposed for listing on the NPL. Two separate areas of seven of these 94 installations are listed twice on the NPL, bringing the total number of DoD NPL listings to 101. Weldon Spring and West Virginia Ordnance Works have been transferred to the FUDS program. They are now included in Appendix E. Weldon Spring is no longer carried in the DoD installation totals.



Location of DoD Installations on the NPL
(Narratives beginning on page B-8 are keyed to map numbers)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
ARMY							
1. Aberdeen PG (Edgewood Area)	MD	53.57	92	21,160	35,035*	FIN	90
1a. Aberdeen PG (Michaelsville Landfill)	MD	31.09	92	5,838	893	FIN	90
2. *Alabama AAP*	AL	36.83	91	8,443	11,106*	FIN	90
3. Anniston AD (Southeast Industrial Area)	AL	51.91	92	2,471	8,671	FIN	90
4. ARDEC (Picatinny Arsenal)	NJ	42.92	92	8,720	7,947	FIN	91
5. Cornhusker AAP	NE	51.13	92	10,984	8,225	FIN	90
6. *Fort Devens*	MA	42.24	92	511*	9,728*	FIN	91
7. Fort Devens Sudbury Training Annex	MA	35.57	—	0	5,564	FIN	91
8. Fort Dix (Landfill Site)	NJ	37.40	92	2,769*	3,563*	FIN	91
9. Fort Lewis (Landfill No. 5)	WA	33.79	—	0	4,557	FIN	90
9a. Fort Lewis Logistics Center	WA	35.48	92	9,697	3,110	FIN	90
10. *Fort Ord*	CA	42.24	92	3,041*	14,318*	FIN	90
11. Fort Riley	KS	33.79	92	4,618	3,367	FIN	91
12. Fort Wainwright	AK	42.40	91	550	7,375	FIN	92
13. Iowa AAP	IA	29.73	92	2,142	9,332	FIN	90
14. Joliet AAP (LAP Area)	IL	35.23	—	0	3,455	FIN	89
14a. Joliet AAP (Mfg Area)	IL	32.08	85	1,496	3,305	FIN	89
15. Lake City AAP (Northwest Lagoon)	MO	33.62	92	12,639	17,523	FIN	89

*Dollars include BRAC money.
FIN = Finalized (signed) • IN = Initiated • NYI = Not yet initiated • (e) = Expected • BRAC installations in italics

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
ARMY (Continued)							
16. Letterkenny AD (PDO Area)	PA	37.51	91	340	2,789	FIN	89
16a. Letterkenny AD (Southeast Area)	PA	34.21	92	2,679	13,043	FIN	89
17. Lone Star AAP	TX	31.85	92	580	5,759	FIN	90
18. Longhorn AAP	TX	39.83	—	0	1,578	FIN	92
19. Louisiana AAP	LA	30.26	92	33,964	4,999	FIN	89
20. Milan AAP	TN	58.15	84	966	6,993	FIN	89
21. Riverbank AAP	CA	63.94	92	5,145	6,553	FIN	90
22. Rocky Mountain Arsenal	CO	58.15	92	329,635	107,312	FIN	89
23. *Sacramento AAP*	CA	44.46	92	19,253*	8,136	FIN	88
24. Savanna ADA	IL	42.20	92	11,664	4,867	FIN	89
25. Schofield Barracks	HI	28.90	—	0	1,860	FIN	91
26. Seneca AD	NY	35.52	92	1,239	2,631	IN	93(e)
27. Tobyhanna AD	PA	37.93	92	2,451	3,435	FIN	90
28. Tooele AD (North Area)	UT	53.95	92	19,978	24,235	FIN	91
29. Twin Cities AAP**	MN	59.16	92	14,043	23,943	FIN	87
30. Umatilla DA (Lagoons)	OR	31.31	92	316*	19,371*	FIN	90

*Dollars include BRAC money.
**Listed as New Brighton/Arden Hills, not as a federal facility.

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
DEPARTMENT OF NAVY							
1. Albany MCLB	GA	44.65	92	1,490	3,820	FIN	91
2. Bangor NSB	WA	55.91	92	included below		FIN	90
2a. Bangor Ordnance Disposal	WA	30.42	92	580	20,350	FIN	90
3. Barstow MCLB	CA	37.93	92	1,620	10,680	FIN	91
4. Brunswick NAS	ME	43.38	92	1,060	4,360	FIN	89
5. Camp Lejeune MCB	NC	33.13	92	1,690	5,720	FIN	91
6. Camp Pendleton MCB	CA	33.79	86	7	17,270	FIN	91
7. Cecil Field NAS	FL	31.99	—	—	2,060	FIN	91
8. Concord NWS***	CA	50.00	92	5,730	13,560	NYI	—
9. Dahlgren NSWC***	VA	50.03	91	1,330	1,130	NYI	93(e)
10. *Davisville NCBC*	RI	34.52	91	340	1,380	FIN	92
11. Earle NWS	NJ	37.21	92	100	1,180	FIN	91
12. El Toro MCAS	CA	40.83	92	—	24,120	FIN	91
13. Fridley NIROP	MN	30.83	92	4,050	3,440	FIN	91
14. Jacksonville NAS	FL	32.08	92	2,050	5,950	FIN	91
15. Keyport NUWC	WA	32.61	92	50	10,390	FIN	90
16. Lakehurst NAWCAD	NJ	50.53	92	8,200	6,220	FIN	89
17. *Moffett NAS*	CA	24.49	92	2,730	31,327	FIN	89

***Proposed for listing on the NPL.

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
DEPARTMENT OF NAVY (Continued)							
18. New London NSB	CT	36.53	91	530	2,130	IN	93(e)
19. Newport NETC	RI	32.25	92	90	2,660	FIN	92
20. Pearl Harbor Naval Complex***	HI	70.82	92	10,210	5,320	NYI	—
21. Pensacola NAS	FL	42.40	91	3,540	5,850	FIN	91
22. Sabana Seca NSG	PR	34.28	88	10	1,240	FIN	92
23. *Treasure Island NS - Hunters Point Annex*	CA	48.77	90	3,140	37,959	FIN	90
24. Warminster NAWCAD	PA	57.93	90	70	1,400	FIN	90
25. Whidbey Island NAS (Ault Field)	WA	47.58	92	340	13,960	FIN	90
25a. Whidbey Island NAS (Seaplane Base)	WA	39.64	92	included above		FIN	90
26. Yorktown NWS ***	VA	50.00	—	—	2,830	NYI	93(e)
27. Yuma MCAS	AZ	32.24	92	590	380	FIN	92
AIR FORCE							
1. AFP #4 (General Dynamics)	TX	39.92	92	6,196	6,001	FIN	90
2. AFP PJKS	CO	42.93	92	5,168	1,513	IN	93(e)
3. Andersen AFB ***	GU	50.00	92	3,551	9,579	IN	93(e)
4. *Castle AFB*	CA	37.93	92	1,379	16,604	FIN	89
5. Dover AFB	DE	35.89	92	995	6,425	FIN	89
6. Edwards AFB	CA	33.62	91	5,614	27,215	FIN	90

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
AIR FORCE (Continued)							
7. Eielson AFB	AK	48.14	92	7,055	14,799	FIN	91
8. Ellsworth AFB	SD	33.62	91	690	7,831	FIN	92
9. Elmendorf AFB	AK	45.91	92	6,102	16,779	FIN	92
10. Fairchild AFB (4 Waste Areas)	WA	31.98	92	1,978	11,265	FIN	90
11. F.E. Warren AFB	WY	39.23	90	2,027	11,669	FIN	91
12. *George AFB*	CA	33.62	92	12,211	4,167	FIN	90
13. Griffiss AFB	NY	34.20	92	11,844	12,178	FIN	90
14. Hill AFB	UT	49.94	92	8,528	16,275	FIN	91
15. Homestead AFB	FL	42.40	90	722	6,360	FIN	91
16. *Loring AFB*	ME	34.49	92	4,697	9,563	FIN	91
17. Luke AFB	AZ	37.93	92	1,999	9,392	FIN	90
18. March AFB	CA	31.94	92	9,506	16,351	FIN	90
19. *Mather AFB*	CA	28.90	92	306	29,084	FIN	89
20. McChord AFB (Wash Rack/ Treatment Area)	WA	42.24	92	1,610	7,771	FIN	89
20a. McChord (American Lake Garden Tract)	WA	31.94	92	included above		FIN	90
21. McClellan AFB	CA	57.93	92	29,107	43,598	FIN	90
22. Minneapolis-St. Paul Reserve Base	MN	33.62	92	1,102	1,544	FIN	89
23. Mountain Home AFB	ID	57.80	92	65	4,180	FIN	92

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 92	RI/FS $(K) Thru FY 92	IAG Status	IAG Signing Year
AIR FORCE (Continued)							
24. *Norton AFB*	CA	39.65	92	5,585	18,460	FIN	89
25. Otis ANG Base/ Camp Edwards	MA	45.92	92	4,865	17,107	FIN	91
26. *Pease AFB*	NH	39.42	92	10,534	42,556	FIN	90
27. Plattsburgh AFB	NY	30.34	92	6,363	11,057	FIN	91
28. Robins AFB (Landfill #4/Sludge Lagoon)	GA	51.66	92	11,301	7,323	FIN	89
29. Tinker AFB (Soldier Creek/Building 3001)	OK	42.24	92	32,534	18,520	FIN	88
30. Travis AFB	CA	29.49	92	2,172	13,940	FIN	90
31. *Williams AFB*	AZ	37.93	92	6,582	6,078	FIN	90
32. Wright-Patterson AFB	OH	57.85	92	22,939	64,335	FIN	91
DEFENSE LOGISTICS AGENCY							
1. Defense General Supply Center Richmond	VA	33.85	92	507	6,562	FIN	91
2. Defense Distribution Region Central ***	TN	58.06	91	1,200	2,475	IN	93(e)
3. Ogden Defense Depot	UT	45.10	92	811	4,859	FIN	89
4. Sharpe Site, DDRW	CA	42.24	92	6,009	11,010	FIN	89
5. Tracy Site, DDRW	CA	37.16	92	3,408	11,121	FIN	91

Aberdeen Proving Ground (1)
(Edgewood Area and Michaelsville Landfill)
Edgewood and Aberdeen, Maryland

Service: Army

Size: 72,518 Acres

HRS Score: 53.57 (Edgewood Area)
31.09 (Aberdeen Area)

Base Mission: Develop and test equipment; Provide training

IAG Status: IAG signed March 1990

Action Dates: PA/SI completed 1976; Placed on NPL 1990

Contaminants: VOCs, semi-volatiles, arsenic, phosphates, PCBs, UXO, explosives, nitrates, solvents, petroleum products, pesticides, heavy metals, asbestos, low-level RAD waste, chemical surety material and their degradation products

Funding to Date: $72.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified eight areas of contamination and recommended three areas for preliminary survey and two for further monitoring. Large areas contaminated or potentially contaminated with UXO, chemical munitions, and manufacturing wastes were identified. RCRA Facility Assessments (RFAs) completed under the RCRA Corrective Actions Permits in 1990 refined PA/SI work and identified 319 Solid Waste Management Units (SWMUs). These SWMUs were combined into 13 study areas under an IAG that was signed by EPA on March 27, 1990. Substantial VOC contamination of surface and ground water was detected. As a result, four drinking water wells were removed from service.

Remedial Investigation/ Feasibility Study (RI/FS)

Environmental investigations initially pursued under RCRA Corrective Actions Permits have been submitted to EPA as initial documents under the IAG. While no significant off-base migration has been reported from any of the contaminated areas on base, small amounts of surface water contamination (VOCs) have been identified in on-post portions of the Chesapeake Bay and on-post tributaries to the Chesapeake Bay. Resampling has confirmed original survey findings. The IAG requires that initial studies be revised into RI/FS efforts under CERCLA/SARA. A total of 23 RI/FS and risk assessment work plans have been drafted and finalized in 1992. Presence of explosives and chemical agents severely restricts RI/FS actions prolonging study time requirements. Thirteen ground water and 26 water level monitoring wells have been installed as part of the RI at the Fire Training Area.

Remedial Design/ Remedial Action (RD/RA)

Removal actions have been completed at 21 SWMUs (including eight underground storage tanks). A total of 1,200 tons of PCB and DDT contaminated soil and concrete was removed and incinerated during 1991. In 1992, 799 tons of hazardous materials and 116 tons of non-hazardous materials were removed. Five removal actions were completed in 1992. Twenty-eight removal actions are scheduled for 1993. RODs for O Field and the White Phosphorous Study Area were published in 1991. One ROD for the Michaelsville Landfill cap and cover system was published in 1992. One remedial design for a landfill cap and cover system was completed and approved and a remedial action contract awarded in 1992.

Air Force Plant #4 (General Dynamics) (2)
Fort Worth, Texas

Service: Air Force

Size: 602 Acres

HRS Score: 39.92

Base Mission: Manufacture aircraft and associated equipment

IAG Status: Pre-ROD IAG signed August 20, 1990

Action Dates: PA/SI completed 1984; Placed on NPL 1990; RI/FS scheduled for completion 1992

Contaminants: Solvents, paint residues, spent process chemicals, PCBs, waste oils and fuels, heavy metals, VOCs, cyanide

Funding to Date: $15.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Air Force Plant #4, owned by the government, is operated by General Dynamics. Approximately 13,000 people in the city of White Settlement rely on the aquifer underlying the base for drinking water. Thirty sites were studied and identified as potentially contaminated. Ground and surface water contaminants include di-, tri-, and tetrachloroethylene, ethylbenzene, toluene, methylene chloride, heavy metals, cyanide, and petroleum products.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in August 1986. Confirmation/quantification studies examined 30 sites and confirmed contamination of soil, surface, and ground water. Twenty-three sites were recommended for additional RI/FS study, and one site will undergo additional sampling. No further action was recommended for seven sites. The RI/FS scheduled for completion in 1992 was delayed in part due to unanticipated geologic complexities and is expected to be completed in 1993.

Remedial Design/ Remedial Action (RD/RA)

Contaminated soil was excavated at four sites in 1986. Wells for the city of White Settlement are sampled quarterly by the Air Force. An interim ground water treatment system to address contamination that originated from two spill sites will be on line by April 1993. Quarterly monitoring is ongoing. Long-term monitoring will begin in 1994.

Air Force Plant PJKS (3)
Waterton, Colorado

Service: Air Force

Size: 464 Acres

HRS Score: 42.93

Base Mission: Research and development; Missile assembly; Engine testing

IAG Status: Initiated and expected to be signed 1993

Action Dates: PA/SI completed 1986; Draft Final RI/FS 1988; Placed on NPL 1989

Contaminants: Chlorinated organic solvents, fuel, hydrazine

Funding to Date: $10.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The site is surrounded by approximately 5,200 acres of land owned by Martin Marietta (Denver Aerospace). Since 1956, Martin Marietta has developed missiles and missile components for the Air Force at this location. The production, testing, and storage facilities are located southeast of, and at a lower elevation than, the Air Force property. Chlorinated organic solvents frequently were used to clean equipment and piping. Fuels containing hydrazine were developed, purified, and tested in support of the Titan III missile program.

The Air Force PA/SI investigated potentially contaminated areas on the plant, including the Deluge Containment Pond, a two-million gallon, concrete-lined surface impoundment that receives water potentially contaminated with hydrazine from rocket engine testing; the D-1 landfill, which accepted construction debris, household wastes, and unspecified chemical wastes before its closure and cover in 1974; and three areas within a hydrazine-contaminated water and TCE spill zone.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in March 1986. Samples taken in 1988 from monitoring wells near the contaminated areas detected TCE, 1,1,1-trichloroethane, and Freon 113. Tests conducted in 1986 identified TCE and cis-1,2-dichloroethylene in Brush Creek, which flows from the plant 1.8 stream miles to the South Platte River. Hydrazine was also discovered in soils primarily around the old test facilities. The Air Force published a draft RI/FS in December 1988. The U.S. Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) have contested the findings in the RI/FS. Extensive negotiations to resolve the issues have continued during 1992 and are nearing final resolution.

Remedial Design/ Remedial Action (RD/RA)

Seventeen draft final No Further Action Decision Documents were published and forwarded for EPA's and CDH's review and concurrence prior to 1992. These documents covered the removal and remediation of eleven USTs. A facility-wide ground water monitoring program began in May 1991. The program sampled 96 monitoring wells and eight surface water stations. A study to establish background soil quality was completed. The contaminant levels which occur naturally were identified. A ground water extraction system is currently located on Martin Marietta property on the West Fork Brush Creek, near its confluence with the East Fork. This system intercepts contaminants migrating in the alluvial ground water system of the West Fork of Brush Creek.

Alabama Army Ammunition Plant (4)
Childersburg, Alabama

Service: Army

Size: 2,200 Acres

HRS Score: 36.83

Base Mission: Inactive; Former explosives manufacturing plant (closure installation)

IAG Status: Pre-ROD IAG signed December 1989; Became effective March 1990

Action Dates: PA/SI completed 1983; RI/FS initiated 1985; Placed on NPL 1987

Contaminants: Munition-related wastes, heavy metals, nitroaromatic compounds

Funding to Date: $19.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified a number of sites as potential contaminant migration sources, with several targeted for an RI/FS. The studies identified potential vertical contaminant migration within the aquifers and surface water contamination. A confirmation study delineated parameters and migration patterns for one aquifer and identified nitroaromatic compounds in onsite soils and in an aquifer beneath and downgradient from the manufacturing areas.

Additional sites were identified in subsequent studies; however, it is anticipated that several of these sites will not require further action.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS, begun in September 1985, is currently ongoing under the Federal Facilities Agreement (FFA). RIs for Area A soils and Area B have been tentatively approved. Risk assessments for these areas (and an RI for Area A ground water) are currently under negotiation with EPA Region IV. A proposed plan for additional soil removal (and incineration) from Area A has received regulatory approval. Investigations to date have determined that the ground water is contaminated with nitroaromatic compounds in concentrations above Federal Ambient Water Quality Criteria (AWQC). Onsite surface water is contaminated with nitroaromatic compounds and lead. Migration of contaminants at levels exceeding criteria is not expected.

Remedial Design/ Remedial Action (RD/RA)

Cleanup of Area A, including soil excavation and decontamination of storage igloos and buildings, was completed in 1988. Additional sampling was conducted in 1991 to confirm completion of cleanup at Area A following EPA Region IV's request. Two additional portions of soil have been identified for remediation as a result of this sampling effort.

A determination has been made by the Army to address the stockpiled soils from the remediation of Area A that are now stored in Area B as a separate operable unit (OU). An incineration contract was awarded in May 1991, allowing the option of incinerating the explosives-contaminated soils located in Area B. The Feasibility Study, proposed plan, and ROD for this OU were finalized in FY 1992. Incineration is currently scheduled for summer 1993. Approximately 25,000 cubic yards of soil will be incinerated. The two additional portions of soil from Area A are expected to be remediated during this effort.

Albany Marine Corps Logistic Base (5)
Albany, Georgia

Service: Navy

Size: 3,327 Acres

HRS Score: 44.65

Base Mission: Supply center; Training center

IAG Status: Signed July 1991

Action Dates: PA/SI completed 1985; Placed on NPL 1989; RI/FS initiated 1989

Contaminants: Waste oil and fuels, solvents, mineral spirits, PCBs, paints and thinners, stripping compounds, DDT, cleaning solutions

Funding to Date: $5.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, was completed in September 1985 and identified eight potentially contaminated sites (01-08) at Marine Corps Logistics Base Albany (MCLB Albany). Six sites (01, 02, 03, 05, 06, and 07) were recommended for Confirmation Studies (CSs). These sites include landfills, a storm sewer, and a leaking drum storage area. Sites 04 and 08 were not originally recommended for further study, but both were included in the IRP later. Site 04 is included in a PSC/RI/FS, which began in FY 1992, and is underway. Site 08 is slated for a Remedial Investigation/ Feasibility Study (RI/FS) beginning in August 1994.

A CS, equivalent to an SI, was completed in May 1987 and addressed a total of nine sites. Six of the nine sites were recommended for confirmation in the IAS. Three new sites were added (09, 10, and 11). Additional work was recommended for all sites except Sites 07 and 10, for which no further action was recommended.

Remedial Investigation/ Feasibility Study (RI/FS)

The FFA identified 13 potential sources of contamination (PSCs) requiring an RFI and 11 PSCs requiring screening. The PSCs have been separated into these categories depending on the level of investigation previously performed at the individual PSCs. The site screening PSCs will require initial confirmation and characterization sampling prior to determining if further investigation is necessary. An RCRA Facility Investigation (RFI), completed in September 1989, addressed nine sites; all were sites included in the FFA.

An enforceable schedule has been prepared as part of the FFA's site management plan. Parts of this schedule have been superseded by an expedited schedule. The 13 sites requiring RI/FS have been divided into Operable Units (OUs) based on the type of waste disposed or typical profile of suspected contaminants.

A Technical Review Committee (TRC) has been formed and meetings periodically held since September 1989.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will commence upon completion of the RI/FS activities and is expected to consist of action such as capping, ground water pump and treatment, excavation and disposal of contaminated soil and long-term monitoring (LTM).

An Interim Record of Decision (ROD) was signed in August 1992 for PSC 16, a former transformer station, and PSC 17, a chrome plating waste area. The selected remedies will consist of excavation capping and ground water monitoring. The Interim ROD was signed approximately one month ahead of the expedited schedule and 17 months ahead of the enforceable schedule.

Andersen Air Force Base (6)
Yigo, Guam

Service: Air Force

Size: 15,400 Acres

HRS Score: 50.00

Base Mission: Provide highest quality peacetime and wartime support - people, equipment, facilities to protect global power and reach and protect U.S. interests from our vital location.

IAG Status: Pre-ROD IAG expected to be signed early 1993

Action Dates: PA/SI completed 1985; Placed on NPL 1992

Contaminants: POL, solvents, tars, UXO

Funding to Date: $16.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

Early PAs identified active and abandoned landfills and burial trenches referred to as burrow pits, fire training areas, and chemical storage areas. Many of the 50 sites identified in the PAs are above the sole source aquifer for the Capitol City of Agana, Guam. Due to the large population dependent upon the high quality limestone karst aquifer, preliminary findings recommended further action at many of the sites originally identified in the PAs.

Remedial Investigation/ Feasibility Study (RI/FS)

The active landfill complex at Andersen AFB has been under a Resource Conservation and Recovery Act Closure Plan that has driven extensive assessment and design activities to date. This activity is planned to be shifted from RCRA oversight to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) oversight upon signing of the Federal Facility Agreement. The FFA is projected to be signed in early 1993.

The landfill complex, along with the 39 sites listed in the FFA are divided into six operable units (OUs) under the FFA. An RI/FS for Andersen AFB was initiated in 1986 but since the initiation of the FFA process has been deferred. All data generated in the 1986 RI/FS is being reviewed for QA/QC concerns. Acceptable data will be integrated into new RI/FS initiatives developed through the FFA process.

An RI/FS must be conducted for each of the OUs. Due to the depth of the aquifer, which often exceeds 400 feet, and the complex nature of karst geology, the aquifer is not well characterized. A major dye tracer study will be completed in 1993 to characterize the aquifer in relation to the Andersen AFB landfill complex. This study will drive future investigation activities as well as risk assessment assumptions and ultimately, selection of remedial actions.

Due to the rapid development of non-military lands on Guam, Andersen AFB has become a defacto nature preserve for federally listed endangered species. Federal Endangered Species Act, Section 7 consultations are required before any field activities can be conducted in endangered species habitat. Extensive ecological inventories will have to be completed to provide a baseline for future decision-making at the affected IRP sites.

Remedial Design/ Remedial Action (RD/RA)

An interim action is being planned for the Andersen AFB landfill complex. All other sites are being evaluated throughout the investigation process to determine if early actions are appropriate. Currently, no other early actions are planned. Unless additional sites are identified as appropriate for early actions, RI/FSs will have to be completed before further remedial design and remedial action can be implemented at Andersen AFB.

Anniston Army Depot
(Southeast Industrial Area)
Anniston, Alabama

Service: Army

Size: 15,245 Acres

HRS Score: 51.91

Base Mission: Maintain combat vehicles and artillery equipment

IAG Status: Pre-ROD IAG signed June 1990

Action Dates: PA/SI completed 1983; Initial RI/FS completed 1989; Placed on NPL 1989

Contaminants: VOCs, heavy metals, paints, acids, solvents, phenols, degreasers, ammunition wastes, oils and greases, fly ash

Funding to Date: $13.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified past disposal or spill sites potentially contaminated with hazardous wastes. The PA/SI also determined that hazardous wastes from some sites had contaminated the surface water and were probably also contaminating the ground water.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS work confirmed that the local ground water is contaminated, primarily with VOCs, phenols, and metals. Chrome at levels exceeding the National Pollutant Discharge Elimination System (NPDES) permit have been detected in ground water. Low levels of contaminants have migrated beyond the depot boundary. Studies since 1983 have indicated that contamination on the depot originates from four main sources: the residual Z-1 trench area, the Building 114 dewatering sump, the southern landfill area, and the northeast industrial area near Building 130. Activities in 1992 included follow-on RI/FS work resulting from EPA and state review of previous work under the Federal Facility Agreement. Investigations were conducted at five operable units covering the southeast industrial area.

Remedial Design/ Remedial Action (RD/RA)

Approximately 62,000 tons of contaminated materials at Site Z-1 were excavated and removed to an RCRA disposal facility in 1983. Contaminated (VOCs, phenols, chromium) ground water from the Building 114 dewatering sump is treated via chemical filtration, air stripping, and carbon filtration of VOCs. Expansion of the existing system to allow treatment of chromium currently is being contracted under USACE.

Interim ground water extraction and treatment systems were installed in areas of major contamination within the Southeast Industrial Area, including the Site Z-1 trench area, the landfill, and the northeast area near Building 130. A Record of Decision (ROD) was signed in September 1991 to cover this interim remedial action.

ARDEC (Picatinny Arsenal) (8)
Rockaway Township, New Jersey

Service: Army

Size: 6,500 Acres

HRS Score: 42.92

Base Mission: U.S. Army Armament Research, Development, and Engineering Center (ARDEC)

IAG Status: Signed July 1991; Effective August 1991; Schedule approved October 1991

Action Dates: PA/SI completed 1987; Placed on NPL 1990

Contaminants: Heavy metals, VOCs, nitroaromatics and BNAs

Funding to Date: $21.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI determined that contamination in ground water, surface water, sediment, and soils is present.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS concept plan, which reviewed all existing environmental data and prioritized sites based on their potential impact on public health and the environment, was finalized in March 1991. Overall, 160 sites have been identified and grouped into three RI phases and the Burning Ground RI study. The Phase 1 RI addresses six areas which include 51 sites. Final plans for the Phase 1 RI are due to the regulatory agencies in early 1993. A contract has been awarded to prepare the RI plans for the Phase 2 sites. These plans are due to the regulators in March 1993. Plans for the RI of the Burning Ground are currently being revised. Implementation of these RI activities is covered under the IAG with EPA.

Remedial Design/ Remedial Action (RD/RA)

RDX has been detected in off-post residential wells and bottled water is being supplied. Negotiations are currently underway to extend municipal waterlines to the affected residents. During the spring of 1992, TCE-contaminated soil was removed from the area around Buildings 24 and 95 (inactive metal shops). Additionally, an IRA to pump and treat TCE-contaminated ground water near Building 24 was implemented in September 1992.

A removal action was conducted at the post farm landfill during the summer of 1992. Contaminated soils and over 250 drums were removed from the landfill.

Bangor Naval Submarine Base (9)
Silverdale, Washington

Service: Navy

Size: 6,692 Acres

HRS Score: 30.42 (Site A)
55.91 (Sub Base Bangor)

Base Mission: Support for Trident submarines

IAG Status: IAG signed January 1990

Action Dates: PA/SI completed 1983; Site A placed on NPL 1987; RI/FS initiated 1988; Subase Bangor and Site F placed on NPL 1990

Contaminants: TNT, RDX, picric acid, picramic acid

Funding to Date: $21.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (equivalent to a PA) was completed in June 1983. Of Bangor NSB's 29 sites, 11 were recommended for further study due to suspected contamination of ground water and soil.

A Current Situation Report for Site A was completed in April 1988 and found that surface soil at Site A was contaminated with TNT and that the burn mounds were contaminated with RDX. Shallow ground water samples were also found to contain TNT and RDX. The report recommended three Interim Remedial Actions to isolate and control the site, including covering the burn mounds, erecting a fence, and abandoning grouting wells. These actions were taken. All of the sites were recommended to continue to an RI/FS.

On January 29, 1990, the Department of the Navy signed a Federal Facility Agreement (FFA) for Bangor NSB. The FFA grouped the 22 sites identified into 7 operable units.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS for OU1 was completed in August 1991, and the Record of Decision formalizing the selected remedy was signed in December 1991. The remedy involves cleaning the contaminated soil using a passive washing system for TNT and RDX. Six separate RI/FS for the remaining Operable Units are underway and are expected to be completed in 1993 and 1994.

A local citizen's group, Over-C, has obtained a grant from EPA and the State of Washington to oversee operations at the Bangor NSB and Keyport NUWC installations.

Remedial Design/ Remedial Action (RD/RA)

RD for OU1 is underway and includes three phases of work for the operable unit. Phase I involves the construction and use of a leachate basin for removed soil; Phase II involves the design and implementation of a leachate treatment system; and Phase III involves long-term treatment of ground water for up to ten years.

A Record of Decision for an Interim Remedial Action at OU2 was signed in September 1991 to contain the spread of contaminated ground water from Site F. The action is expected to begin in early 1993. The action will involve pumping and treating the ground water and then reintroducing the ground water into the aquifer. The first treatment system used will be an activated carbon system. This system will later be replaced with an ultraviolet oxidation system.

A removal action is currently underway at a former disposal site. The action involves the removal of drums beside and beneath a roadway embankment. The first phase of the drum removal was completed in the fall of 1992, with the second phase targeted for the spring of 1993.

A removal action involving the excavation and disposal of buried drums was completed at two other sites in September 1992.

Barstow Marine Corps Logistics Base (10)
Barstow, California

Service: Navy

Size: 5,687 Acres

HRS Score: 37.93

Base Mission: Store and distribute supplies and equipment

IAG Status: Signed October 1990

Action Dates: PA/SI completed 1983; Placed on NPL November 1989; RI/FS initiated in 1990

Contaminants: Waste fuels, oils, degreasers, solvents, paints/paint residues, pesticides, PCBs

Funding to Date: $23.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI was completed in 1983 and identified 33 potentially contaminated sites. The SI recommended that four sites progress into the RI/FS phase.

Ground water from the Mojave River Basin beneath the Nebo and Yermo areas used for both domestic and agricultural purposes is contaminated with VOCs. Laboratory analyses conducted in November 1988 indicated VOC contamination of the Yermo drinking and ground water, at concentrations exceeding California drinking water standards. An RFA was initiated in 1991 and is scheduled for completion in 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS work plan and sampling and analysis plan were conditionally agreed to by FFA parties in May 1990. These documents address 38 potentially contaminated sites and include a solid waste water quality assessment test of the Yermo Landfill. The 38 sites are divided into six operable units. An FFA was signed in 1990 and establishes an RI/FS schedule for all 38 sites. An investigation of the water quality at 17 offsite drinking water wells in the adjacent community of Yermo was completed in May 1990. Two wells showed contamination at trace levels. The offsite wells are scheduled for continued monitoring during the RI. The first TRC meeting was held in November 1990. RI/FS field work was initiated in 1991 with funding provided for the installation of monitoring wells, sampling and analysis of ground water and soil, and preparation of an RI/FS report addressing several Operable Units (OUs).

Remedial Design/ Remedial Action (RD/RA)

A removal action involving removal of industrial waste sludge is planned at the Sludge Waste Disposal Area, Yermo (Site 18) and the Sludge Storage Area, Yermo (Site 29), and is expected to be completed in FY 1993.

An Interim Remedial Action involving removal of volatile organic compound contamination in ground water at the Yermo Annex is currently underway. Two activated carbon ground water treatment systems were installed in September 1989 and are scheduled to operate until 1994 or until it can be proved that contamination no longer exists. The system has been effective in removing volatile organic contamination to below detectable limits.

Two Interim Remedial Actions are planned for OUs 1 and 2. The percolation ponds at the Sanitary Sewer Plant will be aerated and a filter will be installed to remove tetrachloroethylene from water before discharge to the ponds if sampling indicates concentrations above the state action level. In addition, a treatment system will be installed to remove volatile organic contamination from ground water at the Yermo Annex and is expected to be completed in FY 1998.

Brunswick Naval Air Station (11)
Brunswick, Maine

Service: Navy

Size: 7,259 Acres

HRS Score: 43.38

Base Mission: Provide facilities, services, materials, and aircraft for anti-submarine warfare

IAG Status: Pre-ROD IAG signed 1989 between EPA and the Navy; Modified in 1990 to include the Maine Department of Environmental Protection

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Waste oils, contaminated fuels, solvents, acids, paint residues, photographic chemicals, pesticides/herbicides, asbestos

Funding to Date: $5.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Initial Assessment Study (IAS), equivalent to a PA, and the Confirmation Study (CS), equivalent to an SI, were completed in 1983 for Brunswick Naval Air Station (Brunswick NAS). Thirteen sites were identified as potentially contaminated areas and all were recommended for further study. Another CS was completed in May 1985 on all 13 sites and 12 of the original 13 went for further study in a Remedial Investigation (RI). Contamination of ground and surface waters was the major concern justifying the Remedial Investigation/Feasibility Study.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS began in September 1985 for the twelve sites recommended for further study by the CS. In October 1991, the RI was completed for the 12 sites and all 12 went into the FS phase. In April 1992, the report of the detailed FS was submitted. Site 12 is expected to have a Record of Decision (ROD) recommending no further action submitted and final in FY 1993 to close out the site. Sites 02 and 07 will proceed with LTM which will last into FY 1998 and after. The balance of the sites are in the process of developing a Remedial Design.

Remedial Design/ Remedial Action (RD/RA)

Two RODs were signed between the EPA and the Department of the Navy in June 1992. The first ROD is for a final remedy including containment by construction of a cap over the Sites 1 and 3 (landfills) and a slurry wall around them to divert clean water away from the sites. Contaminated ground water contained by the cap and slurry wall will be pumped through extraction wells and treated by ultraviolet (UV) oxidation to destroy organic compounds. The second ROD is for Sites 04, 11, and 13. The action prescribed by the second ROD will be a pump and treat with LTM.

A Non-Time Critical Removal Action course is being pursued by the Engineering Field Division (EFD) to expedite the cleanup at Building 95, the Former Pesticide Shop. Residuals of the pesticide DDT were found to be a contaminant at this site. RD/RA will be in FY 1993 with the remediation complete in FY 1994. LTM will be prescribed and will last into FY 1998 or after.

Camp Lejeune Marine Corps Base (12)
Jacksonville, North Carolina

Service: Navy

Size: 151,000 Acres

HRS Score: 33.13

Base Mission: Provide housing, training, logistical, and administrative support for Fleet Marine Force Units

IAG Status: Pre-ROD IAG signed February 1991

Action Dates: PA/SI completed 1983; RI/FS initiated 1984; Placed on NPL 1989

Contaminants: Waste oils, fuels, solvents, battery acid, lithium batteries, paints, thinners, pesticides/herbicides, PCBs

Funding to Date: $9.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 76 past spill and disposal sites as potentially contaminated with migrating contaminants. Thirty sites were targeted for further investigation. Additional sites have been discovered. Currently, 16 sites are in the PA/SI phase. Wastes disposed of in landfills create a potential for soil, surface, and ground water contamination. Surface waters drain from the base to the Atlantic Ocean through the New River, both of which support recreational and commercial fishing. Several endangered species, including the American Alligator and the RedCockaded Woodpecker, inhabit protected areas on the base. Ground water is the sole source of potable water for the base and surrounding communities.

Remedial Investigation/ Feasibility Study (RI/FS)

An accelerated RI/FS for the Hadnot Point Industrial Area is expected to be completed in 1992. The RI/FS already has identified fuel and chlorinated solvents in the ground water and the contamination source is being investigated. Several on-base drinking water supply wells have been closed. The information available on the majority of the remaining 24 sites has been consolidated into an RI interim report focused on scoping the remainder of the RI/FS requirements.

The TRC held a meeting in February to discuss RI/FS documentation for the Hadnot Point Industrial Area Interim Remedial Action is complete.

On September 23, 1992, the Commanding General of Camp Lejeune MCB signed an Interim Record of Decision for the treatment of TCE-contaminated ground water at the Hadnot Point Industrial Area (Site 78). The Interim Remedial Action will consist of eight extraction wells, two air strippers on-site, and discharge of the treated water into the sanitary sewer system.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1992. A fence was installed around the Rifle Range Chemical Dump in 1990.

An interim Record of Decision was signed in FY 1992 and the design of the pump and treat system for Hadnot Industrial Area Interim Remedial Action commenced in August 1992.

Camp Pendleton Marine Corps Base (13)
San Diego County, California

Service: Navy

Size: 125,000 Acres

HRS Score: 33.79

Base Mission: Provide housing, training, logistical, and administrative support for Fleet Marine Force Units

IAG Status: Signed October 1990

Action Dates: PA/SI completed 1988; RI/FS initiated 1989; Placed on NPL 1990

Contaminants: VOCs, spent oils, fuels, PCBs, pesticides, solvents

Funding to Date: $23.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study completed in September 1984, identified eight potentially contaminated sites at Camp Pendleton MCB. Three sites were found not to pose a threat to human health or the environment, and no further action was recommended. Five sites were recommended for further investigation. A Confirmation Study, Verification Step Report completed in July 1988, addressed Sites 03, 04, 05, 06, and 08. During the SI field program, an additional site, the 41 Area Stuart Mesa Waste Stabilization Pond (Site 09), was added to the SI at the request of the Department of the Navy to meet the requirements of the California Toxic Pits Control Act. As a result of the SI, all six sites were recommended for further investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1989 to investigate the nine original sites. RI/FS scoping documents, including the RI/FS work plan, health and safety plan, community relations plan, and sampling and analysis plan have been developed. An FFA was signed by DoD, EPA, and the State of California in October 1990. A TRC has been formed and includes members from Camp Pendleton MCB; Southwest Division, Naval Facilities Engineering Command; California Regional Water Quality Control Board, San Diego Region 9; EPA Region IX; California Department of Health Services, Toxic Substances Control Division; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities are currently planned for completion in FY 1996, but removal actions will be considered if an imminent threat is identified. Interim remedial measures were taken in 1986 to secure contaminated sites from inadvertent entry.

Castle Air Force Base (14)
Merced, California

Service: Air Force

Size: 2,777 Acres

HRS Score: 37.93

Base Mission: Combat crew training for KC-135 Stratotanker and B-52 Stratotanker (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; RI/FS scheduled for completion December 1994; Placed on NPL 1987; Closure scheduled for September 1995

Contaminants: Spent solvents, fuels, waste oils, pesticides, cyanide, cadmium

Funding to Date: $22.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

PA/SI work was completed in October 1983. The PA/SI consolidated the investigation of 37 initially identified sites into 26 potential contamination source areas. These areas included landfills, discharge areas, chemical disposal pits, fire training areas, fuel spill areas, and PCB spill areas. The Air Force believes that five of the areas (PCB spill sites) require no further investigation because PCB contamination has been removed through appropriate response actions.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986 and grouped the remaining 21 areas into several investigative sites plus a TCE plume site. Results indicate the shallow ground water aquifer beneath and adjacent to the base is contaminated with nitrates, trace amounts of pesticides, and trichloroethylene at levels exceeding state and federal drinking water standards.

Ground water investigations conducted in 1991 focused on the main base sector of Castle. The Air Force signed an ROD with EPA and the State of California in August 1991 for the cleanup of TCE contaminated ground water in the main base area. Investigations under the pre-ROD IAG now include two additional ground water units scheduled for RODs in October 1992 and February 1994. Investigations scheduled for 1993 include a significant effort to characterize the extent of the TCE contamination.

Remedial Design/ Remedial Action (RD/RA)

In 1986, the TCE-contaminated drinking water supply on-base was replaced with a potable well water. In 1987, filter systems were installed in off-base wells to remove TCE contamination. Bottled water was supplied to off-base users before filter installation. In 1988, two deep wells replaced TCE-contaminated water supplies: one for the city of Atwater (2,000 gpm) and one to meet on-base needs (2,100 gpm). These wells are 800 to 900 feet deep. In 1989, a 1,400-gpm granular activated carbon filtration system for TCE-contaminated ground water was constructed. Two RDs were initiated in 1991 for the remediation of ground water and fuel-contaminated soils. A design schedule for the main base ground water remediation scheme is being finalized under the pre-ROD IAG. RAs initiated in 1991 include ground water remediation, capping inactive production wells, and removing abandoned USTs.

Cecil Field Naval Air Station (15)
Jacksonville, Florida

Service: Navy

Size: 20,194 Acres

HRS Score: 31.99

Base Mission: Provide facilities, services, and materials for operation and maintenance of naval weapons and aircraft

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS field work began October 1991

Contaminants: Heavy metals, petroleum/oil/lubricants, paints, solvents, pesticides, fungicides, herbicides, acids, photographic chemicals, paint thinners, blasting grit

Funding to Date: $3.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, was completed in July 1985 for Cecil Field Naval Air Station (NAS) and identified 18 potentially contaminated sites. Ten sites (01-05, 07, 08, 11, 16, and 17) were recommended for Confirmation Studies (CS).

Remedial Investigation/ Feasibility Study (RI/FS)

In the FFA, 12 potential sources of contamination (PSCs) required an RI/FS and 6 PSCs required screening. The 12 sites requiring RI/FS have been divided into operable units based on the types of wastes disposed or typical profile of suspected contaminants. The operable units are further grouped into investigative sets.

Operable Unit 1 includes PSCs 1 and 2, both of which are landfills. Operable Unit 2 includes PSCs 3, 5, and 17, all of which are oil/sludge disposal areas. Operable Unit 3 includes PSCs 7 and 8, both of which are fire training areas. Operable Unit 4 includes PSC 10, a rubble disposal area. Operable Unit 5 includes PSCs 14 and 15, both of which are ordnance disposal areas. Operable Unit 6 consists of PSC 11, a pesticide disposal area. Operable Unit 7 includes PSC 16, an AIMD seepage pit.

Investigative Set 1 consists of Operable Unit 1, 2, and 7 and was selected because historically, landfills and unlined disposal pits have represented a source of significant soil and ground water contamination. Investigative Set 2 consists of Operable Unit 3, Set 3 of Operable Unit 6, Set 4 of Operable Unit 4, and Set 5 of Operable Unit 5. The RI/FS for Set 1 that includes sites PSC 1 and 2, PSC 3, 5, 17, and PSC 16 is currently underway with an expected completion in 1994. The RI/FS for the remaining investigative sets is expected to commence in the 1997-1998 timeframe.

An RCRA Facility Investigation (RFI) was completed in March 1988 and included 14 sites. Corrective action studies were recommended for eight sites and further investigations for four sites. No further action (NFA) was recommended for two sites. These sites are currently being addressed under CERCLA.

A Technical Review Committee (TRC) was formed in 1991. The last meeting was held January 30, 1992.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will commence upon completion of the RI/FS activities and is expected to consist of actions such as capping, ground water pump and treat, excavation and disposal of contaminated soil, and long-term monitoring (LTM).

Concord Naval Weapons Station (16)
Concord, California

Service: Navy

Size: 13,023 Acres

HRS Score: 50.00

Base Mission: Weapons/munitions transhipment and storage facility

IAG Status: None

Action Dates: Proposed for NPL listing February 1992

Contaminants: Metals, VOCs, explosive compounds, pesticides, PCBs

Funding to Date: $19.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS) conducted in 1984 investigated over 32 sites of which 25 sites were identified as significant. For the purpose of further investigations, the activity was subsequently divided into three study areas: Litigation, Tidal, and Inland Area sites. An SI has been completed at the Litigation Area sites and Tidal Area sites with the Inland Area sites SI planned for completion in June 1993. Seven Litigation Area sites and four Tidal Area sites were recommended for further investigation under RI/FS.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS for the seven Litigation Area sites was conducted in 1986/87 to confirm contamination, evaluate the potential for migration, and determine migration pathways. A detailed FS for all sites was completed in 1988 with the signing of the Record of Decision (ROD) in April 1989. Scoping for the Tidal Area sites RI will begin in 1992. A TRC has been formed and includes members from WPNSTA Concord, Western Division, EPA Region IX, California Fish and Game, U.S. Corps of Engineers Waterways Experiment Station, and community representatives from the City of Concord and the town of Clyde.

Remedial Design/ Remedial Action (RD/RA)

As part of the remedial design, the seven Litigation Area sites have been further divided into Remedial Action Sub-Sites (RASSs) 1, 2, 3, and 4. Remedial design of RASS 1, 2, and 3 design is planned for completion in late 1992 with construction to begin in 1993. The RASS sites have been found to be contaminated with heavy metals. The restoration portion of the remedial action includes restoring and revegetating wetland areas at the site inhabited by two Federally-Listed endangered species: Salt Marsh Harvest Mouse and California Clapper Rail.

Cornhusker Army Ammunition Plant (17)
Hall County, Nebraska

Service: Army

Size: 11,936 Acres

HRS Score: 51.13

Base Mission: Currently standby status

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1987

Contaminants: Munitions-related wastes

Funding to Date: $19.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Installation Assessment Study (IAS) identified sources of contamination and ground water contamination by explosive compounds. The plant is currently in standby status and the Army is planning to excess it following the completion of environmental studies required for real estate transactions. Preliminary findings from the excessing study indicated extensive asbestos (mostly non-friable) contained in the loading line buildings and UXO in the burning ground area.

Remedial Investigation/ Feasibility Study (RI/FS)

A contaminant plume affecting more than 500 private wells in Hall County and nearby Grand Island was detected 3 1/2 miles off-post. An RI/FS and a public health evaluation report were submitted to regulators in 1986. RD/RA activities consisting of an alternate water supply and contaminant source remediation were recommended. An IAG, effective September 4, 1990, has been negotiated with EPA and the state.

An RI/FS was initiated in 1991. Field investigations included geophysics of the burning grounds/ landfill and sampling of residential gardens near the installation. Three public meetings were conducted. Additional effort funded during 1991 was completed in 1992 such as monitoring well installation and investigation of the remaining cesspools/sumps, shop area, old laboratory, and ditches/creek area. All data will be used to evaluate the alternatives for soil and ground water remediation. The RI report was submitted to regulatory agencies in January 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1986, the municipal water system was extended to 800 residences in Grand Island. A dewatering system also was completed to control the high water table. In addition, remediation was initiated on contaminated soil at 58 cesspools and leaching pits to destroy all explosive compounds. Incineration operations began in 1987 and ended in 1988. During this period, approximately 40,000 tons of soil were incinerated. The incinerated soil was landfilled onsite in accordance with procedures agreed to by the Army and Nebraska.

As a result of residential sampling and lower health limits for RDX, eight additional residences were provided bottled water as a time-critical removal action. The identification of additional affected residents has prompted the development of an Engineering Evaluation/ Cost Analysis, which was made available for public comment in September 1992. A public meeting was held on August 27, 1992, during which the Army discussed the proposed waterline extension estimated at a cost of $1.5 million for a distance of six miles. The decision memorandum for the waterline extension was approved in June of 1993. The construction is expected to begin in July 1993 and be completed by December 1993.

Dahlgren Naval Surface Warfare Center (18)
Dahlgren, Virginia

Service: Navy

Size: Main Site: 2,677 Acres; Explosive Experimental Area: 1,614 Acres

HRS Score: 50.00

Base Mission: Proofs and Tests Department of the Navy Ordnance

IAG Status: Pre-ROD IAG in negotiation

Action Dates: Installation Assessment completed in 1984; Draft RI Interim Report issued February 1989 and revised July 1991; RI/FS Work Plan issued May 1992; Proposed for NPL Listing.

Contaminants: Cleaning solvents, explosive residues, heavy metals, low-level radioactive materials, mercury, PCBs, pesticides

Funding to Date: $2.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

Established in 1918, the Dahlgren Naval Surface Warfare Center (Dahlgren NSWC), serves as the principal Navy research, development, testing, and evaluation facility for surface ship weaponry, strategic systems, and warfare analysis. Dahlgren NSWC comprises two areas: the Main Site, which occupies 2,700 acres, and the Explosive Experimental Area (EEA), a testing range on an adjacent peninsula encompassing 1,600 acres. Hazardous wastes concerns include explosives, propellants, electroplating and metal treating wastes, degreasers, battery acids, mercury, and low-level radioactive materials.

The Initial Assessment, completed in 1983, examined over 30 sites and recommended several for further evaluation. Confirmation Studies were completed for these sites in 1986, and an RI/FS was recommended for each site examined.

Remedial Investigation/ Feasibility Study (RI/FS)

A work plan has been prepared for examination of nine sites at Dahlgren NSWC. It will be reviewed by members of the Dahlgren Technical Review Committee, including members from EPA and the State of Virginia. Field work is projected to begin in Spring, 1993. The nine sites to be investigated include sites previously examined in the Confirmation Study, plus three additional sites with known contamination that were previously unexamined. The remedial activities will include evaluation of environmental impacts as well as human health. The proximity of the base to the Chesapeake Bay and the Potomac River, coupled with the presence of environmentally sensitive areas (wetlands) and endangered species (bald eagles), make the assessment of environmental impacts a priority.

Remedial Design/ Remedial Action (RD/RA)

A removal action for low-level radioactive material was conducted in Summer 1992. Material removed was contaminated with depleted Uranium (DU), and included soil and a cylindrical steel Barbette weighing approximately 40 tons. The material was transported for disposal at a low-level radioactive disposal facility in Barnwell, South Carolina.

Davisville Naval Construction Battalion Center (19)

North Kingston, Rhode Island

Service: Navy

Size: 1,284 Acres

HRS Score: 34.52

Base Mission: Mobilize reserve naval construction battalions; Supply construction equipment (Installation scheduled for closure)

IAG Status: Initiated and expected to be signed 1992

Action Dates: PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989

Contaminants: PCBs, VOCs, petroleum oil/lubricants, pesticides, lead

Funding to Date: $2.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

A Phase I Initial Assessment Study (IAS), equivalent to a PA, was conducted in September 1984 at Davisville Naval Construction Battalion Center (NCBC) and identified 14 potentially contaminated sites (01-14). Even though the IAS recommended no further action at Sites 01-04, 06, 08, 10, 11, and 13, these sites were brought back into the program in subsequent phases. Three sites (05, 07, and 09) were recommended for Confirmation Studies (CSs). Limited investigations were recommended for Sites 12 and 14.

A CS, equivalent to an SI, was completed in February 1987 and addressed 13 of the 14 sites (02-14) identified in the IAS. Ten sites (02, 03, 06, 07, 09, 10-14) were recommended for further investigation. Even though no further action for Sites 02, 04, and 05 was recommended, the sites were brought back into the program in subsequent phases.

Remedial Investigation/ Feasibility Study (RI/FS)

A Phase I RI/FS began in 1988, addressed 10 sites (2, 3, 5-11, and 13), and was completed in 1992.

Concurrent with the Phase I RI/FS, a Federal Facility Agreement (FFA) was signed. The FFA identified three study areas (SAs) and 12 Areas of Concern (AOCs).

A Phase II RI/FS for 10 of the 12 AOCs identified in the FFA is currently underway with a scheduled completion in 1993. An SA screening evaluation equivalent to a RI/FS is currently underway for Sites 01, 04, and 15 with a scheduled completion in December 1993. An FS is currently underway for Sites 12 and 14 with a scheduled completion in 1993.

A Technical Review Committee (TRC) has been formed and 25 meetings have been held periodically since April 1988.

In August 1980, Davisville NCBC was issued an RCRA Generator Facility Permit that identified 13 Solid Waste Management Units (SWMUs) (nine landfills, two storage areas, one waste oil tank storage area and injection well). The closure plans for these SWMUs are being handled under the RCRA Corrective Action Plan (CAP). These SWMUs include 10 IR sites (02, 03, 06, 07, 08, 09, 10, 11, 13, and 15).

Remedial Design/ Remedial Action (RD/RA)

PCB-contaminated concrete was removed at Sites 12 and 14 in 1991. An FS is currently underway for these sites. RD for a creosote-contaminated area was completed in 1992. Removal is expected in January 1993 with further additional sampling.

The RD/RA work for all the other sites will commence upon completion of the RI/FS activities and is expected to be completed in 1997 for most sites.

Defense Distribution Region Central (Formerly Memphis Defense Depot) (20)
Memphis, Tennessee

Service: Defense Logistics Agency

Size: 642 Acres

HRS Score: 58.06

Base Mission: Store and distribute DoD commodities throughout the south-central United States. This includes clothing, food, medical supplies, electronic equipment, petroleum products, and industrial chemicals.

IAG Status: In negotiation

Action Dates: PA/SI completed 1981; RI/FS initiated 1989; First phase of RI/FS completed 1990; Follow-on RI/FS in progress; Placed on NPL October 1992

Contaminants: Volatile organics, semi-volatile organics, heavy metals, pesticides, PCBs

Funding to Date: $3.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI was completed by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) in 1981. It identified 75 sites with a potential for contamination due to past hazardous materials practices. A majority of these sites were located in an area known as Dunn Field. All 75 sites have been included in the RI/FS investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in April 1989 and the first phase was completed in 1990. It concluded that ground water underlying the western portion of DDRC was contaminated with organic chemicals and that a follow-on RI/FS was necessary. A follow-on RI/FS was initiated in 1991 to address data gaps and to fully delineate the extent of the contaminant plume. The installation was placed on the NPL in October 1992. Negotiations for an IAG have begun.

Remedial Design/ Remedial Action (RD/RA)

In 1991, DDRC initiated an interim remedial action (IRA) to address the ground water contamination in Dunn Field. A pump test was conducted to characterize the ground water and to evaluate pumping and treatment alternatives. The IRA is expected to be operational by September 1993. Two IRA's were completed previously at DDRC, both involving soil removal. The entire installation has been divided into five operable units with the ground water in the Dunn Field area as the top priority.

Defense General Supply Center Richmond (21)

Chesterfield County, Virginia

Service: Defense Logistics Agency

Size: 640 Acres

HRS Score: 33.85

Base Mission: Manage general supplies for Armed Forces

IAG Status: Final IAG signed 1991

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Phenols, solvents, paints/paint residues, corrosives, pesticides/herbicides, refrigerants/antifreeze, photographic chemicals, oils

Funding to Date: $7.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

PA/SI work revealed 33 potential past and/or current disposal sites. Six sites were recommended for further study under an RI/FS. Three of the sites are contiguous, with a high potential for contaminant migration. Both on- and off-base water have been contaminated with phenols, chloroform, methylene chloride, dichlorobenzene, di-, tri- and tetrachloroethylene, and chromium.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986, and to date two draft RIs for the Area 50/Open Storage Area/ National Guard Area and the former fire training pits and one draft RI for former acid neutralization pits have been submitted to EPA and the Virginia Department of Waste Management (VDWM). Comments have been received from EPA and VDWM and additional field work is scheduled for the first quarter of 1993 to fill data gaps identified by the agencies. The three major areas have been subdivided into eight operable units. The operable units consist of five soil units and three ground water and surface water units. Two RODs were issued during 1992 and a draft interim ROD has been prepared for ground water remediation. It is anticipated that the interim ROD will be issued in the second quarter of 1993. The remaining focused feasibility studies (FFS) are scheduled to be completed by August 1993 and RODs are scheduled for signing in February, April and May 1994.

Remedial Design/ Remedial Action (RD/RA)

Four IRA's have been completed at DFSC. They involve removal of DDT from a drum storage area, waste removal from the acid neutralization pits, soil removal from the gas station, and the supply of bottled water to residents. Two RODs were issued during 1992. The first ROD selected institutional controls for the open storage area. The requirements detailed in the ROD have been implemented. The second ROD for the acid neutralization pit soils selected vapor vacuum extraction as the remedial action. A contract has been awarded for design and construction and a pilot plant study will begin in early 1993. An interim remedial action contract for ground water at the area 50/National Guard area OU will be awarded in 1993 after the interim ROD is issued.

Dover Air Force Base (22)
Dover, Delaware

Service: Air Force

Size: 3,740 Acres

HRS Score: 35.89

Base Mission: Air lift services for troops, cargo, and equipment

IAG Status: Pre-ROD IAG signed June 1989

Action Dates: PA/SI completed 1983; RI/FS initiated 1987; RI/FS scheduled completion 1995; Placed on NPL 1989

Contaminants: Solvents, paints, waste fuel and oils, VOCs, and plating wastes

Funding to Date: $13.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

By 1990, the initial PA and various other sources of information identified 23 sites for further remedial investigation. A facility assessment and a negotiation of the Interagency Agreement added 34 sites. Analysis of aerial photos and field checks confirmed contamination at Site #58, an old engine test cell, added in 1992. An area of particular concern for Dover is the upper aquifer, contaminated with low levels of VOCs and heavy metals. No contamination in the deeper aquifer, which provides drinking water to the base and surrounding area, has been detected.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS of 12 sites, completed in 1986, confirmed that the concentration of VOCs and metals in the upper aquifer exceeded Delaware's drinking water standards at several sites. All ground water work at Dover will focus on the upper aquifer. Selection of actual cleanup levels are under negotiation. Contaminant source areas and the extent of contaminant migration are being investigated in an RI/FS that was initiated in August of 1987. The base-wide RI/FS work plan was negotiated in 1992. Field work will begin immediately, pending EPA concurrence. Completion of the RI/FS is projected in 1995. Two Focused Feasibility Studies (FFS) were funded in 1992. One FFS completed soil remediation at a Fire Training Area (FTA). Ground water contamination as a result of the FTA will be addressed in the base-wide RI/FS.

Remedial Design/ Remedial Action (RD/RA)

In 1986, a soil removal and closure action was conducted at Site WP-21 cleaned up the old industrial waste basin, a major source of ground water contamination. Remedial actions were conducted to comply with state regulatory requirements. Solid Waste Disposal Area Site LF-24 was remediated and closed in 1988. An ROD was signed in late 1990 for RA at Site FT-03, a former fire training area. RD is now complete for this site, and remedial action was performed in 1992.

Earle Naval Weapons Station (Site A) (23)
Colts Neck, New Jersey

Service: Navy

Size: 11,134 Acres

HRS Score: 37.21

Base Mission: Ammunition, logistics and administrative support for home-ported ships

IAG Status: Signed February 16, 1991; Effective May 16, 1991

Action Dates: Placed on NPL August 1990; PA/SI completed 1986; RI/FS initiated 1988

Contaminants: Heavy metals, petroleum/oils/lubricants, organic solvents, degreasers, paint residues, corrosive acids

Funding to Date: $2.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, was completed in February 1983 at Earle NWS which identified a total of 29 potentially contaminated sites (01-29). Eleven of these sites were designated for further investigation. In 1991, an aerial photographic interpretation analysis conducted by Environmental Photographic Interpretation Center (EPIC) for the Environmental Protection Agency (EPA) identified 17 additional sites (A-Q). In August 1992, no further action was recommended for 16 of the 17 sites. Site F, the C-50 Round House Area, was recommended for further work.

A Confirmation Study (CS), equivalent to an SI, was completed in December 1986 for 11 sites. The CS recommended additional sampling including monitoring wells, soil borings, and stream sampling for nine sites. No further action was recommended for two sites.

In 1988, the EPA recommended a site inspection for the remaining 18 sites identified in the IAS, but not studied during the CS of 1986. A Phase II SI is currently underway and is expected to be completed by April 1993. Two of the sites are being addressed under RCRA.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS began in 1991 and included all 11 sites studies in the CS of 1986. EPA Region II recommended inclusion of the two "no further action" sites from the CS. The RI/FS is expected to be completed in 1993. An interim draft report submitted in March 1992 indicates remediation for all sites to include capping, removal, and/or long-term monitoring.

An RI/FS for Phase II SI sites is scheduled to start in 1993 and be completed in 1995.

A Technical Review Committee (TRC) was formed in 1990 and meetings are held periodically.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work at current RI sites expected in 1994. Initiation of RD/RA work at current Phase II SI sites expected in 1997.

Edwards Air Force Base (24)
Kern County, California

Service: Air Force

Size: 470 Square Miles

HRS Score: 33.62

Base Mission: Aircraft research and development center

IAG Status: Pre-ROD IAG signed 1990

Action Dates: Initial PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990; Final PA/SI initiated in 1990

Contaminants: Waste oils, solvents, VOCs, petroleum hydrocarbons, rocket fuel, heavy metals

Funding to Date: $39.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

When the pre-ROD IAG was signed in 1990, 16 sites and 24 Potential Release Locations (PRLs) were grouped to form 20 IRP areas based upon geographic proximity and common contamination types (identified or suspected). In addition, the NASA/Ames-Dryden and Jet Propulsion Laboratory (JPL) facilities were also designated IRP areas. After Edwards AFB was listed on the National Priorities List (NPL), the 20 IRP areas were further consolidated into seven operable units (OUs). Under the FFA terms, the Air Force agreed to conduct base-wide Expanded Source Investigations/RCRA Facility Assessment (ESI/RFA) to identify additional sites and PRLs on the base. The ESI/RFA is currently underway. To date, 217 new PRLs have been identified.

The Main/South Base, at the western edge of Rogers Dry Lake, is used primarily for maintaining and refueling aircraft. According to a 1987 IRP report, trichloroethylene, 1,2-dichloroethylene, tetrachloroethylene, and methylene chloride are present in the shallower ground water aquifer underlying the Main/South Base. Edwards AFB's 13,800 employees obtain drinking water from deep aquifer water wells within three miles of the Main/South Base.

An installation-wide ESI/RFA is ongoing and being conducted for operable unit. At the Main Base Flightline (OU1), 25 PRLs were identified; at South Base (OU2), 111 PRLs were identified; at Phillips Laboratory, 102 PRLs were identified.

Remedial Investigation/ Feasibility Study (RI/FS)

A site-specific RI/FS began in August 1986 to determine the type and extent of contamination in local areas and to identify alternatives for remedial action. The sites identified at Edwards AFB include drum disposal areas, waste disposal pits, USTs, a leaking jet fuel pipeline, rocket test stands, oxidation/evaporation ponds, landfills, fire protection training areas, TCE sites, and other spill sites.

Remedial Design/ Remedial Action (RD/RA)

In addition to ongoing studies and analyses, removal actions have been undertaken to reduce or control known contamination. Tank removal actions were accomplished at four sites and a drum removal action was performed at Site 1. A ground water product recovery system was installed in 1987 at Site 16 to pump petroleum-contaminated ground water into an oil/water separator for petroleum product recovery. However, the system was inactivated within a month of startup due to the presence of chlorinated solvents in the discharge water. The system is currently being redesigned and will consist of a series of skimmer pumps to remove floating product from the ground water. In 1991, through a joint effort with EPA, heavy metals and dioxins (Site 34) underwent soil stabilization and polymer sealing.

Eielson Air Force Base (25)
Fairbanks North Star Borough, Alaska

Service: Air Force

Size: 19,790 Acres

HRS Score: 48.14

Base Mission: Tactical air support to Pacific Air Forces

IAG Status: Pre-ROD IAG signed May 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1989

Contaminants: Heavy metals, petroleum/oil/lubricants, VOCs, solvents

Funding to Date: $24.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Eielson AFB contains an active asbestos landfill and closed, unlined landfills that extend into ground water, drum storage areas, and petroleum spill areas.

Lead, chromium, nickel, and zinc have been found in the soil at the drum storage area; trans-1,2-dichloroethylene, lead, and benzene have been found in shallow onsite monitoring wells. An estimated 9,000 people obtain drinking water within three miles of the base.

A number of new sites have entered the PA/SI phase under the IAG in 1991. In 1992, Eielson had 64 source areas, 22 were closed with "No Further Action" documentation.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in August 1986. Ongoing RI/FS work is planned for IRP sites during 1992 to determine the extent of contamination on base and to identify alternatives for remedial action under the IAG. A management plan for sampling was completed for operable units 3, 4, and 5.

Remedial Design/ Remedial Action (RD/RA)

Several monitoring wells have been converted into static recovery wells to remove floating petroleum product from ground water. Small quantities have been recovered. Four USTs were removed in 1990.

During 1991, IRAs included removal and incineration of 10,000 cubic yards of petroleum, oil, and lubricant (POL)-contaminated soils spilled from a UST. In 1992, a system for removing floating product through vacuum extraction was installed. Twenty thousand cubic yards of POL-contaminated soil was land farmed, 2,500 drums of asphalt/cement were removed with road bed improvements; in-situ bioremediation of POL-contaminated soils was conducted, and trenches to remove floating product were installed.

Ellsworth Air Force Base (26)
Rapid City, South Dakota

Service: Air Force

Size: 4,858 Acres

HRS Score: 33.62

Base Mission: Long-range bombardment missiles and air refueling

IAG Status: Pre-ROD IAG signed January 24, 1992

Action Dates: PA/SI completed 1985; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: VOCs, metals, solvents, jet fuel

Funding to Date: $8.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

The base is bordered by open land on the north, west, and south and by commercial residential areas to the east.

The September 1985 PA/SI report identified 18 sites with potential hazardous waste disposal. Five new sites have recently been added to the IRP at Ellsworth with two undergoing PA/SI in 1993. The other three sites were identified in accordance with the pre-ROD IAG signed in 1992. The three sites will be dealt with under a number of smaller sites and will be closed out once all contaminated ground water on base is proposed for No Further Remedial Action Planned (NFRAP).

Remedial Investigation/ Feasibility Study (RI/FS)

The original RI was initiated in 1987 and completed in 1989. This work consisted of drafting decision documents recommending NFRAP for several sites. The base was listed on the NPL in 1990 requiring reevaluation of all sites. Further characterization and delineation of the sites was initiated with award of an RI/FS in late 1992 and will continue into 1996.

Remedial Design/ Remedial Action (RD/RA)

In 1991, the Badlands Bombing Range was fenced and properly labelled with warning signs. In addition, a temporary water supply line was constructed to supply an adjoining land-owner with an alternative drinking water supply. A remedial action initiated in 1991 to remediate a large hanger complex (70 hanger complex) continues and will be completed in August 1993. Seventy-two underground storage tanks (USTs) were removed in 1992 with an additional 400 set for remedial action in 1993 and 1994. A total of 31,000 gallons of petroleum products, 8,000 cubic yards of POL-contaminated soil, and 63,000 gallons of POL-contaminated ground water were removed during the 1992 UST removal project. The contaminated soil was disposed of in an approved off-base land farm and the contaminated ground water was treated in an approved facility.

Elmendorf Air Force Base (27)
Greater Anchorage Borough, Alaska

Service: Air Force

Size: 13,100 Acres

HRS Score: 45.91

Base Mission: Headquarters to Alaskan NORAD Region; F-15 Fighter Wing; NORAD Region Operations Control Center; Rescue Coordination Center; Military Airlift Group flying transports

IAG Status: Signed in 1992

Action Dates: Original PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: VOCs, heavy metals, petroleum/oil/lubricants, solvents, paints

Funding to Date: $23.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

An estimated 121,000 individuals reside within three miles of the installation, but drinking water for these residents is obtained from surface supplies located 12 to 30 miles north of the base. Emergency backup water supply wells for Elmendorf AFB are located within three miles of identified contamination.

The original PA/SI identified a number of areas which had received hazardous wastes, including lead, acid batteries, and waste solvents. Unlined and unbermed landfills are located in sandy and gravelly soils. Shop wastes, including solvents and paint thinners, were disposed of in unlined trenches. At some locations, fuel or solvents spilled onto floor drains that feed into dry wells. The last area investigated was a JP-4 spill site.

Remedial Investigation/ Feasibility Study (RI/FS)

Thirty-three CERCLA source areas have been grouped into seven operable units for studies to be conducted under the Federal Facility Agreement. Field work was done at OUs 1, 2, 4, and 5 in 1992. In 1993, work will be done at OUs 3, 4, and 5, and in 1994, work will begin at OUs 6 and 7. In addition, 27 source areas are being studied under a separate state program.

Remedial Design/ Remedial Action (RD/RA)

Removal actions begun in 1992 include remediation of an abandoned asphalt staging area containing 4,700 drums of asphalt and other debris. This work will be completed in 1993. The asphalt will be used to pave base roads. A second project to be done in 1993 involves the removal of 28 abandoned underground 50,000-gallon JP-4 tanks.

A Record of Decision was signed on September 1, 1992 for an interim remedial action. In 1992, interim remedial action plans were designed to remove spilled fuel from soil at a four million gallon underground storage facility which was taken out of service in 1991.

El Toro Marine Corps Air Station (28)
Irvine, California

Service: Navy

Size: 4,741 Acres

HRS Score: 40.83

Base Mission: Major west coast jet fighter facility

IAG Status: Pre-ROD signed October 1990

Action Dates: PA completed 1987; RI/FS initiated 1989; Placed on NPL February 1990

Contaminants: Waste fuels and oils, organic solvents, degreasers, paints, photographic chemicals, PCBs, corrosives, refrigerants, pesticides, herbicides, VOCs

Funding to Date: $25.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS) completed in May 1986 recommended an SI be performed for nine of 17 sites. In response to regulatory agency comments during September 1986, four sites were added to the SI. An SI work plan was finalized in August 1988, but funding restrictions prevented implementation.

In 1985, the Orange County Water District (OCWD) discovered TCE in two off-station wells. A perimeter investigation was conducted and documented TCE contamination up to 90 ppb in shallow ground water at the station boundary, and limited migration of contamination off station. OCWD completed an off-station ground water investigation in 1989 and documented the existence of a large TCE plume in deep ground water within 3 miles of the station. As an initial remedial measure, existing monitoring wells were retrofitted with pumps and a small activated carbon treatment plant was constructed.

The California Water Quality Control Board requested that approximately 30 additional sites be investigated.

Remedial Investigation/ Feasibility Study (RI/FS)

Development of an RI/FS work plan began in December 1989 and includes 22 sites. Additional RI/FS work plans will be generated in 1993 to incorporate one more site and any additional sites identified for the RI/FS process through an RFA.

An FFA between the Department of the Navy, EPA, and the State of California was signed in October 1990. The TRC members include El Toro MCAS; Southwest Division, Naval Facilities Engineering Command; EPA Region IX; State of California Department of Health Services; California Regional Water Quality Control Board; Orange County; Orange County Water District; Irvine Water District; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

A treatability study was implemented in 1989 to test the feasibility of using activated carbon to remove volatile organic compounds from ground water. Ground water was pumped continuously from three existing monitoring wells and treated using this system. RD/RA activities are expected to be initiated in 1995.

Fairchild Air Force Base (4 Waste Areas) (29)
Spokane County, Washington

Service: Air Force

Size: 4,300 Acres

HRS Score: 31.98

Base Mission: Strategic Air Command operations

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1988; Placed on NPL 1989

Contaminants: Solvents, fuels, oils, electroplating chemicals, cleaning solutions, corrosives, photographic chemicals, paints, thinners, pesticide residues, PCBs, low-level radioactive wastes

Funding to Date: $13.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

A well within base boundaries is a standby water supply for the base's 5,200 employees. Approximately 250 private wells serving about 12,000 people are within three miles of the facility. West Medical Lake, Medical Lake, and Silver Lake, are located within three miles downstream of the base. These lakes support wildlife and are used for recreational activities.

A PA/SI identified several waste disposal sites at Fairchild AFB and one site at the USAF/FAA operations at Mical Peak. Land-use restrictions due to hazardous waste contamination are in effect. Four waste areas covering 85 acres comprise the NPL site and include Building 1034 French drain and dry well system; two landfills, one northeast of Taxiway 8 and one at Craig Road; and the industrial waste lagoons. More than 4,000 drum-equivalents of carbon tetrachloride and other solvents, paint wastes, plating sludges containing cadmium and lead, and related industrial wastes have been disposed of in the four areas.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS for Craig Road Landfill began in 1988 and is expected to be completed in December 1992. An RI/FS for additional sites began in 1991 and is expected to be completed by the end of 1994. These sites are industrial waste lagoons, a fire training area, and two base landfills.

Remedial Design/ Remedial Action (RD/RA)

Four USTs were removed during 1992. A total of 1,600 cubic yards of soils contaminated with fuel and oils were removed through 1992. A pump and treat system was constructed then activated in September 1992 for the containment of TCE-contaminated ground water at the Craig Road Landfill. A sewer connection linking the Fairchild sewage system to the Spokane regional sewage system is scheduled for completion in December 1992.

F.E. Warren Air Force Base (30)
Cheyenne, Wyoming

Service: Air Force

Size: 5,866 Acres

HRS Score: 39.23

Base Mission: Strategic Air Command operations; Strategic Missile Wing; Aerospace Rescue and Recovery Squadron

IAG Status: Signed September 26, 1991

Action Dates: PA/SI completed 1985; RI/FS initiated 1991; Placed on NPL 1990

Contaminants: Lubricating oils, solvents, paints, coal and fly ash, batteries/battery acid

Funding to Date: $13.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

F.E. Warren AFB is surrounded by agricultural, light industry, and residential areas. According to tests conducted by the U.S. Geological Survey beginning in 1987 and finished in 1990, trichloroethylene (TCE), petroleum hydrocarbons, and chloroform above the maximum contaminant level (MCL) are present in ground water monitoring wells on base. TCE has also been detected in Crow and Diamond Creeks on base. Yet, TCE has been detected beyond the base boundary. Twenty contaminated sites have been identified on base. These sites include a total of approximately 400 acres of landfills and over 600 acres of contaminated ground water. Aerial photographs provided by the USEPA and from archive records are being utilized to assist in the delineation and location of the many landfills and old firing ranges which date back to the late 1800s, as well as an abandoned open burning/open detonation area.

Remedial Investigation/ Feasibility Study (RI/FS)

The official RI/FS work plan coordination started in October 1991 with actual field work starting in January 1992. All previous RI/FS data was rejected by EPA as stipulated in the Interagency Agreement between the base and EPA. The RI/FS for Operable Unit 4, the Acid Dry Wells, was completed with the Record of Decision (ROD) and signed by the Air Force Wing Commander and EPA in December 1992. The field work for the remedial investigation for Operable Unit 1 (which consists of one spill site), and Operable Unit 5 (which consists of two fire training areas), has been completed. The reports for both projects are due in August 1993. Scoping for remedial investigation of Operable Unit 3 (which consists of six landfills totaling approximately 400 acres) was completed in late 1992 and the RI/FS work will be awarded in December 1992.

Remedial Design/ Remedial Action (RD/RA)

During 1992, a pump and treat system was installed at Spill Site 7, a source of TCE-contaminated ground water. The system will prevent additional contamination of nearby Diamond Creek. A ROD for Operable Unit 4 was No Further Remedial Action Planned, with continued monitoring to verify that elevated sulfates in the soil do not leach into the ground water. The State of Wyoming and EPA regulators concurred with this remedial alternative.

Fort Devens (31)

Fort Devens, Massachusetts

Service: Army

Size: 9,416 Acres

HRS Score: 42.24

Base Mission: Army Reserve and National Guard personnel training; Army Security Agency Training Center and School support (Scheduled for closure)

IAG Status: Pre-ROD IAG signed June 1991; Effective November 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1989; Placed on NPL 1989

Contaminants: VOCs, petroleum products, battery acid, PCBs, pesticides, herbicides, photographic chemicals, medical wastes

Funding to Date: $10.22 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial assessment recommended that no follow-up studies are required and that the Fort Devens Sanitary Landfill facility Closure Plan should be coordinated with the Commonwealth of Massachusetts. In 1985, Fort Devens applied for a RCRA Part B permit for its hazardous waste storage facility. In the permit process, Fort Devens identified 40 SWMUs. A master environmental plan (MEP) was prepared in 1989. This plan identifies and prioritizes all potential hazardous waste sites and proposes appropriate investigative and corrective action efforts for each site. A detailed SI of the six highest priority sites was initiated in September 1990 and field work was completed in August 1991. A final SI report was issued in September 1992. In the SI report, two sites were identified for removal actions and one site was identified for no further action. A detailed SI for the second highest priority sites was initiated in September 1991. Field work was completed in July 1992. The draft SI report is due in March 1993. A detailed SI for the third highest priority sites was initiated in February 1992. Field work was completed in September 1992. The draft SI report is due in May 1993. A detailed SI for the fourth highest priority sites is scheduled to commence in FY 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

Based upon recommendations in the MEP, it was determined that study of two landfills should commence with an RI instead of an SI, based upon results from previously conducted ground water sampling. RI of two landfills was initiated in September 1990 and the field effort was completed in August 1991. A follow-on RI and FS project was initiated in September 1991. A draft RI report was received in June 1992. Based upon the draft RI report, more field work is required than originally projected in the follow-on RI. A modification to account for the field work is under development. Award and field work start-up are anticipated in 1993. An RI at three sites in the first SI was awarded in July 1992. Field work began in September 1992 and is expected to be completed in March 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. Several removal actions were identified from the first priority SI. One was completed in 1992 with other actions scheduled for early 1993.

Fort Devens–Sudbury Training Annex (32)
Middlesex County, Massachusetts

Service: Army

Size: 2,301 Acres

HRS Score: 35.57

Base Mission: Troop training; Geophysics laboratory services; Fish and wildlife management

IAG Status: Signed June 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS completion expected 1993

Contaminants: VOCs, petroleum products, PCBs, pesticides, herbicides

Funding to Date: $5.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sudbury Annex is managed by Fort Devens Army Installation, located approximately 12 miles to the northwest. Prior to 1982, Sudbury Annex was part of the Natick Research Development and Engineering Center (NRDEC). In 1982, all but a small housing area was excessed to Fort Devens. The PA/SI recommended a follow-on survey of Sudbury Annex to confirm the presence or absence of contamination, and to determine if migration had occurred. In 1992, a Master Environmental Plan (MEP) was developed which identified potentially contaminated sites. PA/SI follow-on work is occurring, and is expected to be completed in 1994.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was initiated in November 1986. Three sites were identified as contributing to the HRS score. The MEP identified additional RI/FS work at five sites. Ongoing RI/FS work is scheduled for completion in 1994. RI/FS follow-on is scheduled to begin in 1993 and be completed in 1995.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of each phase of RI/FS activities. Removal actions were conducted in 1985 for the PCB Spill Area and 1986 for the Burning Ground Area. Further investigation of the PCB Spill Area is being done as a part of the SI and the Burning Ground Area as a part of the RI.

Fort Dix (Landfill Site) (33)
Pemberton Township, New Jersey

Service: Army

Size: 32,600 Acres

HRS Score: 37.40

Base Mission: Army Reserve and National Guard training and combat support

IAG Status: Effective date September 27, 1991

Action Dates: RI/FS initiated 1985; Placed on NPL 1987; PA/SI completed 1989

Contaminants: VOCs, heavy metals, petroleum/oil/lubricants, solvents, photographic chemicals, pesticides, herbicides, medical wastes

Funding to Date: $6.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

During the PA, the Army identified past disposal and/or spill sites potentially contaminated with hazardous waste. The sites were investigated further during the SI. Ground water was found to be contaminated with lead, nickel, cadmium, petroleum hydrocarbons and VOCs (1,1,1-trichloroethane, 1,1,2-TCE, and chloroform). Further remedial investigation was recommended to determine the presence, magnitude, and extent of contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1985 and indicated that a plume of contaminated ground water was emanating from the southwestern portion of the Fort Dix Sanitary Landfill. The contaminants do not appear to be highly concentrated. A geophysical field investigation suggested that the stream and associated surface water bodies act as a hydraulic barrier to suspected contaminant migration. The recommended course of action is to cover the lower 50 acres of the landfill with a low-permeability cap, and to maintain two feet of final cover to the remaining uncapped portion. A long-term (30-year) monitoring program is being implemented. A phased installation-wide RI is currently underway for the remaining sites at Ft. Dix requiring further environmental evaluation. The remedial investigation was initiated in September 1989 for 14 sites, and for the remaining sites in June 1992.

Remedial Design/ Remedial Action (RD/RA)

A ROD became effective for the landfill site on September 24, 1991. The RA consists of regrading a 76-acre area (Phase I) and constructing a low-permeability cap over a 50-acre area (Phase II). Erosion and access control measures will be implemented over the entire site. The Phase I contract was awarded on September 20, 1992. The Phase II design is underway, and the Phase II Contract is currently scheduled for award in August 1993. Also, several USTs have been removed with other removals planned.

Fort Lewis (34)
(Landfill #5 and Logistics Center)
Tacoma and Tillicum, Washington

Service: Army

Size: 86,541 Acres

HRS Score: 33.79 (Landfill)
35.48 (Logistics Center)

Base Mission: I Corps Headquarters - plans and executes Pacific, NATO, or other contingencies; Troop training; Airfield; Medical Center; Logistics for supplies and maintenance.

IAG Status: Pre-ROD IAG signed January 1990

Action Dates: PA completed 1984; Landfill 5 placed on NPL 1987; RI completed October 1991; ROD signed July 1992; Logistics Center placed on NPL 1989; RI/FS completed in May 1990; ROD signed September 1990

Contaminants: Spent solvents, metal plating wastes, pesticides, PCBs, waste oils and fuels, VOCs, asbestos, coal liquefication wastes, polycyclic aromatic hydrocarbons, paint, battery electrolytes, metals, paint strippers and thinners

Funding to Date: $21.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA investigation revealed several potentially contaminated areas. SIs have been completed at Park Marsh Landfill (used previously by the Veterans Administration), Landfill 5, and the Logistics Center. Preliminary results at Park Marsh Landfill detected PCBs and pesticides in the sediments. Landfill 5 and the Logistics Center showed ground water contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

A RI/FS for the Logistics Center was completed in May 1990. The primary ground water contaminants at the Logistics Center are solvents, trichloroethylene (TCE) and cis-1,2-dichloroethylene (DCE). In general, the ground water contamination moves off-post from the Logistics Center toward the town of Tillicum.

An RI was completed at Landfill 5 in 1991. The primary ground water contaminants at Landfill 5 are iron, manganese, benzene, TCE and vinyl chloride. The human health and ecological risk assessments were completed in December 1991. The contaminant levels have been decreasing since the installation of the landfill cap and are predicted to continue to decrease to levels that do not suggest risks to human health and the environment. A "No Further Action" ROD was signed July 24, 1992. Ground water monitoring will continue.

Remedial Design/ Remedial Action (RD/RA)

Based on the ROD, the cleanup plan for the Logistics Center is to pump and treat the ground water. The RD is conducted in two phases. Phase I includes the installation of the well fields. Phase II includes the design and installation of the treatment plant, pumps, piping and other associated equipment. Phase I pilot wells were installed, and pumping tests were completed in the summer of 1991. Installation of the Phase I well field is underway. Phase II design will follow quickly behind with RA scheduled for mid-1993.

The ROD also includes monitoring and soil sampling to ensure that all remaining sources of soil contamination have been identified and characterized.

Fort Ord (35)
Marina, California

Service: Army

Size: 29,598 Acres

HRS Score: 42.24

Base Mission: Home of the 7th Infantry Division (Light) (Base scheduled for closure)

IAG Status: Pre-ROD IAG signed July 1990

Action Dates: PA/SI completed 1990; RI/FS for landfills initiated 1989; Installation-wide RI/FS initiated 1990; RD/RA initiated 1988; Placed on NPL 1990

Contaminants: Petroleum wastes, VOAs

Funding to Date: $21.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

A preliminary hydrogeological investigation (PHI) completed in 1987 identified the sanitary landfills as a possible source of contamination for the City of Marina's backup supply well. This investigation determined also that other installation supply wells were a potential conduit for contamination between aquifers.

PA/SIs completed in 1990 identified contaminants including petroleum wastes and VOAs. These sites include sewage treatment plants, motor pools, AAFES Dry Cleaner and Gas Station, old DRMO and DEH yards, a practice fire drill pit, and EOD range areas. In addition, the location of numerous underground storage tanks have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

The landfills' RI/FS was initiated in 1989. Eleven monitoring wells were installed to supplement the 13 PHI wells, and four sets of samples have been taken. This site is one of two operable units in the IAG.

During the literature search and interview process conducted as part of the base-wide RI/FS, several new sites were identified. Further investigation of these sites was initiated in September 1991. During FY 1992, the first round of field work was completed and 39 characterization reports for the individual sites were initiated.

Remedial Design/ Remedial Action (RD/RA)

A ground water/soil treatment system at the Fritzche Army Air Field has been operating since 1988. One hundred percent of the contaminated soil has been cleaned and removed. Ground water treatment continued during FY 1992. Ground water at this site should be cleaned by approximately 1995. Ten installation wells identified as conduits for contamination were closed in 1990.

Fort Riley
Junction City, Kansas

(36)

Service:	Army
Size:	150 Square Miles
HRS Score:	33.79
Base Mission:	Develop, train and maintain the 1st Infantry Division (Mechanized)
IAG Status:	Docket No. VII-90-F-0015, signed 28 February 1991
Action Dates:	Placed on NPL 1990
Contaminants:	Tetrachloroethane, mercury waste, pesticides wastewaters, acetone, methylene chloride, carbon tetrachloride
Funding to Date:	$7.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA focused on past and current usage of toxic and hazardous materials, and their potential to migrate off the installation. Fort Riley incorporates seven landfills, numerous motor pools, burn and fire fighting pit areas, hospitals, dry cleaning shops, and pesticide storage and mixing areas. The sanitary landfills at Camp Funston and the Main Post (cleaning solvents and pesticide residues) and the former Pesticide Storage Facility are suspected potential sources of contamination. Recently, the Impact Zone and the former Dry Cleaning Facility have been added as potential sources.

The SI at the Dry Cleaning Facility has identified soil and ground water contamination and the field program is continuing with additional monitoring well installation. An early interim remedial action is being planned. Another SI began at the active Impact Zone in November 1991. This investigation is expected to be completed in 1993.

An installation-wide site assessment is reexamining the results of previous investigations to identify additional areas of potential contamination and to establish priorities for the subsequent investigations.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS field program was initiated in June 1991 to determine the nature and extent of contamination at the Southwest Funston Landfill and the Pesticide Storage Facility. Additional sampling is required at both sites. Completion is expected in December 1994.

Remedial Design/ Remedial Action (RD/RA)

Thirty-eight abandoned USTs and ancillary equipment were removed in 1990. Additional UST assessment/remediation projects are currently underway. Polychlorinated biphenyl storage areas were remediated in 1990. Additional remedial actions will begin after completion of the RI/FS. The projected actions include stabilization of the Kansas River bank at the Southwest Funston Landfill, soil removal at the Pesticide Storage Facility and the pump and treatment system at the Dry Cleaning Facility.

Fort Wainwright (37)
Fairbanks North Star Borough, Alaska

Service: Army

Size: 917,993 Acres

HRS Score: 42.4

Base Mission: Headquarters of the 6th Infantry Division (Light)

IAG Status: Pre-ROD IAG Signed November 1991

Action Dates: PA/SI completed 1983; Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Petroleum/oil/lubricants, heavy metals, solvents, pesticides, paints

Funding to Date: $7.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Army assessment completed in 1981 and subsequent facility assessments have identified 41 potential source areas in addition to numerous potential POL sources at Fort Wainwright. Most sites were used for past disposal of waste oils and solvents. These sites include a 40-acre landfill where POL, solvents and paints were disposed; Fire Training pits with POL and solvent contamination; drum burial sites, a chemical agent burial site, leaking underground storage tanks that have affected the water table; and motorpools.

Remedial Investigation/ Feasibility Study (RI/FS)

Environmental investigation activities including field work and compilation of existing data have occurred at various sites. These sites include the North Post Site, the landfill, Nike Sites B and C, and an abandoned tank farm.

A Federal Facility Agreement (FFA) has divided Fort Wainwright into five operable units. Each operable unit will have an RI/FS. Previously performed and planned activities were incorporated into the IAG RI/FS efforts. The RI/FS management plan for the first two operable units, the Fairbanks Fuel Terminal and the landfill/fire burn pits/coal storage yard, have been completed. The field work will commence in the summer of 1993. The draft RODs are expected in 1995.

Preliminary Source Evaluations (PSEs) are currently being conducted. The object of a PSE is to identify potential contaminants and the extent of contamination. All sources that pose a significant risk for contamination will begin a RI/FS in 1994 with a final ROD expected in 1997.

Remedial Design/ Remedial Action (RD/RA)

Past removals of USTs involved leaking USTs and associated contamination. A contract for incineration of petroleum-contaminated soil is expected to be completed in 1993. In 1991, a project to remove and landfarm contaminated soils was awarded. The treatability study is underway. A removal action recovered over 1,500 drums from four areas in September 1992. The drums contained petroleum products, solvents, and paint wastes that pose potential ground water contamination. The removal of suspected chemical agents located on Birch Hill is being planned for the future.

Additional RD/RA work will begin after completion of RI/FS activities.

Fridley Naval Industrial Reserve Ordnance Plant (38)

Fridley, Minnesota

Service: Navy

Size: 83 Acres

HRS Score: 30.83

Base Mission: Design and manufacture advanced weapons systems

IAG Status: Signed March 1991

Action Dates: PA/SI completed 1988; RI/FS initiated 1988; Placed on NPL November 1989; Record of Decision for ground water remediation September 1990

Contaminants: Heavy metals, VOCs, petroleum/oil/lubricants

Funding to Date: $7.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

Investigations (sampling and analyses of ground water) between the years 1983 and 1988 identified trichloroethylene (TCE) in the ground water at Fridley Naval Industrial Reserve Ordnance Plant (NIROP). A PA was completed on June 30, 1983 for four sites. (A SI was not performed for these sites.) Site 04, the Foundry Core Butt Disposal, was closed out as a result of the PA in 1983. Sites 01-03 are being handled as Operable Unit 01 (OU-01) and were recommended to continue in the Installation Restoration (IR) program. Another site, Area C Solid Waste Management Unit (SWMU), is physically located at Fridley, but is the responsibility of the present contractor who is tracking and funding the site.

On November 21, 1987, the installation was listed on the National Priorities List (NPL) with a Hazard Ranking System (HRS) Score of 30.83.

Remedial Investigation/ Feasibility Study (RI/FS)

OP-01 completed an RI in July 1988 for ground water remediation only. An FS was completed in August 1988 and a Record of Decision (ROD) signed on September 28, 1990.

A Federal Facility Agreement (FFA) between the Department of the Navy, Environmental Protection Agency (EPA), and the State of Minnesota was signed on March 23, 1991.

An RI addressing soils began in May 1992 at OU-01 and is expected to be complete in September 1993. The FS is anticipated to begin in October 1993 with a completion date of June 1994. The ROD for the soil remediation is expected to be signed in February 1995.

Remedial Design/ Remedial Action (RD/RA)

A Removal Action that was initiated in 1983 and completed in 1984 allowed for the removal and disposal of 43 drums and 1,200 cubic yards of contaminated soil. Another Removal Action for the disposal of 32 drums and 500 cubic yards of contaminated soil was performed in 1992.

The RD for the ground water phase was completed in September 1990. The RA began in September 1990 with a pump and treat system that will last beyond FY 1998. The RD for the soils will start in March 1995 and be completed in September 1995. The RA is expected to begin by November 1996.

George Air Force Base (39)
Victorville, California

Service: Air Force

Size: 5,347 Acres

HRS Score: 33.62

Base Mission: Tactical fighter operations; Train aircraft and maintenance personnel; Maintain aircraft and ground support (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1986; RI/FS initiated 1986; Scheduled for completion June 1993; Closure scheduled for December 15, 1992; Placed on NPL 1990

Contaminants: Petroleum/oil/lubricants, VOCs, heavy metals

Funding to Date: $41.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

During a PA/SI, the Air Force identified several potentially contaminated areas. These sites include the Waste POL Leach Field, the Fire Training Area, the Hazardous Waste Storage Yard, the STP Percolation Ponds, the Abandoned Waste Fuel Dry Well, the Southeast Disposal Area, the Northeast Disposal Area, and the Industrial/Storm Drain. These sites were investigated further in 1986 and 1988 under the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1986 and 1988. Results indicate POL, VOC, and heavy metal contamination of soils in several areas, and TCE and radionuclide contamination of ground water. The radioactive materials are believed to be naturally occurring within the region. Ground water monitoring is being conducted to confirm previous findings.

The sites at George AFB have been combined into three operable units (OU). RIs and FSs for these OUs are continuing and are planned for completion in mid 1993.

Remedial Design/ Remedial Action (RD/RA)

The treatment system for the Northeast Disposal Area was constructed in 1990. The RA consists of extracting the TCE-contaminated ground water and treating it by using air stripping. The industrial storm drain was cleaned and removed in 1991. Removal of JP-4 pure product from ground water at several locations near the flightline commenced March 1992. Removal of underground storage tanks and surrounding contaminated soils is ongoing.

Griffiss Air Force Base
Rome, New York

(40)

Service: Air Force

Size: 5,836 Acres

HRS Score: 34.20

Base Mission: Air refueling operations; Long-range bombardment

IAG Status: Pre-ROD IAG signed June 14, 1990

Action Dates: PA/SI completed 1981; Placed on NPL 1987; RI/FS scheduled for initiation 1991

Contaminants: VOCs, heavy metals, greases, degreasers/caustic cleaners, dyes, penetrants, solvents

Funding to Date: $24.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Mohawk River borders the base on the west and south. A PA/SI identified sites containing hazardous materials from past disposal activities. Studies detected surface contamination at the Tank Farm and potential ground water contamination from dry wells and a lindane spill.

Remedial Investigation/ Feasibility Study (RI/FS)

Confirmation studies began in October 1987. Initial studies detected contaminated ground water in a limited area near Landfill 1; PCB-contaminated soils at Building 112; fuel product contamination of soils and ground water at the Tank Farm; heavy metal contamination of soils in the Battery Disposal Pits; and VOC contamination of ground water at Landfill 7.

The RI/FS work plan was submitted to EPA and the State of New York in 1991. The RI/FS began in 1991 and is scheduled for completion in late 1994. The RI/FS was originally slated for completion in late 1992, but a year-long dispute resolution and the discovery of new sites, pushed the completion date back. All off-base areas containing wells that have been contaminated with glycols are proposed for inclusion in the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

Several interim remedial actions are currently underway. In 1985-86, contaminated soil was removed from several IRP sites. Several USTs were removed from the Tank Farm and contaminated soil was removed from the Battery Acid Disposal Pits in 1987. Additional USTs were removed in 1988. RAs in 1989 included modifications to a landfill cap and the removal of several USTs. Contaminated soil from an area adjacent to an aircraft nosedock was removed in late 1990.

Construction on an off-base water distribution facility to replace the impacted private domestic wells was completed in 1991. Remedial actions completed in 1992 include the removal of UST and contaminated soil associated with Buildings 110, 101, and 112. The remedial design for landfills #2 and #9 have been rescheduled for 1993 to explore other remedial alternatives.

Hill Air Force Base (41)
Ogden, Utah

Service: Air Force

Size: 6,666 Acres

HRS Score: 49.94

Base Mission: Logistics for weapons systems

IAG Status: Pre-ROD IAG signed April 1991

Action Dates: PA/SI ongoing; RI/FS initiated 1985; Placed on NPL 1987

Contaminants: VOCs, sulfuric and chromic acids, solvents, petroleum wastes

Funding to Date: $32.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Preliminary Assessments and Site Investigations have been completed for all 63 of Hill's confirmed sites. However, there are presently 18 areas of concern (AOCs) which are being investigated under PA and SI.

The initial PA for Hill AFB was completed in 1982. Subsequent SIs were conducted in 1984 and 1986-87. The UTTR and Little Mountain sites were not placed on the NPL.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in March 1985. The seven operable units at Hill AFB are in various stages of RI/FS study. All operable units have contamination of the shallow aquifer. To date, the deeper drinking water aquifer has not been affected.

An interim remedial action ROD for source recovery of the DNAPL has been signed for OU 2.

The RI/FS for Operable Unit 5 began in the summer of 1989.

Operable Unit 6 has completed its site evaluation. The report shows no contamination in the on-base soil gas. However, TCE contamination was observed in off-base field drains.

Operable Unit 7 has begun a RCRA monitoring program on the Building 220 site. The site evaluation for the Building 225 chromium site is currently under regulatory review.

The RI is complete for the Little Mountain sludge beds. A remedial design and remedial action were completed in FY 1992. The contaminated soils were treated on site.

Two RODs will be signed in 1993, one ROD in 1994, and two RODs in 1995.

Remedial Design/ Remedial Action (RD/RA)

On-base, Hill AFB has initiated several remedial actions. To date, 6,046 gallons of solvents, 10,000 gallons of fuel, and 1,700 cubic yards of contaminated soil have been removed from the environment at Hill AFB. Hill AFB capped 70 acres of landfill, extracted and treated contaminated ground water from seven wells and two infiltration galleries, and installed a mile-long slurry wall. More than 50 million gallons of contaminated ground water have been treated. As a result of these actions, VOC concentrations in off-base seeps decreased 99 percent since 1984.

Two property owners have been connected to municipal wells and supplied with irrigation water. The ROD for interim remedial action at Chemical Pit #3 was approved at the end of 1991. The IRA, which consists of a pump and treat system, is currently being constructed.

In 1989-90, at a JP-4 spill site, soil venting removed 190,000 pounds of fuel. Two old PCB spill sites were excavated and disposed of in 1990.

In 1991, PCBs that were discovered in the asphalt were treated with a chemical known as Capsur.

In addition, Hill has tested every known tank for leaks. Ninety-six tanks have been removed and the remaining 165 are under investigation.

Homestead Air Force Base (42)
Homestead, Florida

Service: Air Force

Size: 2,916 Acres

HRS Score: 42.40

Base Mission: Air Combat Command; F-16 Fighter Wing; ATC sea-survival school; Tactical Control Squadron; Naval Security Group Activity; Aerospace Rescue and Recovery Squadron (AFRES) and Fighter Interceptor Group operations

IAG Status: Pre-ROD IAG signed February 1991

Action Dates: PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: Metal plating wastes, VOCs, cyanide

Funding to Date: $7.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Homestead AFB is mostly agricultural. Wastes have been disposed of onsite since the facility opened in 1942. Electroplating operations were conducted onsite, and plating wastes containing heavy metals and cyanides were allegedly disposed of directly on the ground.

The PA/SI identified three major areas of concern: the Fire Protection Training Area, the Residual Pesticide Disposal Area, and the Electroplating Disposal Area.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in August 1987 at the Fire Protection Training Area (FPTA), Electroplating Waste Disposal Area (EWDA), and Residual Pesticide Disposal Area. Analytical results from the RI showed ground water contaminated with VOCs above MCLs. Benzene was detected in the ground water at concentrations which exceed the Florida Primary Drinking Water Standard. Ethyl ether was detected in high concentrations in the shallow and intermediate ground water. Its presence is attributed to the disposal of approximately 5,500 gallons of ethyl ether in January 1984 by the Federal Drug Enforcement Agency and Dade County.

At the Electroplating Waste Disposal Area, cyanide was detected above MCLs in one monitoring well.

From 1977 to 1982, pesticides were sprayed or dumped onto the Residual Pesticide Disposal Area, and chlorine bleach and ammonia were applied to accelerate the decomposition of the pesticide compounds. Analytical results showed low levels of organochlorine insecticides in surface soil samples.

A monitoring plan was received from the Florida Department of Environmental Regulation (FDER) for the BX Service Station. Additional RI/FS field work and data collection was requested by FDER for all sites following their review of draft RI/FS reports for EWDA and FPTA. Additional RI/FS investigations, including supplemental RI and SI work to determine the extent of contamination, will begin in 1993.

Remedial Design/ Remedial Action (RD/RA)

An IRA was conducted in 1987 to remove approximately 25 USTs from various IRP sites. Construction of a remedial system for Pumphouse 9 was completed in 1991. The system, which is for the removal of free product contamination, is currently undergoing design modifications following a year of operations.

Iowa Army Ammunition Plant (43)
Middletown, Iowa

Service: Army

Size: 19,127 Acres

HRS Score: 29.73

Base Mission: Load-assemble-pack a variety of conventional munitions and fusing systems

IAG Status: Pre-ROD IAG signed 1990 with EPA

Action Dates: First PA/SI completed 1980; Second PA/SI initiated 1991; RI/FS initiated 1981; Placed on NPL 1990

Contaminants: VOCs, heavy metals, waste solvents, explosives containing sludges

Funding to Date: $11.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

Iowa Army Ammunition Plant (IAAP) is a government-owned/ contractor-operated (GOCO) facility. Although a PA/SI was completed in 1980, an updated PA/SI was initiated in January 1991 to further assess the impact on the environment of the use, storage, treatment, and disposal of toxic and hazardous materials and to define conditions that may adversely affect health and welfare or result in environmental degradation. Forty sites/areas of concern were identified, of which 33 require further investigation or action.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in February 1981, and a contamination survey was completed in October 1982. Explosives contamination was found in surface and ground waters within the Brush Creek drainage system. The former Line 1 Impoundment and the Pinkwater Lagoon adjacent to Line 800 were identified as sources of contamination. It was determined that RDX was migrating off-site through Brush and Spring Creeks. A follow-on environmental survey completed in August 1984 assessed further the contamination in the Line 1 and Line 800 areas. The endangerment assessment and FS for Lines 1 and 800 were completed in July and August 1989, respectively. A Federal Facilities Compliance Agreement (FFA) between the Army and EPA was signed in April 1988. The RI/FS began in July 1992 to investigate 30 sites, and will be completed in October 1993.

Remedial Design/ Remedial Action (RD/RA)

Closure of the inert landfill Trench 5 was completed in November 1989. Closure of the Line 6 gravel filter bed and the drainage ditch was completed in August 1990. Removal, backfill, and reseeding of the abandoned coal storage yard is planned for 1993.

Jacksonville Naval Air Station (44)
Jacksonville, Florida

Service: Navy

Size: 3,820 Acres

HRS Score: 32.08

Base Mission: This master anti-submarine warfare base maintains and operates facilities and provides services and materials to support operations of aviation activities and aircraft overhaul. The complex houses a naval aviation depot, a naval supply center, and several air squadrons.

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS initiated 1989; SI scheduled completion for 1991

Contaminants: Acids and caustics, cyanide, heavy metals, low-level radioactive radium paint wastes, oil, paint, PCBs, pesticides, phenols, radioisotopes, waste solvents

Funding to Date: $9.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, was completed in March 1983 for 43 sites at Jacksonville Naval Air Station (NAS). Five sites are located on non-contiguous Naval Fuel Depot Jacksonville, which reduces to 38 the number of Jacksonville NAS sites. Eleven sites were recommended for further study. Prior to the Confirmation Study (CS), equivalent to an SI, sites were added and combined to total 40 potentially contaminated sites.

Jacksonville NAS was placed on the National Priorities List (NPL) December 12, 1989 with a score of 31.02 and a Federal Facility Agreement (FFA) was signed on October 23, 1990. As of October 1, 1992, there are 45 IR sites. Reviews of the studies to date and assessment of each site have resulted in Sites 2, 3, 4, 11, 12, 13, 14, 15, 26, 27, 41, 42, and 43 experiencing the RI/FS process. Sites 07, 19, and 33 are being addressed under Florida Administrative Code Section 17-770, the petroleum statutes for the State of Florida. Sites 01, 05, 06, 08-10, 16-18, 20-25, 28-32, 34-40, 44, and 45 are undergoing additional investigation under a current SI.

Remedial Investigation/ Feasibility Study (RI/FS)

Operable Unit 1 consists of Sites 26 and 27. The RI/FS work plan was completed October 1991 and implemented in December 1991. The OU Record of Decision (ROD) is planned for FY 1998. Interim ROD is anticipated for floating free product in FY 1993.

Operable Unit 2 consists of Sites 2, 3, 4, 41, 42, and 43. The RI/FS work plan is scheduled to be finalized January 1993. Operable Unit ROD is scheduled for FY 1998. Interim RODs and removal actions are planned for Sites 2, 41, and 43 for FY 1993.

Operable Unit 3 consists of Sites 11, 12, 13, 14, and 15. The RI/FS work plan is planned for March 1994. Work plan implementation is anticipated in FY 1994 with OU ROD programmed in FY 1999.

Note: RI/FS and RD/RA projected completion dates are based on funding being available during indicated fiscal years.

Remedial Design/ Remedial Action (RD/RA)

OU1 RD is scheduled for FY 1998 with remedial action being started in FY 1999. Removal of floating free product is planned for August 1993.

OU2 RD is scheduled for starting RD in FY 1997 and commencing RA activities in FY 1998. A removal action for Sites 2, 41, and 43 is planned in August 1993.

OU3 RD is scheduled for FY 2000 with the RA in FY 2001.

Joliet Army Ammunition Plant (45)
(LAP Area and Manufacturing Area)
Joliet, Illinois

Service: Army

Size: 36 Square Miles

HRS Score: 35.23 (LAP area)
32.08 (manufacturing area)

Base Mission: Manufacture and load-assemble-pack (LAP) explosives and explosive-filled munitions

IAG Status: Pre-ROD IAG signed June 1989 with EPA and State of Illinois

Action Dates: PA/SI completed 1978; RI/FS initiated 1981; Manufacturing Area placed on NPL 1987; LAP Area placed on NPL 1989

Contaminants: Munitions-related wastes, VOCs, heavy metals

Funding to Date: $12.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Joliet Army Ammunition Plant (JAAP), consisting of a Manufacturing Area and a Load-Assemble-Pack (LAP) Area, is a government-owned/contractor-operated (GOCO) facility. Since 1977, the facility has been maintained in standby condition.

The PA/SI identified the potential presence of TNT, DNT, RDX, and tetryl, as well as nitric and sulfuric acids, toluene, and various heavy metals. Past practices may have contaminated ground and surface waters, sediment, and soil.

Remedial Investigation/ Feasibility Study (RI/FS)

Fifty-three sites on JAAP were targeted for RI/FS investigation in 1991, including 18 sites in the MFG Area and 35 sites in the LAP Area. Various contaminants, primarily explosives, have been identified in soil, sediment, surface and ground water. Field work in 1991 identified contamination in 14 of 18 sites in the MFG Area and 25 of 35 sites in the LAP Area. An FS was initiated in October 1992 for MFG Area, and a Phase II RI is under development for 14 sites in the LAP Area. A 1991 residential well survey around JAAP identified no occurrences of off-site ground water contamination to offpost wells. A 1993 study of deer herd tissues taken during the shotgun season on JAAP will be used to determine if contaminants are being stored in deer tissue. Currently, the RI Report for both the MFG and LAP Areas, and the Baseline Risk Assessment for the MFG Area are undergoing EPA Region V review. The Ecological Risk Assessment Report is being written by the Army Environmental Hygiene Agency (AEHA) and is due in late February 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1985, more than seven million gallons of explosives-contaminated red water were removed from the Red Water Lagoon and transported offsite for disposal. Explosives-contaminated sludge and the lagoon liner also were removed, and the area was capped with clay.

Two surface impoundments (north and south ashpiles) in the MFG Area from past incineration of explosives will be recapped in 1993.

RD/RA work plans will be initiated for the LAP and MFG Areas following the completion of the FS for each area. The MFG area FS is scheduled for completion in May 1993 and 10 areas within the LAP Area in late 1994.

Keyport Naval Undersea Warfare Center
Keyport, Washington

(46)

Service: Navy

Size: 200 Acres

HRS Score: 32.61

Base Mission: Originally, testing of torpedos; expanded to include proving, overhaul, and issue of torpedos

IAG Status: Pre-ROD IAG signed July 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1985; Placed on NPL October 1989

Contaminants: Heavy metals (mercury, lead, zinc, chromium, nickel, silver, cadmium), petroleum hydrocarbons, chlorinated solvents, otto fuel, pesticides, herbicides

Funding to Date: $11.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified nine sites as potential contaminant migration sources. Six sites were identified for further study. The study found significant concentrations of metals, petroleum hydrocarbons, and undifferentiated halogenated organics in seeps and sediment of the marsh adjacent to the Keyport Landfill. A Landfill Gas Investigation, completed in May 1988, identified concentrations of methane in subsurface soil in the vicinity of the landfill.

The SI also found low concentrations of metals in soil and sediment of the stream and lagoon adjacent to the Keyport Van Meter Road Spill. At Liberty Bay, elevated levels of mercury, lead, and zinc were found in sediment, and elevated levels of chromium, nickel, and zinc were found in shellfish tissue. Chromium levels exceeded food criteria for shellfish consumption.

The SI also recommended performing an Inerim Remedial Action for off-shore sediments that involved closure of beaches at the Base to shellfish harvesting and collection of additional shellfish tissue samples. The beaches at Keyport Naval Undersea Warfare Center have been closed to shellfish harvesting.

An SI is currently underway for two additional sites and is expected to be completed in early 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS is currently underway for six sites, and is expected to be completed in 1993. Marine sampling of water, sediment, and shellfish tissue, as well as land-based sampling of soil, soil gas, air, and ground water has been included in the study.

Remedial Design/ Remedial Action (RD/RA)

A removal action was conducted at the Keyport Building 72 Chromate Spill Site in June 1992. An underground trench and several sumps were excavated, and chromium-contaminated soil was removed and replaced with clean fill.

Initiation of RD/RA at other sites is expected to begin in late 1993.

Lake City Army Ammunition Plant (47)
(Northwest Lagoon)
Independence, Missouri

Service: Army

Size: 3,955 Acres

HRS Score: 33.62

Base Mission: Manufacture, store, and test small arms ammunition

IAG Status: Pre-ROD IAG signed September 1989

Action Dates: PA/SI completed 1979; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Oils/greases, heavy metals, solvents, explosives

Funding to Date: $30.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lake City Army Ammunition Plant (LCAAP) has manufactured, stored, and tested small arms ammunition continuously since 1941, except for a 5-year period following World War II. Virtually all waste treatment and disposal has been onsite. LCAAP has relied heavily on lagoons, landfills, and burn pits for waste disposal. Industrial operations have generated large quantities of potentially hazardous waste, including oils/greases, solvents, explosives, and metals.

The Installation Assessment identified numerous waste areas on base, but because of a clay layer in the soil, no testing was recommended. However, a PA/SI identified 73 waste sites containing more than 100 individual units. These units were later consolidated into 35 sites. Field testing was conducted at seven representative areas and ground water contamination (volatile organics, explosives, and heavy metals) was detected at all seven areas. An RI/FS was recommended for the entire site.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987, and the study confirmed contamination of the ground water above federal and state criteria beneath the entire site. Approximately eight water wells of private residents immediately north of LCAAP have been monitored quarterly since 1987. Low level explosive and volatile organic contamination have been sporadically detected, but levels remain below applicable criteria. Ten additional off-post wells are scheduled to be installed. A Phase 2 RI/FS was initiated in 1989 to determine the extent of ground water contamination and to investigate source locations. A final RI effort is underway to fill in data gaps from the previous efforts. The RI is scheduled to be completed in FY 1994.

Remedial Design/ Remedial Action (RD/RA)

Numerous explosive waste lagoons at LCAAP have been closed since 1986. Air strippers for the drinking water supply wells at the plant were installed in 1990. Permits for air strippers at other production wells were received and all production wells are now operating.

Lakehurst Naval Air Warfare Center (48)
Lakehurst, New Jersey

Service: Navy

Size: 7,382 Acres

HRS Score: 50.53

Base Mission: Develop and test weapons systems and their components

IAG Status: Pre-ROD IAG signed 1989 with EPA

Action Dates: PA/SI completed 1983; Placed on NPL 1987; RI/FS initiated 1987; RI Phase II completed 1990

Contaminants: Waste oils and fuels, solvents, degreasers, paints, paint residues, photographic chemicals, acids, PCBs, pesticides, herbicides, refrigerants

Funding to Date: $15.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Initial Assessment Study (IAS), equivalent to a PA, and a Confirmation Study (CS), equivalent to an SI, were completed in March 1983 identifying 44 potentially contaminated sites at Lakehurst Naval Air Warfare Center (NAWC). Sites 41 and 43 were closed out as not being contaminated and the remaining 43 sites were recommended for further study. (An additional site, Site 45 BOMARC, was added to the list of potentially contaminated sites for further study. BOMARC was only included in the SI and did not have a PA performed.) The SI was completed in April 1987 and all sites were recommended for further study in the Remedial Investigation/Feasibility Study.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was completed for 13 sites and 3 RODs were signed in September 1991. All three of these RODs are for a determination of no further action (NFA) at any of these sites.

The installation was placed on the National Priorities List (NPL) in 1987 with a Hazard Ranking System (HRS) Score of 50.53. A Federal Facility Agreement (FFA) was signed by the Department of the Navy on May 25, 1989 and by the Environmental Protection Agency (EPA) on October 4, 1989.

Phase I and II RIs have been completed for Sites 01-04, 06-14, 16, 17, 20, 22, 24, 25, 28, 29, 31-33, 35-39, and 42 on April 1987 and July 1990 respectively. The Phase III RI is currently underway for these sites with a Draft Final submitted in October 1992. These sites are all expected to go to Remedial Design starting in FY 1994.

Remedial Design/ Remedial Action (RD/RA)

RD/RA start and finish dates will be scheduled according to priority, the media being remediated, and the method of remediation.

Two Interim Remedial Actions (IRAs) have been completed at Lakehurst. One for Sites 10, 16, and 17 was completed on June 5, 1991 and a second for Site 32 was completed on May 30, 1992. A future IRA is scheduled for FY 1993 for Sites 28, 35, 12, 14, 18, 26, 29, 33, 37, 42, 44, 09, 13, 15, 36, and 39. All of the IRAs completed or scheduled for the future involve pump and treat ground water remediation.

RA is scheduled in five stages, the first to start in April 1994. Subsequent actions will begin in FY 1995, FY 1996, FY 1997, and FY 1998. Completion dates are anticipated to be FY 1998 or after.

Letterkenny Army Depot (49)
(PDO Area and Southeast Area)
Franklin County and Chambersburg, Pennsylvania

Service: Army

Size: 19,511 Acres

HRS Score: 37.51 (PDO Area)
34.21 (SE Area)

Base Mission: Maintain and test tracked vehicles and missiles; Issue chemicals and petroleum; Store, demilitarize, and modify ammunition

IAG Status: Pre-ROD IAG signed February 1989 with EPA and State of Pennsylvania

Action Dates: RI/FS initiated 1982; PA/SI completed 1983; Southeast area placed on NPL 1987; Property Disposal Office Area placed on NPL 1989

Contaminants: Petroleum/oil/lubricants, pesticides, solvents, cleaning agents, metal, lead, mercury, plating wastes, phenolics, VOCs, painting residues and thinners, explosives

Funding to Date: $20.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial PA/SI included identification of 14 potentially contaminated sites, all targeted for an RI/FS. An additional 46 sites were identified during the RI phase. Significant contamination of ground water by aromatic hydrocarbons and volatile chlorinated hydrocarbons has been found. Elevated levels of contaminants have migrated off-base. An SI was updated for 18 SWMUs during May-July 1990. The SI report was submitted to the EPA and Pennsylvania in March 1991 and is now final. The SI report recommends further investigation of eight sites. This work (SI follow-on) will be underway by May 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in June 1982, and confirmed contamination of 11 areas. Organic contaminants have migrated beyond depot boundaries in the southeastern area. Additional field work is currently being conducted to support the RI/FS effort. The Property Disposal Office (PDO) RI is in the draft stage and is due to the regulators early 1993. Two additional OUs have been added to the PDO. The southeastern RI was submitted to regulators in November 1992.

Remedial Design/ Remedial Action (RD/RA)

An alternate water system was provided in September 1987. An ISV system was used to determine the ability of the vacuum system to treat soils. This testing indicated limited potential for the ISV unit because of the site characteristics. Low-temperature thermal stripping is to be used for soil remediation. Ground water treatment also will be considered at both NPL sites. Ground water treatment at the former IWTP lagoon area was initiated in June 1989. The interim ground water treatment system was expanded to nine extraction wells in December 1990. Closure was completed in November 1992. Approximately 26,800 cubic yards of soil have been treated (low temperature thermal treatment) and removed. A design study will commence in 1993 to address ground water contamination at Rowe Run Springs. The K-Area removal area has been delineated (19,729 tons). RA is planned for July 1993.

Lone Star Army Ammunition Plant (50)
Texarkana, Texas

Service: Army

Size: 15,546 Acres

HRS Score: 31.85

Base Mission: Load-Assemble-Pack, renovate, and demilitarize ammunition and explosives

IAG Status: Pre-ROD IAG signed June 1990

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, petroleum/oil/lubricants

Funding to Date: $6.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lone Star AAP is a GOCO plant that employs approximately 2,000 people. Past disposal practices included burial of drummed and undrummed wastes in landfills, wells, and cisterns; disposal of explosives in a demolition area, black powder dump, and burning ground; and the discharge of wastes to chemical sludge ponds, settling pits, unlined pinkwater lagoons, and neutralization ponds. Potential ground water contaminant migration off post could affect approximately 200 private wells located within two miles of the post and used for potable water purposes.

The PA/SI found nitrobodies and heavy metals in manufacturing, disposal, demolition, and lagoon areas and determined the contaminants could migrate beyond plant boundaries through surface and subsurface waters. A follow-on indepth investigation was recommended to determine if contaminants are migrating off-post.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987. A contamination survey investigated 17 areas of potential contamination. Heavy metals and/or explosives were discovered in the ground and surface water and surface soils at several sites. Small concentrations of sulfates, chlorides and dieldrin were also detected in the ground water. Additional investigations conducted in 1990 and 1991 have discovered the potential for off-site contaminant migration. New studies to include off site investigation were ongoing in 1992 as part of RCRA Facility Investigation (RFI). The Corrective Measures Study (CMS) is scheduled to begin in early 1993.

The pre-ROD IAG was signed in September 1990. Only the NPL site, the Old Demolition Area (ODA), is covered by this agreement. The remaining sites have been listed as SWMUs. There are 145 SWMUs under investigation.

The Federal and state regulators have completed reviewing the RI/FS for the ODA. Additional investigation was recommended. The Phase III RI was submitted to regulators for comment in June of 1992. The Army has received EPA comments and plans to publish the draft final RI in February 1993.

Remedial Design/ Remedial Action (RD/RA)

Both Chromic Acid (North G Area) and O-Line (South O Area) ponds have been closed and are being monitored. Leaking underground fuel tanks at the installation gas station have been drained and fueling operations have been moved to another location. Tank removal and soil remediation were completed in FY 1992. The Army has received permission for several SWMUs to bypass the CMS phase and go directly into the RA phase. Four SWMUs are going directly to the RD/RA phase. Two sites are in CMS.

Longhorn Army Ammunition Plant (51)
Karnack, Texas

Service: Army

Size: 8,493 Acres

HRS Score: 39.83

Base Mission: Load-Assemble-Pack pyrotechnic and illuminating/signal munitions and solid propellant rocket motors

IAG Status: Signed by the Army, EPA, and Texas Water Commission in October 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiation 1991; RFA performed 1988; RCRA permit final 1992

Contaminants: Heavy metals, VOCs, munitions-related wastes, petroleum/oil/lubricants

Funding to Date: $1.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Longhorn AAP primarily produced 246-TNT flake and acid for munition production during World War II. Flake production ceased and the current mission commenced in 1945.

A PA/SI recommended conducting an environmental survey. A contamination survey and follow-up studies identified contamination of onsite surface and ground water and soils emanating from the Active Burning Ground/Rocket Motor Washout Pond Area, the TNT Production Area, the Flashing Area, the Landfill (old), TNT burial sites, and old Burning Grounds.

An RFA in 1988 identified many of the same sites as SWMUs with a potential for release.

Remedial Investigation/ Feasibility Study (RI/FS)

A preliminary survey confirmed two sources for VOC ground water contamination beneath the Active Burning Ground and identified a third potential source that will require further investigation. The contaminant plume has neither moved significantly in the last 30 years, nor migrated off-post.

The IAG lists 13 areas that will be included in the RI/FS. Investigations at the site will follow CERCLA procedures, but will also incorporate RCRA requirements. The IAG is being amended to add plant-wide sumps as one area based on requirements of the RCRA permit.

Remedial Design/ Remedial Action (RD/RA)

Capping of the Rocket Motor Washout Pond Area was initiated in 1984. The Texas Water Commission certified the pond clean-closed in 1986.

Loring Air Force Base
Limestone, Maine

(52)

Service: Air Force

Size: 9,000 Acres

HRS Score: 34.49

Base Mission: B-52 Stratotankers and KC-135 Stratotankers (Scheduled for closure)

IAG Status: Pre-ROD IAG signed January 1991

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Scheduled for completion in November 1994; Placed on NPL 1990; Closure scheduled for September 30, 1994

Contaminants: Waste oils, fuels, spent solvents, PCBs, pesticides, heavy metals

Funding to Date: $14.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historically, wastes have been burned or buried in landfills. Surface water less than three miles downstream is used for recreational activities and a fresh water wetland is 500 feet from Landfill 3.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in October 1986 disclosed that monitoring wells on-base were contaminated with methylene chloride, TCE, carbon tetrachloride, and barium. The wells are on or downgradient from several widely scattered disposal areas. Two areas are old, adjacent gravel pits that were used for landfill and cover 190 acres. Landfill 2 was used for disposal of hazardous wastes from 1956 to 1974, and Landfill 3 saw similar use from 1974 to the early 1980s. In the 0.5-acre Fire Department Training Area, large quantities of hazardous materials were disposed of through landfilling until 1968. From 1968 to 1974, these materials were disposed of by burning. The 600-acre flightline area, with its industrial shops and maintenance hangars, was a primary generator of hazardous waste on-base. While some generated wastes were disposed of on the ground or in storm and sewer drains in the area, most wastes were disposed of elsewhere. Soils in the flightline area also contain significant amounts of fuel, oil, and various VOCs. According to the 1986 IRP report, water in the flightline drainage ditch, a 2,500-foot portion of a tributary to Greenlaw Creek, is contaminated with methylene chloride, tetrachloroethylene, 1,1-TCA, TCE, and iron. The ditch receives storm water discharges from several sewers draining the flightline area and the nose dock area, both locations where fuels were handled.

Remedial Design/ Remedial Action (RD/RA)

An RA was initiated in 1989. Remedial actions in 1990 included contaminated soil removal and treatment and UST removals. Remedial Actions for 1993 will involve further contaminated soil treatment and free product removal.

Louisiana Army Ammunition Plant (53)
Doyline, Louisiana

Service: Army

Size: 14,974 Acres

HRS Score: 30.26

Base Mission: Load-Assemble-Pack operations; Manufacture shell metal parts

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; RI/FS initiated 1985; Placed on NPL 1989

Contaminants: Oils, grease, degreasers, phosphates, solvents, metal plating sludges, acids, flyash, TNT and RDX explosives

Funding to Date: $39.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Louisiana Army Ammunition Plant (LAAP) is owned by the government and is operated by the Thiokol Corporation. LAAP currently employs 1,680 people.

The PA/SI concluded that the explosive loading and disposal areas of the plant were heavily contaminated with explosive wastes, primarily TNT, RDX, and tetryl. In addition, sumps and unlined ponds in the metal parts production area were contaminated with waste from plating and fabrication operations. No indication of contaminant migration off the installation through ground or surface waters was found. The high potential for future migration of the explosive contamination, however, resulted in a recommendation for a water quality monitoring program.

Remedial Investigation/ Feasibility Study (RI/FS)

The first stage of the RI/FS work consisted of a preliminary contamination survey completed in 1982. The actual RI/FS began in 1985 with a follow-on RI completed in 1987. The investigations indicated that no off-post migration had occurred. On-post wells, however, were contaminated with explosives, including TNT, RDX, and HMX. The contaminated ground water had reached the southern boundary, so as part of a follow-on RI, four wells were installed off the southern boundary of the installation in 1988. A comprehensive RI and Risk Assessment were completed in 1992, along with a draft FS. Revisions to the FS are underway.

Remedial Design/ Remedial Action (RD/RA)

Incineration of explosives-contaminated soil and treatment of contaminated surface water in Area P began in 1987. The incineration of 102,000 tons of soils and the treatment of 53.6 million gallons of contaminated water was completed in September 1990. Closure activities and revegetation of the site were completed during the fourth quarter of 1990.

A 1989 analysis indicated that the explosives-contaminated ground water had migrated off the southern boundary; however subsequent sampling episodes did not indicated any contamination. To ensure that drinking water sources on and off the installation were free of contaminants, two 6-month drinking water monitoring programs were completed between 1989 and 1991. Monitoring of these 16 drinking water wells will continue.

Luke Air Force Base (54)
Glendale, Arizona

Service: Air Force

Size: 4,198 Acres

HRS Score: 37.93

Base Mission: Advanced fighter training

IAG Status: Pre-ROD IAG signed September 27, 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Petroleum/oil/lubricants, VOCs

Funding to Date: $13.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

Luke AFB is located in the Sonoran Desert and rests on a broad alluvium-filled valley within the western portion of the Phoenix Basin. The PA/SI conducted in 1982 identified a number of potentially contaminated areas, including five sites where hazardous wastes were disposed. These five sites were subsequently investigated in 1983 and 1986 as part of the IRP. Additional sites were later identified by the base during a supplemental SI.

Remedial Investigation/ Feasibility Study (RI/FS)

Two old fire training sites in bermed areas were used to simulate aircraft fire by burning POL wastes. Soil borings taken from beneath this site contained levels of oil and grease greater than 100 ppm TPH. These findings prompted a pre-design treatability study to determine the extent of contamination and gather the requisite information for conducting a soil vapor extraction pilot study and the subsequent removal action. Three ground water monitoring wells were installed, one presumed to be upgradient and two downgradient. The water table was measured at 360 feet below ground surface and no significant contaminants were detected. In addition, the Waste Treatment Annex Landfill was discovered eroding from the banks. An inspection of the landfill was conducted and stabilization action was executed in March 1991. 1992 finishes up the major RI work at Luke AFB with the final RI document due November 15, 1992.

Remedial Design/ Remedial Action (RD/RA)

IRAs to date include the removal of contaminated soil and USTs at a JP-4 fuel storage site. The USTs were removed and the area was clay-capped and monitoring wells installed. In addition, the leaking UST at the base service station was removed. Another IRA in progress is a soil vapor extraction for the North Fire Training Area. A treatability study was completed for this site in January 1991. In 1993, a multi-site RD/IRA program will begin the major contamination cleanup process at Luke AFB.

March Air Force Base
Riverside, California

(55)

Service: Air Force

Size: 7,123 Acres

HRS Score: 31.94

Base Mission: Aircraft maintenance and repair; Refueling operations; Training activities

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1989

Contaminants: VOCs, heavy metals

Funding to Date: $25.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Soils on March AFB are contaminated with organics and metals. Primary ground water contaminants are TCE and perchloroethylene (PCE). March is adjacent to light industrial, agricultural, and residential areas and contamination may potentially affect an estimated 60,000 people.

The Air Force investigated 43 potentially contaminated sites. The sites included three fire training areas, seven inactive landfills, underground solvent storage tanks, an engine test cell, and spills. Significant contamination was found at seven of the 43 sites. Three regions of ground water contamination beneath the base have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS status report, completed in 1991, divided March's sites into three OUs. RI/FS efforts are presently underway at all three OUs. On-base Well No. 1 (OU1) was contaminated with the highest levels of TCE and trans-1,2-dichloroethylene, which exceed state drinking water standards and was taken out of service. The contamination has migrated to five private drinking water wells and the base began supplying bottled water to the affected residents in 1986. The Air Force then contracted the local water company to extend its water mains to the homes with contaminated wells. Activities will continue in the three OUs according to the basewide work plan developed under the requirements of the Pre-ROD IAG. No Further Remedial Actions Planned RODs for all three OUs are expected by 1995.

Remedial Design/ Remedial Action (RD/RA)

Cleanup began in 1990 with the design of an IRA to extract floating petroleum product from the ground water table at the Panero Hydrant Fueling System. To date, 8,500 gallons of JP-4 has been recycled and sold. In-depth RD/RA activities in 1990 included the removal of the Panero Hydrant Fueling System and the treatment of over 11,000 cubic yards of contaminated soil. The effort was completed in February 1992.

The construction of the Ground Water Extraction Treatment System (GETS) was initiated in 1990. The GETS is designed to prevent further migration of contaminated ground water off-base by using a carbon absorption system connected to extraction wells along the eastern boundary of the installation. Long-term operation of the system began in 1992.

Planned RD/RA activities for 1993 include further treatment of contaminated soil and removal of petroleum product at Panero, designs and remediations at the Swimming Pool and Engine Test Cell areas and continuation of the long-term Ground Water Monitoring Program.

Mather Air Force Base (56)
Sacramento, California

Service: Air Force

Size: 5,934 Acres

HRS Score: 28.90

Base Mission: Electronic Warfare Officer Training; Navigator Training (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of California

Action Dates: PA completed 1982; RI/FS initiated 1984; Placed on NPL 1989; SI completed 1990; Closure scheduled for September 30, 1993

Contaminants: Solvents, cleaners, VOCs, plating wastes

Funding to Date: $33.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Water quality analyses of drinking water in wells on and near the base indicate the presence of TCE and other solvents in the shallow ground water system. In 1979, drinking water contamination was first discovered when sampling from the production well at the Aircraft Control and Warning (AC&W) area confirmed the presence of TCE. To date, ground water contamination has been confirmed at the AC&W Site, the 7100 Area (southwestern corner of the base), and the West Ditch (western border of the base). Both the 7100 Area and West Ditch are suspected of causing off-base contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

The IRP at Mather AFB is currently being conducted at the AC&W Sites, the Group 2 Sites and the Group 3 Sites. The RI at the AC&W Sites was completed in March 1991, with the FS completed in July 1991. The FS report recommended ground water remediation at the site. A draft Record of Decision (ROD) for the AC&W Sites is currently in dispute resolution.

The RI and the FS included in the Group 2 Sites is underway, with the draft reports due in late 1992. It is anticipated many of these sites will not require remediation, but extensive ground water contamination in three areas of the base will likely require ground water removal and treatment.

The RI at the Group 3 Sites has begun, with a draft report due in early 1993. The sites consist mainly of oil/water separators and are expected to require limited if any remediation.

Remedial Design/ Remedial Action (RD/RA)

Bottled water was provided to off-base residents in 1986 while construction of a water line could be completed from the base water supply to the affected residents. In 1989, six residences and a 33-unit trailer park were connected to a local municipal water main.

While the level of treatment for the effluent from the pump and treat system for the TCE-contaminated ground water is in dispute, remedial design at the AC&W Site is in progress. Once the ROD is signed, a site remediation schedule will be negotiated and included in the pre-ROD IAG. It is expected that construction at the site will be complete in 1993, with treatment of the ground water continuing for at least seven years.

Remedial actions will be required at several other sites. Schedules for remediation will be negotiated after the RODs are signed.

McChord Air Force Base (57)
(Wash Rack/Treatment Area—WTA)
(American Lake Garden Tract—ALGT)
Tacoma, Washington

Service: Air Force

Size: 4,616 Acres

HRS Score: WTA – 42.24
ALGT – 31.94

Base Mission: Airlift services to troops, cargo, equipment, passengers, and mail

IAG Status: ALGT signed September 1991; WTA signed September 1992

Action Dates: PA completed 1982; SI completed 1986; ALGT RI/FS completed 1991; WTA RI/FS initiated 1990; Two-party Agreement with State signed July 1991 for 29 non-NPL sites to confirm NFRAP decision

Contaminants: ALGT – Chlorinated solvents; WTA – Fuel constituents; Non-NPL – Fuel, hydraulic fluid, oils, solvents, paints, acids, pesticides, metals

Funding to Date: $9.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

Almost 500,000 gallons of hazardous substances have been used and disposed of on-base.

The PA identified 62 sites and recommended further action at 34 of them. SIs identified shallow aquifer contamination. The base, and over 10,000 people within three miles of the base, depend upon the aquifers for their drinking water.

The current sites register has grown to 65: 29 Model Toxics Control Act sites, 4 additional NFRAP confirmational sampling sites, a total of 3 IRP sites in the 2 NPL areas, 23 non-NPL NFRAP sites, and 6 NPL NFRAP sites.

The PA/SI for ALGT and WTA was completed in 1986.

Remedial Investigation/ Feasibility Study (RI/FS)

The ALGT RI/FS was initiated in 1987 and completed in 1991. Concentrations ranging from non-detect to 88 ppb of trichloroethylene (MCL 5 ppb) migrated in the shallow aquifer to the north and west into the off-base ALGT.

The WTA RI/FS was initiated in 1990 and completed in 1992. The FS addressed the removal of floating fuel from the shallow water table. A ROD to begin removing the fuel was signed September 1992. Sampling indicates the fuel is not moving.

Remedial Design/ Remedial Action (RD/RA)

The base agreed to extend the Lakewood Water District to ALGT in 1986. The hookups to the potable water system have been contracted out and work will commence in 1993. Since 1986, some private home owners have taken the initiative to hookup themselves. They are being reimbursed as the requests are made. In 1992, extraction wells and pump tests were conducted. Ground water pump and treat activities will begin in 1993.

RD of a 5-year passive fuel skimming system for the WTA will be completed in 1993 with RA to commence thereafter.

McClellan Air Force Base (58)
Sacramento, California

Service: Air Force

Size: 2,950 Acres

HRS Score: 57.93

Base Mission: Logistics for aircraft, missile, space, and electronics programs

IAG Status: Pre-ROD IAG signed 1990 with EPA and State of California

Action Dates: Initial PA/SI completed 1981; RI/FS initiated 1984; Placed on NPL 1987; Additional on-going

Contaminants: Organic solvents, metal plating wastes, caustic cleaners/degreasers, paints, waste lubricants, photochemicals, phenols, chloroform, spent acids and bases, PCB-contaminated oils

Funding to Date: $81.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

After a 1979 Air Force study detected ground water contamination, two on-base and three off-base wells were closed. Contamination has since been found in a number of off-base wells, including a municipal well. Approximately 23,000 people in the area depend on the ground water for domestic and agricultural use. A PA/SI conducted in 1981 identified 46 sites. An additional 131 Areas of Concern (AOC) have been identified, bringing the total to 177 sites. A PA/SI for an additional 81 AOCs is being conducted. The soil and ground water contamination at McClellan AFB are primarily the result of chemical releases from disposal of liquid, sludges, and solid wastes; discharges and accidental spills at various industrial activities and storage areas; and leakage from sumps, underground storage tanks, and industrial waste lines.

Remedial Investigation/ Feasibility Study (RI/FS)

As a management solution for the efficient implementation of the RI/FS, the sites were grouped into 11 OUs. A CERCLA work plan was developed to implement the RI/FS at each operable unit. The RI/FS for the entire base is expected to be completed by the year 2002. RI work is underway in OUs A, B, C, and C-1. In addition to soil OUs, basewide ground water has been identified as separate OUs. Ground water contamination is primarily in the shallow aquifer 120 feet below ground surface, but has migrated to 390 feet in depth at some locations. An RI/FS of ground water OUs is underway.

Remedial Design/ Remedial Action (RD/RA)

The Air Force provided approximately 348 residents with hookups to an alternate water source and a carbon filtration system has been installed for Base Well #18. A ground water extraction system has been installed and 11 sites have been capped in OU D. A ground water treatment plant (GWTP) was brought on-line in 1987 to treat the water. An extraction system was installed in OU C and connected to the GWTP. In 1991, an expedited action was completed near the old Building Site 666 to contain a ground water plume and prevent future degradation of a base water supply well located on the southwest edge of the base. An additional ground water extraction system was installed on the southwest edge of the base during 1992. A SVE System was installed in 1992. Several innovative treatability studies have been initiated.

Milan Army Ammunition Plant (59)
Milan, Tennessee

Service: Army

Size: 22,436 Acres

HRS Score: 58.15

Base Mission: Load-Assemble-Pack, ship, and demilitarize explosive ordnance

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, organic solvents, paints, thinners, acids

Funding to Date: $8.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Milan Army Ammunition Plant (MAAP) is a GOCO facility owned by the government and operated by Martin Marietta. MAAP presently employs 1,600 people.

A PA/SI concluded that the demolition areas, wastewater lagoons, burning grounds, draining ditches, and streams were contaminated with explosive wastes in addition to zinc, chromium, iron, sulfates, and phosphates. Of 11 MAAP water supply wells sampled in November 1978, explosive contaminants were found in three wells near the O-Line Lagoon area. These three wells subsequently were taken out of service.

Remedial Investigation/ Feasibility Study (RI/FS)

A two-phase survey completed in 1983 concluded that MAAP ground and surface waters were contaminated with TNT, DNT, and RDX. Contamination was moving toward the plant boundaries; ground and surface waters at the installation boundaries contained mercury at levels exceeding Federal EPA water quality criteria. Ground and surface waters within MAAP contained lead and chromium, but migration studies were inconclusive. The major sources of contamination identified were the O-Line Lagoons, the explosives-burning ground, the ammunition destruction area, explosive load lines, and drainage ditches associated with these areas. Sampling and analysis of existing wells continue. A formal RI/FS process for the O-Line Lagoons was initiated in 1988. A contract to perform an RI at the O-Line Lagoons, the Open Burning Grounds, and 17 other SWMUs was awarded in April 1989 and completed in July 1991. The RI Report was approved in December 1991. RDX was detected in the Milan City wells in May 1991 at levels below 2 ppb. Follow-on RI work began in May 1992 to determine the source and nature of the ground water contamination related to the northern effluent ditches.

The December 1991 RI Report recommended several sites for no further action. Due to health risks, it also recommended that an FS be conducted on the O-line Ponds. The O-line Ponds were separated into two OUs. OU1 is the ground water and OU2 is the soils encompassed by the ponds. An interim ROD was signed in September 1992, implementing the use of a pump, treat, and reinjection system incorporating an innovative treatment technology (UV oxidation) for the permanent destruction of explosives contained within ground water. The ROD for OU2 is scheduled for mid-1993.

Remedial Design/ Remedial Action (RD/RA)

The O-Line Lagoons were capped and seeded with grass in December 1984. Additional wells to monitor leaching of contaminants into ground water have been installed. Post-closure maintenance of grounds and fences continues. RD for OU1 will be completed in 1993.

Minneapolis-St. Paul Air Reserve Base (60)
(Small Arms Range Landfill)
Minneapolis, Minnesota

Service: Air Force

Size: 280 Acres

HRS Score: 33.70 (1 site only, Small Arms Range Landfill)

Base Mission: Tactical Airlift

IAG Status: Pre-ROD IAG signed by the Air Force and EPA Region V November 6, 1989; Public comment period completed January 1990

Action Dates: PA completed 1983; SI completed April 1986; Placed on NPL 1987; RI completed July 1990; FS completed June 1991

Contaminants: Oil/petroleum/lubricants, spent solvents and cleaners, battery acid, strippers, painting wastes (containing metals such as chromium), PCB-contaminated oils, chlorinated hydrocarbons

Funding to Date: $2.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Small Arms Range Landfill is located on non-contiguous property two miles from the main base, and was the primary solid waste disposal site for the base from 1963 to 1972. The landfill contains primarily general refuse, but industrial waste products may have been buried or burned in this landfill. These products include paint thinners and removers, paint, primers, lacquers, paint filters containing chromium paint residue, and 100 to 200 gallons of leaded fuel sludge. This landfill is approximately three acres, and is located within the 100-year flood plain of the Minnesota River. The Minnesota River last flooded it banks in 1965. The northern boundary of the Minnesota Valley National Wildlife Refuge lies 500 feet from the landfill. Approximately 64,700 people depend on public and private wells for drinking water within a 3-mile area of the landfill.

The other sites identified on the installation include a landfill, fuel spills, sludge burial pits, a hazardous waste drum storage area, a battery shop leaching pit, a UST, and a ground water plume of AVGAS beneath the Past Fuel Site.

Remedial Investigation/ Feasibility Study (RI/FS)

The Proposed Plan for the Small Arms Range Landfill was completed in August 1991. The public meeting for this site was held on September 5, 1991. Ground water investigation results taken from the 12 monitoring wells around the site detected low concentrations of a few compounds. During the first round of ground water sampling, only TCE was detected above federal MCLs in the upgradient well, which suggests an off-base source. Also detected was the organic compound bis(2-ethylhexyl)phthalate, which was slightly above the Minnesota Recommended Allowable Limit (RAL) in one sample.

Remedial Design/ Remedial Action (RD/RA)

The chosen remedial alternative for the NPL site is natural attenuation with ground water and surface water monitoring, maintenance of the landfill cover, and site access restriction. EPA will be counting the NPL site as "cleaned up" even though the ROD requires two more years of ground water monitoring.

Moffett Naval Air Station (61)
Sunnyvale, California

Service: Navy

Size: 3,919 Acres

HRS Score: 29.49

Base Mission: Training for air/patrol squadrons and antisubmarine warfare; Headquarters for Commander Patrol Wings of Pacific Fleet (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1989; Amended in 1990 with EPA and State of California

Action Dates: PA completed 1984; Placed on NPL 1987; RI/FS initiated 1988; SI completed 1989; RI scheduled for completion 1992

Contaminants: Metal plating wastes, PCBs, waste oil and fuels, painting residues, organic solvents, caustics, coolants, pesticides, asbestos, freon, dyes

Funding to Date: $34.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (equivalent to a PA) was completed in April 1984 for both Moffett Field Naval Air Station and Naval Auxiliary Landing Field Crows Landing. A total of 13 sites were identified during the IAS, 9 of which were located at Moffett Field. Of these nine sites (Sites 01-09), all but the Golf Course Landfill (Site 02) were recommended for further investigation. In December 1990, the Department of the Navy identified an additional 10 sites (Sites 10-19) at Moffett Field NAS. No PA was conducted; however, sampling data from other sources were available and no PA or SI was deemed necessary. A PA investigation is currently underway at all buildings at the installation that are likely to have generated or handled hazardous wastes.

A PRP site is located just south of, but not on, the Moffett Field NAS installation. The Department of the Navy is not a named PRP or a signator on the ROD; however, the Navy is bound by the terms of the ROD. The PRP examined two sites at Moffett Field NAS as "inferred sources" of their ground water contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

Nineteen sites currently are being investigated under an RI/FS, including nine identified in the PA/SI and 10 additional sites incorporated as a result of a Cease and Desist Order to Moffett Field by the California Regional Water Quality Control Board. RI/FS work plans were finalized in March and April 1988. The RI has been conducted in two phases. Phase I of the RI started in May 1988 and Phase II began in November 1989. Upon completion of Phase I, sites that have been sufficiently characterized and require no additional Phase II work will be evaluated so that OU RAs can be conducted.

The site has been divided into six operable units to facilitate faster cleanup. OU4 has since been eliminated.

Remedial Design/ Remedial Action (RD/RA)

A removal action to address leaking tanks and sumps was initiated in 1990. The evaluation and closure of abandoned wells that may be potential conduits for subsurface contamination also were initiated in 1990 and completed in 1992. A pump-and-treat system was completed for Site 14 in December 1992 and is currently in operation. A concrete bioremediation pad will be completed in January 1993 and bioremediation of Site 12 soil will begin shortly thereafter.

Mountain Home Air Force Base (62)
Mountain Home, Idaho

Service: Air Force

Size: 9 Square Miles

HRS Score: 57.80

Base Mission: Air Combat Command; 366th Wing, with KC-135, F-15C, F-15E, F-16C, EF-111, and B-52 aircraft

IAG Status: Pre-ROD IAG signed January 1992

Action Dates: RI/FS initiated 1985; Placed on NPL 1990; PA/SI completed 1986

Contaminants: VOCs, petroleum/oil/lubricants, heavy metals

Funding to Date: $4.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Hazardous materials and wastes have been used and generated at Mountain Home for aircraft maintenance and industrial operations. Prior to 1969, base wastes were disposed of by several then-accepted methods, including incineration and landfilling of solid wastes, discharge of liquid wastes to sanitary sewers, and the use of waste oil for road oiling. The area around the base is primarily agricultural, and wells supporting 6,000 people and land irrigation are three miles from hazardous substances on base.

During the PA/SI, the Air Force identified potentially contaminated areas where POL products, solvents, and pesticides were disposed. These sites subsequently were investigated in 1985 and a supplemental SI was conducted in 1988 as part of the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1985 and 1988. The lagoon landfill, where general refuse and POL products were disposed of between 1952 and 1956, is currently the site for the base wastewater lagoon. Monitoring wells installed near the center of the landfill detected lead and cadmium (below MCLs) in the ground water. In 1988, soil, surface, and ground water samples were collected and analyzed for metals, volatile and semi-volatile organics, and total petroleum hydrocarbons. Any compounds detected within these media were within MCLs for drinking water. To determine whether any contaminants have reached the interlayers between the lagoon and the water table, monitoring wells have been installed and sampled.

Waste oils, fly ash, solvents, jet fuel, tank cleaning sludge, and possibly 20 drums of DDT were placed in trenches within the landfill and burned or covered with fill. Soil and ground water samples were analyzed for metals, organics, and petroleum hydrocarbons. Organics and petroleum hydrocarbons were detected in shallow soil samples, but no vertical migration was evident in soils or ground water. Additional efforts have been made to locate and sample additional disposal trenches, including the DDT drums. An FS to evaluate remedial action alternatives for the fire training area will be finalized in 1993. The USGS is conducting a ground water study in support of the RI/FS to assist with the characterization of the complex ground water system.

Remedial Design/ Remedial Action (RD/RA)

The removal action at the low-level radioactive waste disposal site was initiated in 1992 to reduce the threat of contaminant migration.

New London Submarine Base (63)
Groton, Connecticut

Service: Navy

Size: 547 Acres

HRS Score: 36.53

Base Mission: Homeporting submarines; Submarine intermediate maintenance and repairs; Submarine training; Submarine medical research

IAG Status: Initiated and expected to be signed in 1992

Action Dates: IAS completed 1983; RI/FS field plan completed 1990; Placed on NPL August 1990

Contaminants: Pesticides, fuel oil, construction rubble, spent acids, incinerator ash, solvents, paints, PCBs

Funding to Date: $2.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Initial Assessment Study (IAS) was completed in 1982. Of the 16 potentially contaminated sites studied, 3 sites (2, 3, and 6) were recommended for further investigation. A Verification Study (VS) was completed in December 1984 for Sites 2, 3, and 6. Additional characterization was recommended for all three sites. An SI was completed on seven sites (1, 4, 7, 8, 14, 15, and 18) in August 1992. An extended SI was recommended for Sites 1 and 14 and corrective action for Site 18 under the UST program. No further action is expected for Sites 1 and 14. Three additional sites (13B, 13C, and 13D) were discovered and added to the program. The SI work plan for Sites 13B, 13C, and 13D has been completed and the field work is expected to begin in 1993. Potential contaminant migration represents a threat to the Thames River, a fishing source and recreational area.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was conducted on four sites (2, 3, 6, and 13) and the final RI report was completed in August 1992. A draft RI work plan to perform an extended RI at these sites and an initial RI at Sites 4, 7, 8, and 15 is under review. The FS for the eight sites is expected to be completed in 1996. The RI/FS for the three new sites (Sites 13B, 13C, and 13D) is expected to be completed in 1997.

A Technical Review Committee (TRC) was formed in 1989 and meetings are held periodically.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin upon completion of the RI/FS and is expected to continue over the next several years.

A removal action was completed in 1991 for Site 8 and consisted of disposing of 19 gas cylinders.

Newport Naval Education & Training Center (64)

Newport, Rhode Island

Service: Navy

Size: 1,400 Acres

HRS Score: 32.25

Base Mission: Logistics support; Training center

IAG Status: Pre-ROD IAG signed in March 23, 1992; effective date July 8, 1992

Action Dates: PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989; RI Phase I completed 1992

Contaminants: Paints, oils, spent acids, solvents, PCB-contaminated soil

Funding to Date: $3.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Migration of contaminants pose a potential threat to the underlying aquifer. Surface drainage and ground water from potentially contaminated sites flow directly into the Narragansett Bay. Such potential contamination could adversely affect shellfish harvested for human consumption.

A PA/SI identified 18 potentially contaminated sites. Nine sites exhibited sufficient evidence to warrant further studies.

In November 1989, Newport NETC was listed on the National Priorities List (NPL) with a score of 32.25.

Remedial Investigation/ Feasibility Study (RI/FS)

Twenty-two TRC meetings have been held since April 1988. In July 1990, the community relations plan was issued for Newport NETC. Field work for the RI/FS Phase I work plan was completed in November 1990. The draft RI report was completed in November 1991 and is undergoing TRC review.

The three party (Navy, EPA, and RIDEM) Federal Facilities Agreement (FFA) was signed March 23, 1992 and became effective after public review on July 8, 1992. The FFA determined that 10 sites were under the Navy's IR program and 8 sites belong under FUDS program. Currently, four sites are included in the RI Phase II work plan, six are included in the SASE work plan per the FFA, and one of the FUDS (Melville North Landfill) is undergoing RI Phase II work plan finalization. The Navy is continuing with its lead agency role at Melville North Landfill. Draft SASE work plan completed July 1992. Draft RI Phase II work plan completed October 1992. Draft Phase II RI work plan for Melville North Landfill completed October 1992.

Remedial Design/ Remedial Action (RD/RA)

Final Record of Decision (ROD) for an Interim Remedial Action (IRA) at Tanks 53 and 56 at Tank Farm Five, Newport NETC, RI was completed and signed on September 29, 1992. Remedial Design was negotiated and design began in November 1992. Oily soil piles Removal Action (RA) at Melville North Landfill is expected to begin January 1992.

Norton Air Force Base (65)
San Bernardino, California

Service: Air Force

Size: 2,003 Acres

HRS Score: 39.65

Base Mission: C-141 Airlift (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Scheduled for completion November 1993; Placed on NPL 1987; Closure scheduled for March 1994

Contaminants: Waste oils and fuels, solvents, paint strippers and residues, refrigerants, acidic plating solutions, metal plating residue

Funding to Date: $25.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified several sites of potential contaminant migration. Sites targeted for an RI/FS included two landfills, six discharge areas, four chemical pits, a fire training area, a fuel spill area, a PCB spill area, a chemical spill area, two waste storage areas, an UST area, and a low-level radioactive waste burial site. After additional study, two more sites were identified in 1987.

Remedial Investigation/ Feasibility Study (RI/FS)

Initial investigations found that soils at several sites were contaminated with solvents, fuel derivatives, and metals. An IAG between the installation and the regulatory community was signed as required by CERCLA. Deadlines for meeting critical milestones toward final remediation have been established and coordinated with EPA and the state. An RI/FS effort is underway to characterize all sites, with completion scheduled for December 1993. In addition, a comprehensive RI/FS work plan (strategy plan) has been developed. A draft RI/FS work plan was submitted to EPA and the state for review prior to finalization in 1990. A comprehensive ground water plan also was provided.

Remedial Design/ Remedial Action (RD/RA)

Installation of a ground water pump-and-treat system is planned to remediate TCE contamination in the central portion of Norton AFB and prevent further TCE migration. In 1989, a total of 26 USTs were removed. Removal of underground storage tanks and surrounding contaminated soils continues.

Ogden Defense Depot (66)
Ogden, Utah

Service: Defense Logistics Agency

Size: 1,139 Acres

HRS Score: 45.10

Base Mission: Electronic equipment, industrial construction equipment, textiles, package petroleum, and industrial/commercial chemicals distribution

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS completed 1991; ROD OU #2 signed 1990; ROD OU #1, #3, #4 signed 1992; RA pump/treat/air strip started 1992; RD OU #1, #3, #4 initiated 1992

Contaminants: Solvents, paint/paint residues, petroleum/oil/lubricants, insecticides, chemical warfare agents (mustard and phosgene gas training kits), methyl bromide, metal plating wastes/sludges, PCB-transformer oils, degreasers, acids and bases, sand-blast residues

Funding to Date: $11.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 44 sites as potential contaminant migration sources. The PA/SI has been completed for all 44 sites. Twenty-two were studied further under the RI/FS. These 22 sites were divided into four Operable Units (OUs) and nine contamination study areas.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987 when ground water monitoring wells were installed and soil borings were taken at 17 locations. Sampling of soil and ground water has confirmed concentrations of benzene, TCE, vinyl chloride, trans-1,2-DCE, cis-1,2-DCE, methylene chloride, chlordane, zinc, cadmium, barium, toluene, tetrachloroethene, and chromium above the established federal MCLs. Ground water contamination has been limited to the shallow aquifer because of the current geological conditions at the site. The FFA identifies four OUs. RI/FS reports were completed for all OUs during 1991 and contamination site study areas. All 22 sites have completed the RI/FS phase. All RODs have been approved during 1992. Five private wells of nearby land owners were tested for contamination during 1992. All wells meet national drinking water standards. A public health assessment completed in 1992 concluded that Ogden poses no apparent public health hazard.

Remedial Design/ Remedial Action (RD/RA)

Vials of mustard agents and irritant grenades were removed from disposal pits in June 1988. During 1992, contaminated soil at OU2 was removed to ground water level and incinerated. RA action pump, treat, and air strip began at OU2 during 1992. RDs are expected to be completed by June 1993 for the other OUs. RA construction is expected to be ongoing by September 1993.

Otis Air National Guard Base/ Camp Edwards Falmouth, Massachusetts

(67)

Service:	Air Force
Size:	22,000 Acres
HRS Score:	45.92
Base Mission:	Provide Army and Air National Guard training, East Coast Air Defense, and Coast Guard Air/Sea Rescue
IAG Status:	Pre-ROD IAG signed July 1991
Action Dates:	Placed on NPL 1989
Contaminants:	Waste solvents, emulsifiers, penetrants, photographic chemicals, VOCs
Funding to Date:	$23.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA completed in December 1986 by the Air National Guard (ANG) identified 73 areas of concern (AOCs). Nineteen AOCs have been determined to require no further action and have had Decision Documents issued. Four AOCs are undergoing additional investigation. Since the conclusion of the PA, four additional AOCs have been identified and are in various stages of the investigative process.

Remedial Investigation/ Feasibility Study (RI/FS)

In 1992, 14 RI/FSs were underway. One area of concern is the southeast region where four ground water plumes of contamination emanate from the base. Some private wells showed contamination and have since been placed on town water. This area is just upgradient from two recreational ponds. Due to public concerns over the safety of the ponds, the NGB has been sampling the two ponds since July 1991. All sampling results to date have demonstrated that the water is safe for swimming. Fish sampling conducted in May 1992 by the Massachusetts Department of Environmental Protection showed no contamination. Sediment sampling conducted by the NGB has also showed no contamination. The first phase of the comprehensive testing of both ponds begins in October 1992 with fish sampling. In addition to the work to be conducted in the ponds, full delineation of the ground water plumes in that area is set to begin in November 1992.

Recent investigations to identify and evaluate sump structures have been accomplished. Over 200 sump structures were characterized during late 1991 and the first two quarters of 1992. Several are likely candidates for future remediation.

Remedial Design/ Remedial Action (RD/RA)

The National Guard Base (NGB) conducted a "time-critical" removal action of four sump structures in 1990. Contaminated liquids and sediments were removed and sealed in metal drums for eventual disposition through the Defense Reutilization and Marketing Office.

An additional cleanup project involves pumping and treating contaminated ground water from a ground water plume which is presently located in the Crane Wildlife Management area of Falmouth. This project will protect downgradient public and private water supplies. The ground water treatment is scheduled for five years while an upgradient plume is fully identified and a decision is made on remediating that plume. The CS-4 plume containment project was the first federal facility ROD between DoD and EPA Region I.

Pearl Harbor Naval Complex (68)
Pearl Harbor, Hawaii

Service: Navy

Size: 6,300 Acres

HRS Score: 70.82

Base Mission: Serve as area commander in coordinating resources to provide facilities, services, and materials in support of the U.S. Pacific Fleet

IAG Status: IAG not yet initiated

Action Dates: PA completed 1983; RI/FS initiated 1991; Listed on the NPL October 1992

Contaminants: Waste oils, pesticides, heavy metals, PCBs, solvents

Funding to Date: $19.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA conducted in 1983 identified 31 potential sources of hazardous substances. Since then, additional sources have been identified. The Complex currently has 22 sites requiring further action. Most sites are located close to Pearl Harbor shoreline waters. Some sites are located near drinking water wells and wetlands. The potential exists for migration of contaminants to receptors or resources of concern.

Remedial Investigation/ Feasibility Study (RI/FS)

The proposed listing of Pearl Harbor Naval Complex on the NPL was based on the aggregate scoring of six sites within the area: Pearl City Peninsula Landfill, Former Gyro Shop, PCB Disposal Storm Drain at Building 68, Pickling Shop Waste Disposal, Makalapa Pesticide Rinseate Pit, and Aiea Laundry Shop. All sites are not contiguous. The activities affected by the proposed NPL action include Shipyard Pearl Harbor, Public Works Center Pearl Harbor, Submarine Base Pearl Harbor, Naval Station Pearl Harbor, Naval Supply Center Pearl Harbor, and Inactive Ships Detachment Pearl Harbor.

A RI/FS was initiated in September 1991 at some of the higher priority sites. Other sites will be investigated as funds become available and requirements are negotiated with EPA and the State. Integration of RCRA and underground storage tank requirements with the NPL action is anticipated. Operable units will probably be established to manage the investigation and cleanups. A Technical Review Committee has been established and convened to review actions at the sites. A regional community relations plan has been completed. The Navy anticipates that an FFA will be initiated in 1992. More details concerning the implications of the NPL action will be established during FFA negotiations.

Remedial Design/ Remedial Action (RD/RA)

While the RI/FS is in progress, removal actions will be undertaken when appropriate to expedite the cleanups. In 1992, two removal actions were implemented. Approximately 954 cubic yards of PCB contaminated soils were excavated and disposed of at an open storage area. Approximately 250 gallons of free-floating fuel product were recovered from the ground water in a 45-day period pilot study. Plans and specifications for another removal action were completed in 1992 and will be awarded in early FY 93. This removal action will include the excavation and disposal of solvent-contaminated soil. Initiation of RD/RA at some sites is expected in 1994.

Pease Air Force Base (69)
Portsmouth/Newington, New Hampshire

Service: Air Force

Size: 4,365 Acres

HRS Score: 39.42

Base Mission: Aircraft maintenance (scheduled for closure)

IAG Status: Pre-ROD IAG signed 1991

Action Dates: PA/SI completed 1986; RI/FS initiated 1987; Scheduled for completion September 1993; Placed on NPL April 1991; Closed March 31, 1991

Contaminants: Organic solvents, pesticides, paint strippers, petroleum products

Funding to Date: $52.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Pease AFB is commercial/residential. The base abuts a tidal estuary called Great Bay that leads to Little Bay three miles downstream. This is used for both shellfishing and recreational activities. Both coastal and fresh water wetlands are along surface water migration pathways from the base. An estimated 9,000 people obtain drinking water from public and private wells within three miles of the base.

A PA conducted in 1986 identified 18 potentially contaminated sites including 7 landfills, 2 fir training areas, and 9 liquid waste disposal areas. A second PA, conducted in 1990 to satisfy IAG requirements, identified 13 additional potentially contaminated sites out of 14 studied. One of these sties, Landfill 3, showed no evidence of contamination. Currently, there is a total of 42 potentially contaminated sites identified.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987. Traces of heptachlor and lindane were found in surface waters that drain one of the landfills. Lead and zinc were found in sediments of three major drainage ditches.

Additional RI/FS work is currently underway. The RI/FS for all sites will be completed by the end of 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1984, an aeration system was installed to remove TCE from the base water supply. The system had been discontinued since TCE is no longer detectable.

Removal of EOD items such as spout flares and starter cartridges was completed in 1991. Soil removal actions were accomplished at three sites including the fire training pit. A drum removal was accomplished at another site.

Three pilot ground water treatment plants have been placed on the base to recover and treat known contaminated ground water. The first plant began operations in August 1990. A second plant became operational in February 1991 and a third plant was put into operation in March 1992.

Pensacola Naval Air Station (70)
Pensacola, Florida

Service: Navy

Size: 5,874 Acres

HRS Score: 42.40

Base Mission: Flight training (Fixed-wing and rotary) (NADEP, formerly NARF)

IAG Status: Pre-ROD IAG signed October 1990

Action Dates: PA completed 1983; RI/FS initiated 1988; Placed on NPL 1990; SI scheduled for completion 1992

Contaminants: Ammonia, asbestos, cyanide, heavy metals (cadmium, chromium, lead, mercury, nickel, silver, zinc), paints, PCBs, pesticides, phenols, plating wastes, solvents (chlorinated and non-chlorinated)

Funding to Date: $11.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, for Naval Air Station Pensacola (NAS Pensacola) was completed in June 1983 for 29 sites. Sites 01, 11, 17, 21, 22, 27, and 29 were recommended for further study. A State/ Department of the Navy meeting on 17 November 1983 added Sites 30-34 and recommended additional study at Sites 01, 02, 03, 09, 11, 15, 17, 19, 21-23, 26, 27, and 30-33. A Verification Study (phase of the Confirmation Study (CS)) was completed for Sites 01, 02, 03, 09, 11, 15, 17, 19, 22, 23, 26, 27, and 30-34 on 26 July 1984. The Verification Study proposed work at Sites 01, 11, 15, 26, 27, and 31-34. A subsequent Characterization (Phase III) Study was completed on 16 December 1985 which studied Sites 01, 11, 15, 19, 26, 27, and 31-34.

NAS Pensacola entered the National Priorities List (NPL) on 31 December 1989 with a score of 42.4. The Federal Facility Agreement (FFA) was signed on 23 October 1990 and addresses additional sites which have been added to the list of potentially contaminated areas at this installation. The FFA includes Sites 01-18, 22, 24-36, and 38-42. An independent SI is currently being performed for Sites 40, 41, and 42, Bayou Grande Area, NASP Wetlands Area, and the Pensacola Bay Area. Sites 19-21, 23, and 37 are slated for future screening under the UST program. All other sites are expected to be in Record of Decision (ROD) status between July 1995 and September 1996.

Remedial Investigation/ Feasibility Study (RI/FS)

Sites 01-18, 22, 24-36, and 39-42 are currently in the RI/FS Phase which began in December 1988 and is expected to be complete in the FY 93/FY 94 timeframe. Remediation is expected to be recommended for most of these sites. Due to the existing hydrogeology, the area appears to be conducive for contaminant migration through the soil and overland during periods of high rainfall. Migration of contaminants could impact shellfishing waters, and the benthic and intertidal areas.

A Technical Review Committee (TRC) was established and met in July 1991 to discuss the interim data reports on the first 10 sites. A TRC meeting was held in January 1992 to discuss the remaining Phase I draft work plans. Another TRC Meeting was held in September 1992 to discuss progress and the scoping of the three water sites.

Remedial Design/ Remedial Action (RD/RA)

An Interim ROD is expected in the near future for Sites 32, 33, and 35 to continue the pump and treat action that began in January 1987 for ground water contamination.

Plattsburgh Air Force Base (71)
Plattsburgh, New York

Service: Air Force

Size: 4,795 Acres (3,440 acres are federally owned, and 1,430 acres are registered as easement tracks)

HRS Score: 30.34

Base Mission: The 380 ARW provides worldwide air refueling with KD-135A/Q aircraft and serves as host to tanker task force operations. The wing supports rapid force deployment to regional conflicts, and participates in multiservice special operations. It provides mobility support for contingency plans and supports the Single Integrated Operational Plan

IAG Status: Pre-ROD signed July 1991

Action Dates: Original PA/SI completed 1986; Supplemental PA initiated in 1992; SI for original PA was completed in 1989; RI/FS initiated in 1987 for 4 sites, RI/FS for remaining sites to begin in 1993; Placed on NPL 1990

Contaminants: Organic solvents, pesticides, fuel, Polychlorinated Biphenols (PCBs)

Funding to Date: $17.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

PA activities were initiated in April 1984. An IRP Phase I Records Search identified potential disposal/spill areas at Plattsburgh AFB. An SI was initiated in 1987 for 13 sites determined to require further action. The results of this study were published in the 1989 SI report. Through discoveries during the SI and various other sources, all of Plattsburgh's 25 sites were identified by 1990.

As a condition of the pre-ROD IAG, a Supplemental PA was accomplished in 1992. No other sites that would require investigation were identified. The Supplemental PA report will be finalized in 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS activities, initiated in 1991, are progressing at 14 sites. RIs for six sites will be initiated in 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities for 1992 included the design and award of two landfill closure projects. RODs for the landfill projects were signed September 1992 by Plattsburgh AFB and EPA. Removal action projects have been designed in-house and awarded for 2 tank closures, a solvent-contaminated soil cleanup, and an old small arms range lead-contaminated soil cleanup. In addition, construction for the Fire Training Area free-product recovery facility is in progress.

Riverbank Army Ammunition Plant (72)
Riverbank, California

Service: Army

Size: 172 Acres

HRS Score: 63.94

Base Mission: Grenade and projectile steel cartridge casings manufacture

IAG Status: Pre-ROD IAG signed April 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1990

Contaminants: Cyanide, zinc, chromium wastes

Funding to Date: $12.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Riverbank Army Ammunition Plant (RBAAP) is a GOCO facility currently employing approximately 150 persons. Past operations have contaminated the ground water beneath the plant with cyanide and chromium wastes and the off-post potable water supply used by approximately 70 residents.

A PA/SI identified potentially contaminated sites, including the IWTP, an abandoned landfill, and four evaporation/percolation (E/P) ponds located 1.5 miles north of the plant near the Stanislaus River.

Remedial Investigation/ Feasibility Study (RI/FS)

Chromium contamination has been traced to past operation of the IWTP. The abandoned landfill is the source of cyanide contaminants. Both chromium and cyanide have entered the ground water aquifers beneath the plant. Their migration off-post affects the potable domestic water supply. Sampling domestic supply wells off-post is conducted quarterly. The E/P ponds contain zinc concentrations above California limits for surface impoundments. The RI report was conditionally approved in August 1991 pending completion of additional sampling at the landfill and IWTP off-load area. The additional sampling was conducted during August and September 1991 and documented in an RI Report addendum in January 1992 that was approved in February 1992. FS efforts were initiated in November 1991 and are currently entering the dispute resolution process. California Regional Water Quality Control Board is disputing a no action alternative at the former landfill proposed by the Army based on data which show the landfill spills no longer pose a threat to human health or the environment.

Remedial Design/ Remedial Action (RD/RA)

In response to finding chromium contamination above state limits, off-post domestic supply wells at five residences were replaced with deeper wells. Construction of an interim ground water treatment system was completed in December 1990 and was placed under 24-hour operation in September 1991. The system is achieving a 99 percent removal of hexavalent chromium and cyanide.

Remedial measures initially scheduled for 1991 to reduce the zinc concentrations in the E/P ponds have been delayed. The recommended alternative use of the zinc-rich sediments as an agricultural soil amendment was determined to be nonexecutable because the sediments would have to be regulated as a hazardous waste. Other alternatives are being evaluated for implementation in 1993. An Action Memorandum for installation of a waterline to off-post residences was approved in September 1991. Waterline installation was completed in October 1992 providing residents with a permanent source of safe drinking water.

Robins Air Force Base (73)
(Landfill #4/Sludge Lagoon)
Houston County, Georgia

Service: Air Force

Size: 8,855 Acres

HRS Score: 51.66

Base Mission: Aircraft logistics

IAG Status: Pre-ROD IAG signed July 1989

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: VOCs, paint strippers and thinners, paints, solvents, phosphoric and chromic acids, oils, cyanide, carbon remover

Funding to Date: $22.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

Robins AFB is located in the Coastal Plain of Georgia and includes a 1,200-acre wetland. Units of the highly permeable Cretaceous Aquifer lie beneath the base. Although the water supplies for the Base and City of Warner Robins are derived from this aquifer, the ground water flow and contaminant migration appear to be in an easterly direction, away from all wells and the city. Trichloroethylene and tetrachloroethylene have been detected in ground water. Thirty-three sites on base may contain hazardous waste from past disposal activities.

Ground water contamination with a high potential for contaminant migration was detected at three sites. Two areas covering 465 acres comprise the NPL site: Landfill #4, and an adjacent sludge lagoon, which contains phenols and metal plating wastes. Additional sites have been added since 1986 through identification by the Base and the Georgia EPD during survey work for the Part B Permit.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1986. The sites have been grouped into eight zones. In Zone 1, contamination of ground and surface water and sediments by organic solvents and metals was confirmed. In Zone 2, ground and surface water contamination was detected. In Zone 3, high levels of petroleum products, TOX, and BTEX were found. In Zone 4, ground water contamination by TOX and BTEX was detected. In Zone 5, solvents were found. No significant contamination was detected in Zone 6. In Zone 7, TCE, petroleum hydrocarbons, and lead were found. Zone 8 had one soil sample test positive for PCBs.

Another RI/FS began in 1988 to address sites which include construction debris landfills, ground water contamination areas, and several disposal areas. No contamination was detected at three sites. Further investigation of the sources of chlorinated VOC contamination in the ground water and soil needs to be addressed.

Remedial Design/ Remedial Action (RD/RA)

Several USTs were removed and water supply wells were replaced in 1987. Removal of pesticide contaminated soil in Zone 2 was accomplished in 1992. The remedial designs for Zones 3 and 5 are being accomplished with corrective actions scheduled to begin in 1993. The RD for the NPL site Zone 1 began in June 1991. A total of 18 sites were closed during 1991.

An IRP master plan was approved for Robins AFB for 1988 through 1992. The plan is a work document to consider contaminant sources, migration, and the development of remedial alternatives. The Management Action Plan (MAP) was initiated in 1992 and is expected to be completed by December 30, 1992.

Rocky Mountain Arsenal
Adams County, Colorado

(74)

Service: Army

Size: 17,228 Acres

HRS Score: 58.15

Base Mission: Decontamination and cleanup of real estate, facilities, and equipment

IAG Status: Pre-ROD IAG Federal Facilities Agreement established 1989

Action Dates: RI/FS initiated 1984; PA/SI completed 1985; Placed on NPL 1987

Contaminants: Pesticides; breakdown products from mustard gas and nerve agents; mercury; lead; arsenic; organic and inorganic chlorides; hydroxides and fluorides; diisopropylmethylphosphonate dichloropentadiene; dibromochloropropane; solvents; acids; methyl isobutylketone; sulfur bearing organic and inorganic compounds

Funding to Date: $510.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Army completed a material contamination survey in August 1973 and an installation assessment in March 1977. These studies identified 19 areas potentially contaminated with heavy metals, chemical agents, incendiaries, and industrial wastes.

Remedial Investigation/ Feasibility Study (RI/FS)

The cleanup program at Rocky Mountain Arsenal (RMA) is divided into two operable units (OUs), on-post and off-post. In FY 1992, the Final on-post OU RI Summary Report was completed (November 1992). The FS for the On-post Operable Unit is underway and scheduled for completion in 1993. The first component of the on-post FS, the Development and Screening of Alternatives, was published in August 1992.

The Final RI for off-post OU was finalized in 1989 with an addendum completed in January 1992.

Remedial Design/ Remedial Action (RD/RA)

Twenty-six Interim Response Actions (IRA) have been initiated at RMA to contain and/or treat contamination sources, reduce the extent of contaminant migration and decrease the cost of the final remediation. Completed actions include the removal of approximately 10.5 million gallons of liquid and 500,000 cubic yards of contaminated soil from the Basin F area of RMA with the liquids being placed in three tanks and a pond, and the soil being placed in a wastepile; improvements to the North and Northwest Boundary Ground Water Treatment Systems; and two new ground water intercept and treatment systems located north of the former Basin F site and in the Basin A Neck area. Over one billion gallons of contaminated ground water are treated annually by the ground water treatment systems on RMA.

In FY 1992, work on a new ground water intercept and treatment system located north of RMA was initiated and is on schedule for start up in late 1992. The modification of the Irondale intercept and treatment system to capture contaminated ground water at the Rail Yard and Motor Pool areas was completed. The IRA for Basin F liquid also progressed rapidly, with the final design and construction of the Submerged Quench Incinerator completed in October 1992 and start up operations scheduled to begin by January 1993. The CERCLA wastewater treatment facility was completed in July 1992, and has commenced system start up and check out. Finally, demolition of the Hydrazine Blending and Storage Facility was also complete.

In 1992, legislation was passed which will convert RMA into a wildlife refuge after cleanup.

Sabana Seca Naval Security Group Activity (75)
Sabana Seca, Puerto Rico

Service: Navy

Size: 2,252 Acres

HRS Score: 34.28

Base Mission: Operation of High Frequency Direction Finding Facility

IAG Status: Signed March 19, 1992

Action Dates: PA/SI completed 1988 for Sites 4, 6 and 7; PA/SI initiated 1991 for sites 1, 2 and 3; RI/FS initiated 1988 for sites 4, 6 and 7; Placed on NPL 1990

Contaminants: Pesticides, herbicides, paints, oils, solvents, PCBs

Funding to Date: $1.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past disposal methods in landfills created the potential for soil and ground water contamination. Ground water is the potable water supply for the base. Spillage of herbicides and pesticides, and the rinsing of application equipment, have contaminated the areas adjacent to the pesticide shop.

A PA identified seven potentially contaminated sites. Originally, only two sites, the former pesticide shop (Site 6) and the leachate ponding area (Site 7), were recommended for an SI. The source of the leachate at Site 7 is the municipal landfill adjacent to the Station boundary. The pistol range disposal area's (Site 4) proximity to Site 7, and recent information on Bunker 607 disposal area (Site 2) mandated that an SI be conducted at these two areas. As a precautionary measure, SIs shall be conducted at the South and North Stone Road Disposal Areas (Sites 1 and 3). Since Wenger Road Disposal Area (Site 5) was cleaned up in 1984, no further studies will be required. The PA/SI has been completed for Sites 4, 6, and 7. The PA/SI for Sites 1, 2 and 3 is expected to be completed in 1994.

Remedial Investigation/ Feasibility Study (RI/FS)

Sample analyses indicate that soils are contaminated at Site 6, the Former Pest Control Shop, but no ground water contamination has been detected at this site. Analyses also indicate that soils and ground water are contaminated at Site 7. The leachate contamination at Site 7 originates at an offsite source (the municipal landfill). However, its inclusion in the scope of the RI/FS is a precautionary measure to protect the base water supply and base personnel. The Navy will continue to pursue legal avenues with regard to the migration of contamination onto the Station. An FS is currently being prepared for Site 7 and IRAs are being considered. Additional rounds of sampling for Sites 4, 6, and 7 are expected to be conducted during 1991-2 to complete the RI and begin the FS. Depending upon the results from the SI at Sites 1, 2 and 3, any one or all sites may be recommended for RI/FS work efforts.

A TRC held its first meeting in January 1989. Several meetings were held during 1990 when the documentation for Site 6 had been completed. Several meetings will be held throughout the life of this project.

Remedial Design/ Remedial Action (RD/RA)

In 1988, the Navy installed a fence around the Former Pest Control Shop (Site 6) and covered the site with 6 inches of soil to prevent human exposure to spilled pesticides. RD/RA work will begin after completion of RI/FS activities. An interim RA is planned for Site 7.

Sacramento Army Depot
Sacramento, California

(76)

Service: Army

Size: 485 Acres

HRS Score: 44.46

Base Mission: Depot for electronics materials; Manufacture parts (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1988 with EPA and State of California

Action Dates: PA/SI completed 1979; OU/RI/FS initiated 1984; Placed on NPL 1987

Contaminants: Waste oil and grease, solvents; metal plating wastes; wastewaters containing caustics, cyanide, metals

Funding to Date: $27.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 1979 PA/SI identified several industrial areas and spill/disposal sites as potential sources of contaminant migration. A follow-on investigation conducted under the operable unit (OU) RI/FS addressed these potential sources of contamination.

An enhanced PA was subsequently conducted to determine all environmental issues that need to be addressed for Base Realignment and Closure (BRAC) 1991. The assessment included records reviews, evaluation of ongoing environmental studies, and a site visit.

Remedial Investigation/ Feasibility Study (RI/FS)

Several OUs at SAAD have been identified that may require response actions. Four of the OUs were recommended for Feasibility Studies with the other OUs to be addressed in an overall site FS. The on-going ground water monitoring program has detected contamination both on and off site, primarily low levels of TCE. Metals have also been found in the Old Morrison Creek sediments near the Oxidation Lagoons. Sampling and analysis of soil under a 1,000-gallon UST, known as Tank 2 OU, indicate that VOCs, PAHs and pesticides exist in the area. There are also several areas that were identified in the original PA/SI that do not warrant further action. A No-Action ROD for these areas will be included in the site-wide ROD expected to be drafted in FY 93.

Remedial Design/ Remedial Action (RD/RA)

The SAAD ROD for the south post ground water contamination was signed in September 1989. SAAD constructed a ground water well extraction system and an ultraviolet light hydrogen peroxide (UV/Peroxidation) treatment plant which began operations in November 1989. The action is intended to prevent ground water contamination from migrating beyond SAAD boundaries and to treat organic solvent contaminated ground water under the former burn pits. The plant has successfully treated over 110 million gallons to date.

The ROD addressing soil contamination for the Tank 2 OU was signed by the Army in October 1991 and by EPA IX and California in December 1991. SAAD has awarded a contract to design and construct a soil vapor extraction treatment system equipped with air pollution controls to remediate organic solvent soil contamination.

A remedial action contract was awarded September 1991 to design and construct a treatment system to remove heavy metals contamination from the former oxidation lagoons. SAAD has awarded a soil washing treatment system to extract the inorganics from the soils. A ROD for the oxidation lagoon operable unit was signed in September 1992. A ROD for the Burn Pits Operable Unit has been prepared. The remediation of this site includes soil ventilation and solidification.

Savanna Army Depot Activity (77)
Savanna, Illinois

Service: Army

Size: 13,062 Acres

HRS Score: 42.20

Base Mission: Depot for munitions and explosives; Manufacture and store chemicals

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of Illinois

Action Dates: PA/SI completed 1979; RI/FS initiated 1980; Placed on NPL 1989

Contaminants: Munitions-related wastes

Funding to Date: $16.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Three potable water sources near Savanna Army Depot and the shallow aquifer five meters below may be contaminated. Lagoons adjacent to the Mississippi River also could contaminate these drinking water sources. Surface contamination could affect the large wintering population of bald eagles. The PA/SI initially identified 59 potentially contaminated sites and these sites later were consolidated into 45 sites. Local munitions-related contamination was detected in sediments of the TNT washout-area leaching-pond, and in ground water on base.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in September 1980, identified and confirmed the extent and concentration of ground water and soil contamination in the lagoon sediment. The lagoons leached TNT and other chemicals to the ground water. Sampling of selected ground and surface water sites in 1988 determined the extent of contaminant migration. The IAG-mandated RI commenced in October 1989. The May 1990 site characterization summary increased the number of potentially contaminated sites to 72. Environmental sampling at 26 sites recommended by EPA and Illinois EPA commenced in 1990.

Additional investigatory effort was required under the RI in 1991 by the regulatory agencies. Sampling was conducted at the majority of sites during March through September 1992. Sampling at the remaining sites will commence in the Spring of 1993.

Remedial Design/ Remedial Action (RD/RA)

A ROD for incineration of TNT-contaminated lagoon soils was approved in March 1992. An incineration trial burn was successfully completed in October 1992. Incineration of contaminated soils was initiated in November 1992 and is scheduled for completion in February 1993.

Schofield Barracks
Oahu, Hawaii

(78)

Service: Army

Size: 17,725 Acres

HRS Score: 28.90

Base Mission: Home for Army's Oahu Island mobile defense

IAG Status: Pre-ROD IAG signed in September 1991 with EPA and Hawaii

Action Dates: PA/SI completed 1984; Placed on NPL 1990

Contaminants: Organic solvents

Funding to Date: $2.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA was conducted in 1984. Pesticide storage, burning ground, washrack activities, and paint filter disposal activities were cited as possible sources that could contaminate the municipal landfill. No evidence of ground water contamination was found at the time of the PA.

In April 1985, the Army informed the Hawaii Department of Health that high levels (30 ppb) of TCE contaminated wells supplying drinking water to 25,000 people at Schofield Barracks. The federal MCL for TCE is 5 ppb.

A PA/SI and initial RI scoping effort was initiated during June 1991-March 1992 for OU1, OU2, and OU4 to detail efforts required to locate the TCE source and to gather data needed to support remedial actions at the installation.

A PA was initiated for OU3 sites in 1992 to screen out areas requiring no further investigation and to scope follow-on investigations at those sites which were considered potential problem areas.

Remedial Investigation/ Feasibility Study (RI/FS)

In September 1986, the Army began removing TCE from contaminated wells on base to ensure safe drinking water. This interim response action will be modified as required, based upon findings of the upcoming RI/FS.

An FFA was negotiated among the Army, EPA, and Hawaii in 1991, with Army and EPA signature in September 1991. Hawaii signature should be obtained by the end of 1992.

RI/FS planning efforts were conducted in 1992, including preparation of the RI/FS Work Plan (approved November 1992) and Sampling and Analysis Plans for OU1, OU2, OU3, and OU4. Field work is scheduled to begin in January 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Currently, ground water treatment is performed in place with granulated activated carbon (GAC) for removal of TCE from ground water for the drinking water supply at Schofield Barracks.

Army initiatives include expedited remediation at OU3 sites through an "investigation-by-excavation" approach to place emphasis on remediation rather than on investigation.

The Army has also proposed to focus OU2 investigations on collection of data to support a point-of-use treatment alternative which would ensure investigations are streamlined to support remedial action.

Seneca Army Depot (79)
Romulus, New York

Service: Army

Size: 10,587 Acres

HRS Score: 35.52

Base Mission: Receive, store, distribute, maintain, and demilitarize conventional ammunition, explosives, and special weapons

IAG Status: Initiated and expected to be signed in 1993

Action Dates: PA/SI completed 1989; RI/FS scoping initiated 1990; Placed on NPL 1990

Contaminants: Chlorinated organic solvents, heavy metals

Funding to Date: $4.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI at Seneca Army Depot identified the potential for ground water contamination in the area of the ash landfill and for soil contamination at the open burning/ open detonation (OB/OD) ground. Chlorinated organic solvents from the landfill have been detected in ground water on-post and in seasonal surface seeps off-post. Occupants of a farmhouse near the field where the seeps occur may be receptors. No private wells are affected.

An additional assessment was conducted at 71 SWMUs. Of these, 27 sites require additional investigation and are scheduled for investigation in 1992 and 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS scoping activities began in 1990 for the landfills and for the OB ground. The work plans for both projects were approved in October 1991 and field work was completed in January 1992. The Preliminary Site Characterization Summary Reports are undergoing regulatory review. The second phase of the investigation will include additional field work.

The IAG has been signed by the Army and is awaiting regulatory signature. The first Technical Review Committee meeting was held in July 1992.

Remedial Design/ Remedial Action (RD/RA)

RD/RA is anticipated to begin in 1993. Actual initiation is dependant upon regulatory and public considerations throughout the process.

Sharpe Site, Defense Distribution Region West (formerly Sharpe Army Depot) Lathrop, California

(80)

Service: Defense Logistics Agency

Size: 720 Acres

HRS Score: 42.24

Base Mission: Depot for general supplies

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of California

Action Dates: PA completed 1980; SI completed 1983; RI/FS initiated 1984; Placed on NPL 1987; Signed FFA agreement March 1989; Ground water RI/FS completed 1991; Ground water proposed remedial action plan (GRAP) completed January 1992; Draft ground water ROD completed April 1992

Contaminants: VOCs

Funding to Date: $17.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA indicated existence of contamination from past practices. The primary ground water contaminant in some areas is trichloroethylene (TCE), and in other areas, tetrachloroethene. Contamination was identified in the north and south areas encircled by a railroad turnaround and called balloon areas. Solvent waste, mostly TCE-contaminated soil and ground water, was found in the area. The PA recommended that a preliminary survey be conducted of north and south balloon areas, and along the western boundry of the installation.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in July 1984. The primary contaminant in ground water and soil is trichloroethene. Approximately 24,000 cubic yards of TCE-contaminated soil are present. TCE levels of up to 20,000 ug/L have been detected. The State of California and Federal maximum contaminant level (MCL) for TCE is 5 ug/L. The RI indicates the TCE plume has migrated off the facility. Other contaminants, found to a lesser extent and mostly only in the soil, were lead, pesticides, PCBs, and petroleum hydrocarbons.

As of October 1992, as part of PA/SI and RI/FS, Sharpe has installed 211 monitoring wells on and off the installation. Four of these wells have been permanently closed with the approval of the regulatory agencies. The remaining are sampled and tested at least once per quarter for volatile organics.

Remedial Design/ Remedial Action (RD/RA)

Two interim ground water treatment systems (air stripping technology) have been installed to prevent the migration of TCE. The first system went into full operation in March 1987, and the second in October 1990.

Between 1985 and 1991, 51 abandoned underground storage tanks were removed to eradicate the source of potential discharge into the environment.

To date, approximately 775 cubic yards of contaminated soils were removed and several pilot tests and treatability studies have been conducted.

Removal of nine more USTs and the remediation of sites contaminated by USTs are expected to begin in 1993. DDRW is expecting to have a draft final ROD in place by April 1994.

Tinker Air Force Base (81)
Oklahoma City, Oklahoma

Service: Air Force

Size: 5,001 Acres

HRS Score: 42.24

Base Mission: Worldwide repair depot for aircraft, weapons, and engines

IAG Status: Pre-ROD IAG signed 1988

Action Dates: Original PA/SI completed 1982; RI/FS initiated 1983; Placed on NPL 1987

Contaminants: Organic solvents, heavy metals

Funding to Date: $54.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The base is within the North Canadian River Drainage Basin and drains into Soldier, Crutcho and Kuhlman Creeks. It overlays the Garber-Wellington Aquifer. Soldier Creek and Building 3001 make up the NPL site. Two Soldier Creek tributaries carry storm and treated industrial wastes from Building 3001. The main contaminants are organic solvents TCE and 1,2-Dichloroethene previously used for degreasing and aircraft maintenance, and heavy metals (hexavalent chromium) previously used in plating operations.

To date, three drinking water wells and Pit Q-51 within or adjacent to Building 3001 have been taken out of service and plugged. The contamination plume covers 220 acres (all within the base boundary) under Building 3001 and the upper aquifer zones (which are not used for drinking water production). The base and 75,000 people in Midwest City draw water from the lower aquifer.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS phase commenced in September 1983 and has been completed on three wells, Landfill 3, North Fuel Tank Area (NPL site), Pit Q-51 (NPL site), abandoned pits at the Industrial Waste Treatment Plant (IWTP), Fire Training Area 2, and Building 3001. Field investigations have been completed at Landfills 1-4, Landfill 6, Fire Training Area 1, Supernatant Pond, and Industrial Waste Pit 2, Building 3001, and two radioactive waste dump sites. Investigations are underway at the IWTP, Industrial Waste Pit 1, Southwest Tank Area, Area A Refueling Station, 3700 Fuel Yard, four fuel sites, three radioactive waste dump sites, Crutcho Creek, Kuhlman Creek, and the Soldier Creek NPL site.

No off-base contaminant migration has been confirmed to date. A pre-ROD IAG covering the NPL site was signed December 1988.

Remedial Design/ Remedial Action (RD/RA)

The ROD for Building 3001, North Tank Area operable unit, and Pit Q-51 operable unit was signed in 1990. Pit Q-51 was cleaned and plugged in September 1990. The design efforts for the recommended B3001 ground water recovery and treatment system was completed in August 1991.

Landfills 1 and 5 have been capped and the Landfill 6 cap was repaired. Landfill 3 is presently near completion on the capping action.

Documentation recommending no further action has been completed for three wells, Pit Q-51, Fire Training Areas 2 and 4, Facility 1123, three of the five radioactive waste disposal sites, and the industrial waste pits.

Future RA work will include the removal of radioactive waste and the use of innovative solidification/ stabilization techniques at the supernatant pond.

Tobyhanna Army Depot (82)
Tobyhanna, Pennsylvania

Service: Army

Size: 1,293 Acres

HRS Score: 37.93

Base Mission: Logistics for communications/electronics equipment; Largest communications/electronics overhaul facility in Army

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: VOCs, heavy metals

Funding to Date: $6.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI was completed in 1980 and updated in 1988. These initial studies confirmed that there was VOC contamination of both on-post and off-post wells.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in July 1987, addressed VOC contamination in the southeast corner of the depot. Two source areas have been confirmed with one only a few hundred feet from affected off-post wells. The preferred response measures under the FS are passive volatilization for contaminated soils (tilling soils within a specially constructed building); pumping and treating ground water; and providing an alternate water source to affected residents.

As a result of the IAG, a Phase I RI is being performed at 11 additional sites. The field investigation was performed in the 4th quarter FY 1992. The Phase I RI is scheduled to be completed in December 1993.

Remedial Design/ Remedial Action (RD/RA)

The Army provided bottled water for 26 residences and one business from March 1987 through June 1991 at which time a waterline extension from the Depot to the affected residents was completed.

A treatability study has been conducted for the passive soil volatilization technology. The study concluded that soil treatment could be conducted more effectively inside an engineered bubble rather than tilling the soils inside a building. Remedial design for soil cleanup is expected to start in the fall of 1993.

Tooele Army Depot (North Area) (83)
Tooele County, Utah

Service: Army

Size: 44,087 Acres

HRS Score: 53.95

Base Mission: Store and supply ammunition and equipment; Build and repair locomotives, wheeled vehicles, and transport cars

IAG Status: Pre-ROD IAG signed September 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiated 1987

Contaminants: Heavy metals, petroleum/oil/lubricants, PCBs, paint primers, cleaning, plating and explosive wastes

Funding to Date: $44.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historic disposal practices consisted of discharging wastes to evaporation or percolation ponds, detonation and burning, and burial at the demilitarization range. Consequently, ground water was threatened by contaminant migration from the waste sites; plant and animal life in the area also could be affected.

The December 1988 PA/SI identified potential ground water contaminant migration. Five sites presented a significant threat to public health and the environment, including explosives found in the ground water beneath the TNT Washout Pond. Ground water is contaminated with volatiles at the Industrial Waste Lagoon (IWL).

Remedial Investigation/ Feasibility Study (RI/FS)

An environmental survey in 1982 indicated that TCE from the IWL was migrating to the northern boundary on-post. An RI addendum report in 1989 concluded that a plume of ground water contamination containing TCE from the IWL extends off-post approximately 2,500 feet. A site-wide RI/FS was initiated in September 1987. Additional ground water contamination was detected at the Sanitary Landfill and the TNT Washout Pond. These results were published in December 1990.

A Corrective Action Permit was issued by the state in January 1991 and addressed 29 SWMUs. RFI investigative studies have been conducted at 20 SWMUs and studies on the additional 9 are scheduled for early 1993. The first RFI report is scheduled to be available in early 1993. An FFA between the Army, State, and EPA was signed in September 1991. An RI/FS addressing 17 sites was initiated in late 1991. Field investigations were completed in 1992 and the draft RI report is scheduled to be submitted to the regulators in March 1993.

Remedial Design/ Remedial Action (RD/RA)

The IWL was granted interim status under RCRA in 1985. This required installation of monitoring wells, but the previously documented evidence of ground water contamination caused TEAD to enter into a Consent Decree with the State of Utah. As a result, a ground water quality assessment was conducted. The Consent Decree also required TEAD to cease discharging wastewater into the IWL and to close the lagoon. Closure (capping) of the lagoon was completed in 1989 and construction of a ground water pump and treat system (air stripping) was initiated in 1991. The system is scheduled for operation in December 1993.

Tracy Site, Defense Distribution Region West (formerly Tracy Defense Depot) Tracy, California

(84)

Service: Defense Logistics Agency

Size: 448 Acres

HRS Score: 37.16

Base Mission: Store and distribute food, medical, electronic, and industrial/construction equipment; and textiles for Armed Forces in the western U.S. and Pacific

IAG Status: Signed 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Heavy metals, petroleum/oil/lubricants, VOCs, TCE, PCE

Funding to Date: $15.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 32 sites of contamination on-depot with strong contamination migration potential. All 32 sites will be included in the RI/FS investigations. The upper ground water aquifer, both on- and off-depot, is contaminated with both TCE and PCE beyond federal safety standard limits.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986 on 32 sites. In addition to the contaminated upper aquifer, the soil on depot is likewise contaminated. Following the signing of a Federal Facility Agreement in 1991, a second RI/FS was initiated. The first RI/FS has been redefined as OU1 and focuses on the ground water contamination emanating from the northern half of the depot.

The second RI/FS has been designated the Comprehensive Site-Wide RI/FS and will focus on contamination throughout the depot to include an additional 33 solid waste management units (SWMUs), information from 113 monitoring wells, 100+ soil borings, and more than 200 soil vapor probes. These SWMUs have been combined into three additional sites bringing the total to 35.

Remedial Design/ Remedial Action (RD/RA)

An IRA contract, awarded in September 1989, led to the construction of an air stripper to remove volatile organic compound (VOC) contaminants in the ground water. The stripper was installed during the third quarter of 1991. Five extraction wells, three injection wells, and 10 additional monitoring wells were installed as part of this project.

Bottled drinking water is being provided to two off-depot residences, whose domestic wells have been contaminated by VOCs. This action was taken in the first quarter of 1992 when laboratory tests revealed trichloroethene, carbon tetrachloride, and trace amounts of chloroform in the wells.

Two on-depot improperly abandoned water supply wells were located, investigated, and properly abandoned. During the location effort, one undocumented underground gasoline storage tank was located, inspected, and properly removed and disposed of. This effort took place during the third and fourth quarters of 1992.

A removal action involving 49 buried drums and 450 cubic yards of contaminated soil took place during 1992. All drums were inspected and properly disposed of. Contaminated soil receiving further evaluation is expected to be appropriately disposed of prior to second quarter 1993.

Travis Air Force Base (85)
Solano County, California

Service: Air Force

Size: 5,025 Acres

HRS Score: 29.49

Base Mission: Gateway to the Pacific, providing strategic airlift services for troops, cargo, and equipment: west coast terminals for aeromedical evacuation

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Volatile Organic Compounds (VOCs), heavy metals, Polynuclear Aromatic Hydrocarbons (PAH)

Funding to Date: $16.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Travis AFB is primarily agricultural. Industrial operations on base include aircraft and automotive servicing, above and below ground fuel storage and distribution, and facility maintenance and repair.

A PA/SI identified several sites potentially contributing to contamination due to past operations and disposal practices. These sites include old landfills, a closed sewage treatment plant, fire fighting training areas, disposal pits, spill areas, and the storm drainage system. VOCs present in the storm sewer system, particularly TCE, could possibly reach Union Creek. Up to 29 additional areas of concern investigated in 1992 may be added to the Travis IRP, among these is the Point Arena Air Force Station.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS is underway to determine the type and extent of contamination and to identify alternatives for remedial action. Two additional sites were added to the investigation in 1991: the Cyanide Disposal Pit, where approximately 250 pounds of cyanide were buried, probably in 1967; and the Grazing Management Units, where a swelling affliction has been observed in horses. Preliminary analysis indicates that fine-grained alluvial sediments of very low permeability exist beneath the base. Localized buried sand and gravel channels represent likely pathways for contaminant migration. The ground water at Travis AFB contains naturally elevated concentrations of several metals and common anions. The contaminants detected in the ground water include VOCs and metals. Metals and PAHs were detected in the surface water, sediments of the storm sewers, and Union Creek. RI/FS activities in 1992 determined the extent of contamination at 18 sites and identified 7 distinct TCE plumes. In addition, in-depth studies were conducted at over 120 buildings on base to determine if past operations had contributed to base wide contamination. Completion of the RI/FS is expected in 1993.

Remedial Design/ Remedial Action (RD/RA)

Twenty-seven underground storage tanks were removed from various IRP sites at Travis AFB in 1986. The design of an IRA was initiated in 1991 to investigate, intercept and clean up floating fuel products in the ground water table from two BX gas stations. The engineer evaluation/cost analysis for the project was completed in 1992. Additional RD/RA activities will be determined by a ROD anticipated for early 1994.

Treasure Island Naval Station—Hunters Point Annex (86)

San Francisco, California

Service: Department of the Navy

Size: 965 Acres

HRS Score: 48.77

Base Mission: Support Pacific Fleet (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1990

Action Dates: RI/FS initiated 1987; Placed on NPL 1989

Contaminants: Paints, solvents, fuels, acids, bases, heavy metals, PCBs, asbestos, phenols, polyaromatic hydrocarbons, VOCs

Funding to Date: $42.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

Formerly the Hunters Point Naval Shipyard, Hunters Point Annex was established in 1869 as the first dry dock on the Pacific Coast. The Navy purchased the installation in 1939 and leased it to Bethlehem Steel Company. The Navy operated Hunters Point Annex as a shipbuilding and repair facility from 1941 until 1976. Triple A Machine Shop then leased the facility from 1976 to 1986 and subleased numerous buildings to private tenants. Testing in 1987 detected benzene, PCBs, toluene, and phenols in onsite ground water. A bottling company draws ground water from a spring approximately one mile from Hunters Point Annex. Offshore sediments contain elevated levels of heavy metals and PAHs. Area surface waters are used for recreational activities, commercial navigation, and fishing.

To date, the RI/FS has included 26 sites. Site inspection will be conducted for an additional 38 sites. Four removal actions are planned for 1993, including site treatment, decontamination, and waste removal.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC was formed in 1988 and members include representatives from COMNAVBASE San Francisco; Treasure Island Naval Station; Western Division, Naval Facilities Engineering Command; California Department of Toxic Substances Control, California Regional Water Quality Control Board; Bay Area Air Quality Management District; EPA Region IX; the City and County of San Francisco; NOAA; Department of Interior, and a public representative appointed by the Mayor of San Francisco.

Future RI/FS at Hunters Point will be conducted by geographic panels. Interim Remedial Actions will be implemented for the existing Operable Units. Completion of RI/FS work for all sites is expected in 1996.

Remedial Design/ Remedial Action (RD/RA)

A removal action was implemented in 1986 to clean up PCBs. Removal of asbestos was undertaken and completed in 1990. RD/RA work will begin after completion of RI/FS activities.

Twin Cities Army Ammunition Plant (87)
New Brighton, Minnesota

Service: Army

Size: 2,560 Acres

HRS Score: 59.16

Base Mission: Small arms and projectile casing manufacture

IAG Status: Pre-ROD IAG signed 1987 with EPA and State of Minnesota

Action Dates: PA/SI completed 1988; RI completed 1991; FS initiated 1991; Placed on NPL 1982

Contaminants: VOCs, heavy metals, solvents, acids and caustics, fuels, cleaners, paints, explosives

Funding to Date: $39.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sources located on the Twin Cities Army Ammunition Plant (TCAAP) have contaminated ground water primarily with VOCs. The contamination affects water supplies for the cities of New Brighton and St. Anthony, located 2.5 and 4.5 miles downgradient, respectively. The PA/SI verified the presence of 14 potentially contaminated sites. Concurrent field investigations conducted since 1981 verified three major sources of regional ground water contamination. Site D is a former series of earthen impoundments used for industrial waste disposal. Site G is a former landfill used for building and industrial waste disposal. Site I (Building 502) is the area where industrial operations introduced VOCs to the ground water system. Two other sites have contributed to perched ground water contamination. These sites consist of Site A, a former disposal area for industrial waste, and Site K (Building 103), where industrial operations introduced VOCs to the ground water system. The remaining 14 sites have not contributed significantly to ground water contamination at TCAAP.

Remedial Investigation/ Feasibility Study (RI/FS)

Alliant Tech Systems, Inc., formerly Honeywell, Inc., an industrial tenant of TCAAP, and the Department of the Army have installed approximately 300 monitoring wells both on and off the plant to define the magnitude and extent of ground water contamination. The FFA requires the DA to complete an RI on TCAAP and requires EPA to conduct an investigation of off-plant areas. These efforts were completed in 1991. The FS was initiated by the Army in August 1991. The FS is divided into three operable units: off-TCAAP north plume (OU1), on-TCAAP ground water and several areas (OU2), and off-TCAAP south plume (OU3). A ROD for the OU3 final remedy was signed in September 1992.

Remedial Design/ Remedial Action (RD/RA)

A regional ground water treatment system has been installed to extract and treat ground water, prevent contaminant migration beyond plant boundaries, and contain highly contaminated ground water within the plant interior.

Additional efforts to preclude ground water contamination include installation of two ISV systems at Sites D and G, ground water treatment at Site I, incineration of contaminated soils, and provision of contaminated soil storage facilities. Efforts also are being conducted at Sites A and K to prevent contamination from migrating within the perched ground water system.

To address contamination beyond the plant boundaries, the Army provided granular activated carbon municipal water treatment facilities to the cities of New Brighton and St. Anthony.

Approximately 3.7 billion gallons of contaminated ground water have been treated and over 100 tons of contaminants removed.

Umatilla Army Depot
Hermiston, Oregon

(88)

Service: Army

Size: 19,729 Acres

HRS Score: 31.31

Base Mission: Ammunition storage

IAG Status: Pre-ROD IAG signed October 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS initiated 1989

Contaminants: Metals, red fuming nitric acid, pesticides, RDX, nitrates, TNT, TNB, HMX, DNT isomers

Funding to Date: $20.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified and targeted several major contaminant sources for RI/FS work. These areas contained explosive wastes and UXO. Ground water under the washout lagoons was contaminated with cyclonite (RDX), nitrates, TNT, TNB, HMX, and DNT. An enhanced PA in support of base closure activities was prepared concurrently with the RI/FS work plan under the IAG. The enhanced PA was submitted in April 1990.

Remedial Investigation/ Feasibility Study (RI/FS)

A Phase I RI determined the washout lagoons had contaminated the alluvial aquifer with TNT, RDX, HMX, TNB, DNT, and nitrates. In addition, the shallow basalt aquifer contained very trace quantities (approximately 1 ppb) of explosives. Several SWMUs, including the deactivation furnace, active and inactive landfills, the ammunition demolition area, and several septic tanks, showed various industrial and explosive contaminants. A Phase II RI was initiated in August 1989. Work being conducted under the IAG covers 55 sites; 22 in the ammunition demolition area. RI field work was initiated in May 1990 and the RI was completed in August 1992. Feasibility studies for four operable units are ongoing. Field work for asbestos and radon assessments in support of the base closure mission was initiated in 1990.

A supplemental RI/FS contract addressing remaining sites was awarded in September 1991. The need for a contract modification delayed the field work, which was well underway in September 1992. Another contract modification, to further investigate the complex ground water contamination, was awarded in September 1992. No Action proposed plans for the landfills operable units were finalized in FY 1992.

Remedial Design/ Remedial Action (RD/RA)

An expedited RI/FS was conducted for the washout lagoons leading to a ROD in September 1992 that selected the innovative technology of composting. Stabilization of lead-contaminated soil at the deactivation furnace is the subject of a draft ROD prepared in FY 1992.

Warminster Naval Air Warfare Center Aircraft Division (89)

Warminster Township, Pennsylvania

Service: Navy

Size: 921 Acres

HRS Score: 57.93

Base Mission: Research and development for naval aircraft systems, antisubmarine warfare systems, and software

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1981; Proposed for NPL 1986; RI/FS initiated 1988

Contaminants: VOCs, metal plating wastes, painting residues, PCB-contaminated waste oils, fuels, solvents, asphalt, coolants

Funding to Date: $1.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS), equivalent to a PA, and a Confirmation Study (CS), equivalent to an SI, for Warminster Naval Air Warfare Center (NAWC) were completed in June 1985, identifying nine sites as potentially contaminated. After the CS, Site 09 was closed out as not being contaminated. The other eight sites were recommended for further study under a Remedial Investigation/ Feasibility Study (RI/FS). Contamination from heavy metals and solvents of local drinking water wells and ground water was the primary concern for these sites.

A Technical Review Committee was formed in April 1988. Meetings are held every six to eight weeks or as necessary to attend to the current business. An administrative record was established at the same time. The Community Relations Plan was completed in FY 1990 and is updated on an "as required" basis.

Remedial Investigation/ Feasibility Study (RI/FS)

Phase I RI was completed in January 1991. Phase II RI began in October 1991 for Sites 01-08 and is expected to be completed in FY 1993. All eight sites are being assessed under an FS concurrently with the RI Phase II. The FS should be completed also in FY 1993. At this time, it is expected that Site 07 may be closed out and Sites 04 and 08 may only be recommended for long-term monitoring (LTM).

The installation was proposed for the National Priorities List (NPL) in 1986 with a Hazard Ranking System (HRS) Score of 57.93. A Pre-Record of Decision (ROD) was signed on October 4, 1989. A Federal Facility Agreement (FFA) was signed between the Department of the Navy and Environmental Protection Agency (EPA) on September 20, 1990.

Remedial Design/ Remedial Action (RD/RA)

RD should start in FY 1993 for Sites 01-03, 05, and 06 with an expected completion date of FY 1994. The RA will follow in FY 1995 with an anticipated completion in FY 1996. LTM will probably be recommended for these sites pushing the site closeout into FY 1998 and after.

Whidbey Island Naval Air Station (90)
(Ault Field & Sea Plane Base)
Whidbey Island, Washington

Service: Navy

Size: 7,000 Acres

HRS Score: 47.58 (Ault Field)
39.64 (Sea Plane Base)

Base Mission: Training and operations center for bomber squads; Center for USN and USMC Reserve training in the Pacific Northwest

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1984; Placed on NPL 1990; RI/FS initiated 1988

Contaminants: VOCs, petroleum/oil/lubricants

Funding to Date: $17.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

Whidbey Island Naval Air Station occupies four separate areas on Whidbey Island: Ault Field north of Oak Harbor; Seaplane Base east of Oak Harbor; the Outlying Field near Coupeville; and Lake Hancock Target Range.

An Initial Assessment Study (equivalent to a PA) completed in September 1984 identified 51 pas spill and/or disposal sites. Of the 51 total sites, 35 were recommended for further study or mitigating actions, and 16 were recommended for no further action. The sites recommended for further action potentially involve soil, ground water, sediment, and shellfish contamination. The 16 sites were recommended for no further action because no migration or exposure pathways were found or insignificant contaminant concentrations were detected.

Remedial Investigation/ Feasibility Study (RI/FS)

In February 1990, Whidbey Island Naval Air Station was listed on the National Priorities List. The Federal Facility Agreement for areas including Seaplane Base and Ault Field was signed by the Department of the Navy on October 17, 1990. The FFA grouped individual areas as sites into four operable units. In addition, the FFA also specified that a number of areas undergo more extensive sampling programs, as extended SIs, for potential inclusion in a RI/FS.

All of the RI/FS effort for OUs 1-4 are expected to be completed in 1993. The RI/FS for OU1 is anticipated to recommend capping of the landfill. The recommendations for OU2 and OU3 are yet not known. The RI/FS for OU4 is anticipated to recommend fencing combined with long-term monitoring.

Remedial Design/ Remedial Action (RD/RA)

On April 28, 1992, the Department of the Navy signed an Interim ROD with EPA Region X and the State of Washington for an Interim Remedial Action (IRA) at OU1. The IRA will address the primary risk posed to the public by controlling the spread of a contaminated plume of ground water. The IRA will extract and treat ground water using air stripping to halt advancement of the plume. Treated water will be reinjected into the aquifer from which it was drawn. The IRA is expected to be completed in late 1993.

Efforts are underway to address contamination of public water supplies by connecting 13 private residences or systems to either the City of Oak Harbor's or the Navy's water main. To date, two residences and a mobile home park have been connected to the public water supply.

Williams Air Force Base (91)
Chandler, Arizona

Service: Air Force

Size: 4,127 Acres

HRS Score: 37.93

Base Mission: Pilot training; Aircraft and ground equipment maintenance (Scheduled for closure)

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1986; Scheduled for completion December 1994; Placed on NPL November 1989; Scheduled for closure September 1993

Contaminants: Waste solvents, fuels and lubricants, heavy metals

Funding to Date: $13.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

Irrigated farmland and desert surround Williams AFB. Past disposal practices have contaminated soils with heavy metals and ground water with petroleum products. The Air Force has completed an initial assessment and the potentially contaminated areas include a past fire protection training area, drainage systems, and landfill and spill areas.

Remedial Investigation/ Feasibility Study (RI/FS)

A work plan has been developed for an RI/FS to determine the type and extent of contamination and to identify alternatives for remedial action. Field investigations are underway.

Remedial Design/ Remedial Action (RD/RA)

The Southwest Draining System was remediated in 1988 by installing a soil cement and concrete cap on the upper 350 feet of the ditch. This action was agreed to by State of Arizona regulatory officials.

Monitoring wells approximately 350 feet deep have been installed at the liquid fuels storage area to determine the extent of vertical migration of leaked fuel. Shallow wells approximately 250 feet deep have been installed to plot the extent of this plume. Pump tests have been conducted to gather data needed for remedial design of a proposed pump and treat facility. Continuous fuel recovery has been started.

A storage tank was removed during 1991 from the electroplating shop. Removal of drums was also completed during that year at the pesticide burial area.

Two operable units (OU) have been established. OU2 is the former liquid fuel storage area and is the first to be considered. OU1 is the final remedy for the remediation of all sites. Two Proposed Plans and two RODs will be prepared.

A draft of the ROD for OU2 was issued July 1992 and for OU1 by September 1993. The RD for OU2 is expected April of 1994 and RA April 1995. RD for OU1 expected November 1994 and RA November 1995.

The Draft Remedial Investigation Report for OU2 was published in 1991. The Draft Feasibility Study and the Draft Proposed Plan have been submitted for regulatory review. A pilot study/demonstration project is underway at OU2. Two horizontal wells and a large diameter well will be compared to determine the efficiency of jet fuel removal from the shallow water table.

Wright-Patterson Air Force Base (92)
Dayton, Ohio

Service: Air Force

Size: 8,511 Acres

HRS Score: 57.85

Base Mission: Headquarters to Air Force Materiel Command, Aeronautical Systems Center and Air Force Institute of Technology; Medical Center

IAG Status: Pre-ROD IAG signed March 1991

Action Dates: RI/FS initiated 1989; Placed on NPL 1989

Contaminants: Waste oil and fuels, acids, plating wastes, solvents, pesticides, batteries, radioactive wastes

Funding to Date: $94.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past Air Force activities in support of operational missions have created 63 unlined waste disposal areas throughout the base, including landfills, spill sites, fire training areas, and coal storage piles. As a result, contamination of Dayton and the base for drinking water has occurred.

Known sites were rated in 1982 during the first phase of the IRP. Twenty-four sites located on the base contained hazardous material.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS contract was awarded in November 1989. The RI/FS for all sites is currently scheduled to be completed in 1998. Landfills 8 and 10 have been the highest concern due to their proximity to the Woodland Hills residential area. Both landfills were a trench and cover operation for disposal of general refuse and chemical wastes. Ground water in the vicinity of Landfill 8 is contaminated with benzene and trichloroethylene (TCE). Landfill 10 is contaminated with volatile organic compounds (VOCs). However, complications have arisen with landfill subsidence, gas generation and venting, and seepage of leachate. The RI/FS for these sites is scheduled for completion by April 1993. A focused RI/FS for Source Control was initiated in January 1992. The base began four additional RI/FS projects at the next highest priority operable units in 1992. Also in 1992 a Basewide Monitoring Program was initiated. In June 1987, a hydrogeological assessment of the strata underlying the base was initiated to gain an understanding of ground water movement and the direction of contaminant migration. The completed study provides a technical foundation for future base-wide IRP activities. Regional ground water flows in a southwesterly direction toward the City of Dayton's drinking water well fields. The existence of permeable soils in the area exacerbates this concern. The IAG with the USEPA Region V was signed on March 21, 1991. The base is under an Administrative Order of Consent (February 1988) which specifies site RI and cleanup processes.

Remedial Design/ Remedial Action (RD/RA)

Drinking water from base wells is being treated for VOC contamination. In 1991, the base initiated a Removal Action along the base boundary to intercept and treat ground water found to be contaminated with TCE flowing in the direction of the City of Dayton's well fields. The permanent system became fully operational in 1992. Phase I to investigate/design the removal of the source of fuel contamination in the area of Spill Sites 2 and 3 was initiated in May 1992. The construction of a dual pump product recovery and ground water treatment system will follow in early 1993.

Yorktown Naval Weapons Station (93)
Yorktown, Virginia

Service: Department of the Navy

Size: 10,624 Acres

HRS Score: 50.00

Base Mission: To provide logistic, technical, and material support to the Fleet; maintain and operate an explosive ordnance outloading facility and provide homeport services

IAG Status: FFA initiated and expected to be signed 1993

Action Dates: PA completed 1984; SI finalized 1991; RI/FS initiated 1991; Placed on NPL 1992

Contaminants: Asbestos, waste oil, batteries, paint thinners, degreasers/varnishes, solvents, explosives, PCBs, acids, heavy metals

Funding to Date: $3.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

All of the Installation Restoration sites being investigated are located adjacent to, or hydrologically connected to, surface water bodies that are tributaries to the York River. This estuarine system is commercially and environmentally significant for fisheries production. As a result, the environmental studies at the Yorktown Naval Weapons Station are designed to define the impacts to this ecosystem, and to define the risks to human health associated with contact with the water bodies and consumption of aquatic life supported by these waters.

An Initial Assessment Study or PA was completed in July 1984. A total of 19 potentially contaminated sites was identified. Fifteen of these sites were the subject of an SI conducted from 1989 to 1991.

Additional RI efforts were recommended for 14 of the 15 sites under confirmation studies. A new site, Site 21, was discovered in November 1990 which contained batteries and drums. This site was recommended for inclusion in the RI/FS. During the summer of 1992, EPIC photograph interpretation and site explorations revealed several additional previously unknown sites. Future SIs are planned for these sites if warranted.

Remedial Investigation/ Feasibility Study (RI/FS)

In anticipation of NPL status, the Navy began a proactive community relations program in July 1991. Documents prepared for public affair's use were a Community Relations Plan, color information brochures, a slide show, and photo albums for the Navy, the regulators, and for the information repositories. The Yorktown Naval Weapons Station's Public Affairs Officer has established an outstanding report with the community and has experienced very little public concern.

The RI field work for 16 sites began in April 1992. The sixteen sites consisted of the 14 sites originally recommended for additional studies, one additional site that, after further review, required additional studies, plus the new Site 21. Upon completion of round one of the RI, sites will either be separated into operable units (OUs) for additional RI effort, moved into the FS phase, or recommended for no further action.

Remedial Design/ Remedial Action (RD/RA)

Documents are being prepared in 1992 for a removal action at three sites. This action will rid the sites of surficial contamination, thus mitigating the migration of additional contaminants into the environment. The removal action will be conducted in 1993. Two other removal action work plans are scheduled to be started in 1993. For the OUs, RD/RA work will begin after completion of the RI/FS.

Yuma Marine Corps Air Station (94)
Yuma, Arizona

Service: Navy

Size: 3,000 Acres

HRS Score: 32.24

Base Mission: Tactical aircrew combat training

IAG Status: Pre-ROD IAG signed 1992

Action Dates: PA completed 1985; SI completed December 1990; RI/FS initiated 1990; Placed on NPL 1990

Contaminants: VOCs, waste fuels, oils, degreasers, solvents, paints, PCBs, pesticides, herbicides, photographic chemicals

Funding to Date: $2.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Ground water is a potable water source for Yuma Marine Corps Air Station (MCAS), the City of Yuma, and for industrial and agricultural purposes. Past disposal practices contaminated soils and ground water. A PA/SI identified 12 potentially contaminated sites, and recommended that two sites be studied further to confirm contamination.

The confirmation study for these two sites was completed in early 1988. In response to a State of Arizona request made in July 1988, 11 of the original 12 IAS sites and two additional sites were investigated further as a part of an SI completed in December 1990. To date, 18 sites have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed and the first meeting was held in April 1990. Members include representatives from the City of Yuma; the Arizona Department of Environmental Quality; EPA Region IX; Yuma MCAS; Southwest Division, Naval Facilities Engineering Command; and the public. Development of the RI/FS work plan began in November 1990.

Yuma MCAS was listed on the NPL in February 1990. Subsequently, EPA assigned a separate remedial project manager for the base. FFA negotiations with EPA and the State of Arizona were initiated and completed in 1990. The FFA was signed by all parties in January 1992.

Remedial Design/ Remedial Action (RD/RA)

Although no RD/RA activities were conducted in 1992, removal actions will be considered if an imminent threat is identified during the RI/FS. RD/RA activities are planned for four sites in 1993.

Appendix C
Status of IRP Installations

This Appendix to the Annual Report includes three tables that summarize the status of activities at all DoD installations included in the IRP by the end of FY 1991.

Table C-1 summarizes IRP site status by state, DoD component (Army, Navy, Air Force, and Defense Logistics Agency), and installation. Table C-2 provides a status summary by DoD component.

The status abbreviations used in this Appendix are as follows:

C	–	Number of sites for which a particular study or action has been completed
U	–	Number of sites with a particular study or action underway
F	–	Number of sites scheduled to have a study or action performed in the future
IRA	–	Number of sites with an interim remedial action complete or underway; numbers of actions are given in parenthesis
RC	–	Number of sites where IRP actions are deemed complete and the site is not a threat to health or the environment.
RIP	–	Number of sites where the final RA is functioning properly and performing as designed.
SC	–	Number of sites where the response is complete and if required, concurrence has been received from regulatory agencies.

Installation status is designated as follows:

Italicized	–	The installation is listed on the NPL
●	–	The installation has a signed IAG
♦	–	The installation is proposed for listing on the NPL.
■	–	The installation is scheduled for closure.

It should be noted that the installation site counts in Appendix C will not necessarily sum to equal the total number of sites in the first column on the left of the table. This is due to the fact that, at larger, more complex installations, various sites on the installation can be in different phases of the program at the same time.

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALABAMA																									
ARMY																									
AFRC Birmingham	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Cullman	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
AFRC Gadsden	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Alabama AAP ● ■	36	36	0	0	0	36	0	0	0	5	31	0	0	9(9)	1(1)	4	3	29	4	0	32	2	0	2	0
Anniston Army Depot ●	44	44	0	0	0	29	15	0	0	0	29	1	0	7(12)	0	7	0	7	0	0	12	0	0	0	0
Coosa River Storage Annex (Anniston) ■	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort McClellan	60	60	0	0	43	0	17	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	43	43
Fort Rucker	105	105	0	0	0	105	0	0	67	26	13	0	13	0	0	0	12	13	0	0	26	0	0	80	80
Phosphate Dev Works	27	27	0	0	0	26	0	0	26	1	0	0	0	0	0	0	1	0	0	0	1	0	0	26	25
Redstone Arsenal	158	158	0	0	0	158	0	0	68	0	23	67	0	0	0	0	10	0	0	0	10	0	0	68	68
USARC Abbeville	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Anniston	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Beltline	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Birmingham 01	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Birmingham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Cropwell (ASF 155)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Dothan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALABAMA (Continued)																									
ARMY (Continued)																									
USARC Elba	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Enterprise	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Foley	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Rucker (ASF 157)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Fort Rucker (ECS 143)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Gadsden	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Holt	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Huntsville (Patton Rd)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Jasper	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lincoln (Talladega)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Marion, AL	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Mobile (Wright)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Montgomery (Moniac)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Montgomery (Screws)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Opelika	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALABAMA (Continued)																									
ARMY (Continued)																									
USARC OPP	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Sheffield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Troy	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Tuscaloosa	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Tuskegee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
ARMY TOTALS	581	581	0	0	191	355	32	2	161	33	96	75	13	16(21)	1(1)	11	26	49	4	0	81	2	0	367	364
AIR FORCE																									
Birmingham MAPT	13	13	0	0	7	6	0	0	1	1	4	0	0	0	0	1	4	0	0	1	4	0	0	8	8
Dannelly Field ANGB	9	9	0	0	0	9	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gunter AFB	7	7	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0
Hall AGS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Martin Gadsden	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maxwell AFB	28	28	0	0	0	22	1	0	0	15	1	1	5	0	0	6	2	2	6	3	1	4	0	9	9
Montgomery AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	63	61	2	0	8	41	3	0	1	16	7	2	5	0	0	7	6	3	6	5	6	4	0	18	17
ALABAMA TOTALS	644	642	2	0	199	396	35	2	162	49	103	77	18	16(21)	1(1)	18	32	52	10	5	87	6	0	385	381

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALASKA																									
ARMY																									
Fort Greely	28	28	0	0	0	27	1	0	0	0	0	13	0	1(2)	0	0	0	1	0	0	0	0	0	0	0
Fort Richardson	34	34	0	0	0	33	1	0	0	0	3	27	0	3(4)	0	1	0	0	0	1	3	0	0	0	0
Fort Wainwright ●	58	58	0	0	14	22	20	1	4	1	3	12	0	17(20)	2(2)	3	0	0	10	2	0	7	0	25	0
Gerstle River Test Site	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	125	125	0	0	14	87	22	1	4	1	6	52	0	21(26)	2(2)	4	0	1	10	3	3	7	0	25	0
DEPARTMENT OF NAVY																									
FLTSURSPTCMD DET 1 Amchitka	5	4	0	1	0	0	0	4	0	0	0	5	0	4(4)	0	0	0	4	0	0	5	0	0	0	0
Narl Point Barrow	13	13	0	0	5	8	0	0	2	0	6	0	0	1(1)	0	0	0	6	0	0	6	0	0	7	7
NAS Adak	69	69	0	0	10	23	7	1	13	0	8	7	0	4(5)	6(6)	0	0	14	2	0	19	2	0	25	0
NOSC Special Areas - Cape Pr. Wales	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	0
NOSC Special Areas - St. Lawrence	4	4	0	0	0	4	0	0	0	0	0	4	0	3(3)	0	0	0	4	0	0	4	0	0	0	0
NOSC Special Areas - Tin City	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
DEPARTMENT OF NAVY TOTALS	95	94	0	1	15	35	11	5	15	0	14	20	0	12(13)	6(6)	0	0	32	2	0	38	2	0	32	7

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALASKA (Continued)																									
AIR FORCE																									
Alaskan LRRS	49	49	0	0	0	49	0	0	14	35	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
Anvil Mountain RRS	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
Bear Creek RRS	4	4	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver Creek RRS	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bethel RRS	11	11	0	0	0	11	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Big Mountain RRS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Campion AFS	8	8	0	0	0	8	0	0	0	0	8	0	0	0	1(1)	0	0	8	0	0	8	0	0	0	0
Canyon Creek RRS	6	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cape Lisburne LRRS	6	6	0	0	0	6	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6	6
Cape Newenham LRRS	7	7	0	0	0	7	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Cape Romanzof LRRS	15	15	0	0	0	15	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chena River Research	2	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
Clear AFS	16	16	0	0	1	15	0	0	13	0	0	0	0	0	0	0	0	0	2	0	0	2	0	16	16
Cold Bay LRRS	6	6	0	0	0	6	0	0	1	3	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2
Duncan Canal RRS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Eielson AFB ●	64	64	2	0	1	47	16	0	15	7	27	0	2	9(9)	1(1)	2	2	0	3	3	0	3	0	22	0
Elmendorf AFB ●	70	63	11	0	0	63	7	0	1	29	37	0	8	0	2(2)	5	15	0	5	5	0	2	0	11	0
Fort Yukon LRRS	5	5	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALASKA (Continued)																									
AIR FORCE (Continued)																									
Galena Airport	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	0	0	10	0	0	10	0	0	0	0
Gold King Creek RRS	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Granite Mountain RRS	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Indian Mountain Research	3	12	0	0	0	11	0	0	0	0	11	0	0	0	0	0	0	10	0	0	10	0	0	0	0
Indian Mountain Research Site	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalakaret Creek RRS	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King Salmon Airport	22	22	0	0	0	22	0	0	0	0	22	0	0	3(3)	0	0	0	0	0	0	0	0	0	0	0
Kotzebue LRRS	12	12	0	0	0	12	0	0	0	12	0	0	2	0	0	0	2	0	0	4	0	0	0	2	2
Kulis ANGB	2	2	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Murphy Dome LRRS	8	8	0	0	0	8	0	0	0	0	0	8	0	0	0	0	0	8	0	0	8	0	0	0	0
Naknek Recreation Camp I	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nikolski RRS	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North River RRS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ocean Cape RRS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pillar Mountain RRS	2	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Port Heiden RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
Shemya AFB	48	33	15	0	0	33	15	0	0	15	2	0	0	2(2)	0	4	0	0	4	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ALASKA (Continued)																									
AIR FORCE (Continued)																									
Smugglers Cove RRS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sparrevohn AFS	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tatalina LRRS	13	13	0	0	0	13	0	0	11	0	0	2	0	0	0	0	0	0	0	0	0	0	0	11	11
Tin City LRRS	12	12	0	0	0	12	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
Unalakaleet RRS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
West Nome Tank Farm	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	442	411	32	5	6	382	48	3	68	120	134	12	19	14(14)	4(4)	11	20	43	14	15	43	7	0	101	64
DEFENSE LOGISTICS AGENCY																									
DFSP Anchorage	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
DFSP Fairbanks	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
DFSP Whittier	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	4	4	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0
ALASKA TOTALS	666	634	32	6	35	508	81	9	87	121	158	84	19	47(53)	12(12)	15	20	80	26	18	88	16	0	158	71

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ARIZONA																									
ARMY																									
Fort Huachuca	56	56	0	0	0	56	0	0	27	6	22	1	0	0	0	0	6	20	0	0	25	0	0	27	27
Navajo Army Depot ■	55	55	0	0	0	55	0	0	11	0	1	40	0	0	1(1)	0	0	0	0	0	2	0	0	11	11
USARC Douglas	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Phoenix	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Phoenix 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Tucson	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Yuma Proving Ground	41	41	0	0	0	40	1	0	32	0	3	2	0	0	1(2)	0	0	0	2	1	1	2	0	34	34
ARMY TOTALS	171	171	0	0	19	151	1	0	70	6	26	43	0	0	2(3)	0	6	20	2	1	28	2	0	91	91
DEPARTMENT OF NAVY																									
MCAS Yuma ●	19	19	0	0	0	14	0	0	0	0	18	1	0	0	0	0	0	18	0	0	19	0	0	0	0
Naval Observatory Station Flagstaff	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NCCOSC Sentinel	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	4	0	0	4	0	0	0	0
DEPARTMENT OF NAVY TOTALS	25	25	0	0	0	14	4	1	0	0	18	5	0	0	0	0	0	22	0	0	23	0	0	0	0
AIR FORCE																									
Air Force Plant 44	13	13	0	0	0	13	0	0	0	4	6	0	0	1(1)	0	0	0	0	1	0	0	0	2	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ARIZONA (Continued)																									
AIR FORCE (Continued)																									
AJO AFS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alcoa AGS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Davis Monthan AFB	46	44	0	2	1	43	0	2	23	13	1	4	0	0	0	12	1	3	5	8	4	5	0	29	29
Goldwater Range	41	41	0	0	21	0	0	10	0	0	0	10	0	0	0	0	0	10	0	0	10	0	0	21	21
Luke AFB ●	31	32	0	0	4	24	0	1	3	3	2	8	0	0	1(1)	2	0	12	2	2	9	1	0	8	0
Phoenix/Humboldt Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sky Harbor AGS	6	6	0	0	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tucson IAPT	8	2	0	6	0	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0
Williams AFB ● ■	13	13	0	0	0	13	0	0	1	7	4	0	4	3(3)	0	0	1	0	0	2	0	0	0	5	0
AIR FORCE TOTALS	161	152	0	8	27	95	6	13	27	29	18	22	4	3(3)	1(1)	16	2	25	8	14	23	6	2	64	50
ARIZONA TOTALS	357	348	0	8	46	260	11	14	97	35	62	70	4	3(3)	3(4)	16	8	67	10	15	74	8	2	155	141
ARKANSAS																									
ARMY																									
AFRC North Little Rock (Pike)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Fort Chaffee	40	40	0	0	0	40	0	0	18	6	0	3	5	0	4(4)	0	0	1	8	0	2	8	0	31	19
Pine Bluff Arsenal	72	72	0	0	18	51	0	0	17	31	0	0	1	0	0	30	0	0	35	0	1	35	0	71	71

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ARKANSAS (Continued)																									
ARMY (Continued)																									
USARC Arkadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Blytheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Camden	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Conway	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC El Dorado (02)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC El Dorado (Garrett)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fayetteville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fort Chaffee (1368)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Chaffee (241)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Chaffee (2465)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Fort Chaffee (ECS 15)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Fort Chaffee (NCO Academy)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fort Smith	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Harrison	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Hot Springs	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Jonesboro	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Little Rock (ASF 19)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ARKANSAS (Continued)																									
ARMY (Continued)																									
USARC Little Rock (Finkbeiner)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Little Rock (Terry)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Nashville, AR	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Pine Bluff	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Russellville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Texarkana 01	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Texarkana 02	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC West Memphis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
ARMY TOTALS	228	228	0	0	133	91	0	1	35	37	0	3	6	0	4(4)	30	0	1	43	0	3	43	0	217	205
AIR FORCE																									
Eaker AFB ■	12	12	0	0	0	10	0	0	1	2	8	0	0	0	0	0	1	8	0	0	8	0	0	1	1
Fort Smith MAP	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Little Rock AFB	25	25	0	0	0	25	0	0	4	3	0	0	0	0	0	1	0	0	1	0	0	1	0	5	5
AIR FORCE TOTALS	38	38	0	0	1	35	0	0	5	5	8	0	2	0	0	1	1	8	1	0	8	1	0	7	6
ARKANSAS TOTALS	266	266	0	0	134	126	0	1	40	42	8	3	6	0	4(4)	31	1	9	44	0	11	44	0	224	211

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA																									
ARMY																									
AFRC Concord	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Fresno	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Los Alamitos (ASF 28A)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Camp Roberts	48	48	0	0	0	48	0	0	0	0	0	29	0	0	0	0	0	0	1	0	1	0	0	0	0
Fort Hunter Liggett	24	24	0	0	0	24	0	0	0	2	0	1	0	0	0	1	0	4	0	1	4	0	0	0	0
Fort Irwin	36	36	0	0	0	36	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Ord ● ■	42	42	0	0	0	41	0	0	0	1	41	0	0	1(2)	0	1	0	40	0	0	41	0	0	0	0
H.F. Radio Receiver, Santa Rosa	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hamilton Army Air Field ■	19	19	0	0	1	18	0	0	1	1	11	0	0	0	0	0	0	16	0	1	16	0	0	2	2
Oakland Army Base	7	7	0	0	0	7	0	0	5	0	2	0	0	2(2)	0	0	0	0	0	0	0	0	0	5	5
Presidio of Monterey	12	12	0	0	0	12	0	0	9	0	0	2	0	0	0	0	1	0	0	0	1	0	0	9	0
Presidio of San Francisco ■	47	47	0	0	0	47	0	0	5	0	41	1	0	2(3)	3(4)	0	0	0	0	0	0	0	0	5	0
Rio Vista RES Training Area	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Riverbank AAP ●	11	11	0	0	0	11	0	0	0	5	6	0	0	2(2)	0	1	2	0	0	0	3	0	0	0	0
Sacramento AD ● ■	15	15	0	0	0	15	0	0	0	5	10	0	0	0	0	5	2	0	3	3	1	2	1	2	0
SAT COM	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sierra Army Depot	35	35	0	0	0	35	0	0	16	0	11	8	0	0	0	0	0	3	0	0	3	0	0	16	16

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
ARMY (Continued)																									
USARC Bakersfield	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Bell (AMSA 15)	22	22	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	22
USARC Camp Pendleton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Chico	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Clovis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC El Monte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fort Ord (AMSA 14)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Fresno (AMSA 14-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Long Beach	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Los Alamitos (ECS 16)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Los Angeles 01	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Los Angeles 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Modesto	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Mountain View	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Norco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Pasadena, CA	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC San Bernardino (AMSA 19G)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
ARMY (Continued)																									
USARC San Diego	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC San Jose (AMSA 12)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC San Pablo	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Santa Ana	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Santa Barbara	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Santa Rosa	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Stanton (Garden Grove)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Sunnyvale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Upland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Vallejo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Van Nuys	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Van Nuys Maintenance Shop	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	497	497	0	0	194	296	0	6	36	14	122	79	0	7(9)	3(4)	8	5	63	4	5	70	2	1	232	216
DEPARTMENT OF NAVY																									
CBC Port Hueneme	25	25	0	0	3	7	13	0	5	0	1	13	0	2(2)	2(7)	0	1	14	1	0	15	1	0	9	9
Chollas Heights Radio Transmitter	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
DoD Housing Facility, Novato	1	0	1	0	0	0	0	0	0	0	0	1	0	1(1)	0	0	0	0	0	0	1	0	0	0	0
FASOTRAGRUPACDET Warner Springs	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
FASWTC PAC San Diego	3	1	2	0	0	0	0	1	0	0	0	3	0	1(1)	0	0	0	1	0	0	3	0	0	0	0
FCTC PAC San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
MCAGCC 29 Palms	30	29	1	0	0	16	0	12	0	0	0	28	0	0	0	0	0	28	0	0	28	0	0	0	0
MCAS El Toro ●	24	24	0	0	0	0	0	0	0	0	23	1	0	5(7)	1(1)	0	0	23	0	0	24	0	0	0	0
MCAS Tustin ■	16	16	0	0	5	1	10	0	0	1	0	10	0	2(2)	0	0	0	10	1	0	10	0	0	5	5
MCB Camp Pendleton ●	51	50	1	0	0	6	1	0	0	0	38	6	0	2(2)	0	0	0	43	0	1	45	0	0	0	0
MCLB Barstow ●	40	39	0	1	0	11	0	0	0	0	38	0	0	2(2)	1(1)	0	0	38	2	0	38	1	0	1	1
MCMWTC Bridgeport	10	10	0	0	0	10	0	0	0	0	5	3	0	2(2)	0	0	0	8	1	0	9	0	0	0	0
MCRD San Diego	3	3	0	0	0	1	1	0	0	0	0	1	0	1(1)	0	0	0	1	1	0	1	1	0	1	1
MCRTC Pico Rivera	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NAF El Centro	17	16	1	0	0	0	14	0	0	0	0	14	0	0	3(3)	0	0	13	0	0	14	0	0	0	0
NALF Crows Landing	7	7	0	0	1	6	0	0	1	0	0	4	0	1(1)	0	0	0	4	1	0	4	1	0	3	3
NALF San Clemente Island	15	15	0	0	6	0	8	0	0	0	0	8	0	0	0	0	0	8	0	0	8	0	0	6	6
NAS Alameda	24	23	1	0	0	7	0	0	0	0	20	1	0	0	0	0	0	20	0	0	21	0	0	0	0
NAS Lemoore	17	17	0	0	0	14	0	0	0	0	2	15	0	1(1)	0	0	0	17	0	0	17	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NAS Miramar	16	16	0	0	5	5	6	0	0	1	4	6	0	0	0	0	0	11	0	0	11	0	0	5	5
NAS Moffett Field ● ■	28	27	1	0	0	11	5	0	2	0	19	1	0	5(9)	2(3)	0	0	19	0	0	20	0	0	2	0
NAS Moffett Field Outlying Areas	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAS North Island	13	12	1	0	1	5	5	0	1	0	5	6	0	0	2(2)	0	0	10	0	0	11	0	0	2	2
NAVFAC Centerville Beach	3	2	0	1	0	0	0	1	0	0	0	1	0	0	1(1)	0	0	1	0	0	2	0	0	0	0
NAVFAC Point Sur	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAVHOSP Long Beach	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NAVHOSP San Diego	2	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NAVMEDCOMNWREG Oakland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAVPETRES No. 1 Tupman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAVPHIBASE Coronado	6	5	1	0	0	0	5	0	0	0	0	6	0	0	0	0	0	5	0	0	6	0	0	0	0
NAWS China Lake	46	45	1	0	25	17	0	0	5	0	13	1	0	0	1(2)	0	0	13	0	0	14	0	0	30	30
NAWS Point Mugu	13	13	0	0	1	10	0	0	2	0	8	0	0	0	0	1	0	8	0	2	8	0	0	3	3
NCCOSC San Diego	11	10	0	1	0	5	0	0	0	0	0	6	0	0	0	0	0	5	0	0	6	0	0	0	0
NCEL Port Hueneme	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NCS San Diego	1	0	0	1	0	0	0	0	0	0	0	1	0	1(1)	0	0	0	0	0	0	1	0	0	0	0

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NCS Stockton	6	5	0	1	0	0	5	0	0	0	0	6	0	0	1(1)	0	0	5	0	0	6	0	0	0	0
NESEC San Diego	2	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1
NIROP Pomona	3	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
NIROP Sunnyvale	16	16	0	0	0	16	0	0	0	8	4	0	0	0	0	0	0	10	0	0	10	0	0	0	0
NOSC Morris Dam Facility, Azusa	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NPGS Monterey	3	2	0	1	0	2	0	0	1	0	0	2	0	1(2)	0	0	0	1	0	0	2	0	0	1	1
NRTF Dixon	4	4	0	0	0	3	0	0	0	0	3	1	0	0	0	0	0	3	0	0	3	0	0	0	0
NS Long Beach ■	10	8	2	0	1	0	8	0	0	0	0	8	0	0	0	0	0	7	0	0	8	0	0	1	1
NS Long Beach San Pedro Housing	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	4	0	0	4	0	0	0	0
NS San Diego	13	13	0	0	2	5	4	0	0	0	0	10	0	0	1(1)	0	0	10	0	0	11	0	0	2	2
NS T.I. Hunter's Point Annex ● ■	65	64	0	1	0	9	2	0	0	0	11	51	0	7(8)	1(1)	0	0	62	0	0	62	0	0	0	0
NS Treasure Island	28	28	0	0	0	25	1	0	2	0	23	0	0	2(2)	1(3)	0	0	23	0	1	24	0	0	2	2
NSB San Diego	5	5	0	0	0	0	4	0	0	0	1	3	0	0	0	0	0	4	0	0	4	0	0	0	0
NSC Detachment Long Beach	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSC Oakland	18	17	0	1	0	8	0	0	0	0	0	18	0	1(1)	0	0	0	17	0	0	18	0	0	0	0
NSC Oakland, Alameda Annex	2	2	0	0	0	2	0	0	0	0	1	0	0	1(1)	0	0	0	1	1	0	1	1	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NSC Oakland, Fuel Depot, Richmond	4	3	0	1	0	3	0	0	0	0	0	4	0	0	0	0	0	3	0	0	4	0	0	0	0
NSC San Diego	8	7	0	1	0	3	2	0	0	0	0	3	0	0	0	0	0	2	0	0	3	0	0	0	0
NSGA Skaggs Island	8	5	2	1	4	0	0	1	0	0	0	1	0	0	3(3)	0	0	1	0	0	2	0	0	4	4
NSY Long Beach	8	8	0	0	0	0	5	1	0	0	0	8	0	1(1)	0	0	0	7	0	0	8	0	0	0	0
NSY Mare Island	26	25	0	1	0	20	0	0	0	0	25	0	0	0	2(3)	0	0	24	0	0	26	0	0	0	0
NTC San Diego	4	3	0	1	1	2	0	0	1	0	0	2	0	0	0	0	0	1	0	0	2	0	0	2	2
NTTC San Francisco	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NUWES SOCAL DET San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NWS Concord ♦	31	30	1	0	7	12	10	0	1	7	0	16	0	0	0	7	0	15	0	0	23	0	0	8	0
NWS Seal Beach	71	70	1	0	0	4	38	1	0	0	0	43	0	1(6)	0	0	0	43	0	0	43	0	0	0	0
NWS Seal Beach Corona Detachment	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NWS Seal Beach Fallbrook Annex	10	10	0	0	0	1	5	4	0	0	0	9	0	0	0	0	0	9	0	0	9	0	0	0	0
OLF Imperial Beach	7	7	0	0	0	0	4	0	0	0	0	5	0	0	0	0	0	4	0	0	5	0	0	0	0
PWC San Diego	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
PWC San Francisco	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Salton Sea Test Range	24	0	23	1	0	0	0	24	0	0	0	24	0	0	0	0	0	24	0	0	24	0	0	0	0

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
SIMA San Diego	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Singer Education Div., Imperial Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
SNI - NAWS Point Mugu	7	7	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	0	0
DEPARTMENT OF NAVY TOTALS	830	768	41	21	71	251	167	48	24	17	244	369	0	40(53)	22(32)	8	1	588	7	4	634	5	0	100	90
AIR FORCE																									
Air Force Plant 19	6	6	0	0	0	6	0	0	1	5	0	0	0	0	0	5	0	0	5	0	0	5	0	6	6
Air Force Plant 42	27	27	0	0	0	27	0	0	0	26	1	0	24	0	0	0	0	0	0	0	0	0	0	24	24
Air Force Plant 70	12	1	11	0	0	1	11	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beale AFB	24	25	0	0	0	24	0	0	4	1	1	18	1	0	0	0	3	16	0	2	17	0	0	5	5
Castle AFB ● ■	34	33	0	1	0	8	0	0	0	7	25	1	6	0	2(2)	0	1	26	0	0	27	0	0	6	0
Costa Mesa Station	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cresent City Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Edwards AFB ●	40	40	0	0	0	20	20	0	0	5	20	0	0	6(6)	2(2)	0	0	0	4	0	0	0	0	0	0
Fresno ANGB	5	5	0	0	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
George AFB ● ■	65	65	0	0	0	65	0	0	0	5	0	0	0	4(4)	0	4	0	0	4	0	0	0	0	0	0
Hayward ANGS	2	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
AIR FORCE (Continued)																									
Key Largo Beacon Annex	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Los Angeles AFB	38	38	0	0	0	37	0	0	0	22	2	0	0	0	2(2)	19	0	0	8	11	0	0	0	0	0
March AFB ●	43	43	0	0	0	41	0	0	4	4	32	0	3	4(4)	0	0	0	28	0	1	28	0	1	7	0
Mather AFB ● ■	69	69	0	0	0	63	0	0	0	26	5	0	7	1(1)	0	1	0	0	2	0	0	0	0	7	0
McClellan AFB ●	177	177	0	0	0	174	3	0	10	20	143	0	1	9(9)	0	13	4	0	13	3	0	12	8	23	1
Mill Valley Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Disappointment Radio Relay Station	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Laguna AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Highlands ANGB	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norton AFB ● ■	22	22	0	0	0	22	0	0	1	2	3	0	0	0	1(1)	0	0	0	0	0	0	0	0	1	0
Onizuka AFB	5	5	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Ontario IAP	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paso Robles Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Point Arena AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
San Pedro Hill Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sepulveda ANGB	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Travis AFB ●	27	28	0	0	1	27	0	0	2	0	4	0	0	0	2(2)	0	0	0	0	0	0	0	0	3	3

(Continued)

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	Total # of Sites	Number of Sites																							
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		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CALIFORNIA (Continued)																									
AIR FORCE (Continued)																									
Vandenburg AFB	59	54	5	0	0	52	5	0	2	2	39	5	2	0	1(1)	0	0	1	0	0	3	0	0	4	4
AIR FORCE TOTALS	669	643	23	3	1	578	51	0	29	126	281	24	44	25(25)	9(9)	42	8	72	36	18	76	17	9	91	48
DEFENSE LOGISTICS AGENCY																									
DDTC Tracy ●	62	61	1	0	2	59	1	0	27	3	55	3	0	2(2)	0	2	1	55	2	1	55	1	0	30	0
DFSP Estero Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DFSP Norwalk	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
DFSP Ozol	2	2	0	0	0	2	0	0	0	2	0	0	0	0	0	1	1	0	1	1	0	1	0	1	0
DFSP San Pedro	2	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0
Sharpe Army Depot ●	125	125	0	0	0	124	0	0	59	8	57	0	0	8(8)	0	3	6	56	1	0	7	0	1	60	0
DEFENSE LOGISTICS AGENCY TOTALS	194	193	1	0	2	190	1	0	86	15	115	3	0	10(10)	0	6	8	116	4	2	67	2	1	91	0
CALIFORNIA TOTALS	2190	2101	65	24	268	1315	219	54	175	172	762	475	44	82(97)	34(45)	64	22	839	51	29	847	26	11	514	354
COLORADO																									
ARMY																									
AFRC Boulder	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Fort Carson	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
COLORADO (Continued)																									
ARMY (Continued)																									
Bennett ARNG Training Site	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fitzsimmons Army Medical Center	25	25	0	0	0	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Carson	57	57	0	0	0	57	0	0	21	6	11	17	1	5(5)	5(5)	5	0	1	1	4	1	1	0	23	23
Pueblo Depot Activity	56	56	0	0	0	24	0	0	0	0	56	0	0	0	0	0	0	56	0	0	0	0	0	0	0
Rocky Mountain Arsenal ●	209	209	0	0	0	209	0	0	0	0	209	0	0	15(17)	9(9)	0	0	141	0	0	141	0	0	0	0
USARC Aurora 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Aurora 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Commerce City (AMSA 22)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Denver	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Fort Carson (ECS 42)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Fort Collins (AMSA 21G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Pueblo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	395	395	0	0	39	324	0	0	21	6	285	42	1	20(22)	14(14)	5	0	198	1	4	142	1	0	62	62

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
COLORADO (Continued)																									
DEPARTMENT OF NAVY																									
NAVPETRES Anvil Points Facility	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
AIR FORCE																									
Air Force Plant PJKS	44	44	0	0	0	44	0	0	4	40	0	0	9	12(12)	1(1)	5	2	4	5	2	3	4	0	17	0
Buckley ANGB	9	9	0	0	0	9	0	0	0	9	0	0	0	0	0	7	2	0	0	0	2	0	0	0	0
Cheyenne Mountain AFB	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Greely AGS	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lowry AFB ■	16	16	0	0	0	15	0	0	0	10	0	0	3	0	0	0	1	0	1	0	0	1	0	4	4
Peterson AFB	9	9	0	0	2	7	0	0	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	9	9
USAF Academy	12	12	0	0	2	10	0	0	3	2	5	0	1	0	0	0	0	0	0	0	0	0	0	6	6
AIR FORCE TOTALS	92	91	1	0	5	85	0	0	7	68	5	0	20	12(12)	1(1)	12	5	4	6	2	5	5	0	37	20
COLORADO TOTALS	488	487	1	0	45	409	0	0	28	74	290	42	21	32(34)	15(15)	17	5	202	7	6	147	6	0	100	83

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CONNECTICUT																									
ARMY																									
Family Housing Manchester, CT 25	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Family Housing Milford, CT 17	2	2	0	0	0	2	0	0	0	2	0	0	0	1(1)	0	0	0	0	2	0	0	2	0	2	2
Family Housing New Britain, CT 57	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Family Housing Portland, CT 36	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	0	0	2	2
Family Housing Shelton, CT 74	6	6	0	0	0	6	0	0	0	6	0	0	5	2(2)	0	0	0	0	1	0	0	1	0	6	6
Family Housing Westport, CT 73	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Housing Area Ansonia, CT 04	3	3	0	0	0	3	0	0	0	3	0	0	1	0	0	0	0	0	2	0	0	2	0	3	3
Housing Area East Windsor, CT 08	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Fairfield, CT 65	2	2	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	1	0	2	2
Housing Area Middletown, CT 48	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Housing Area Orange, CT 15	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	3	3
Housing Area Plainville, CT 67	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CONNECTICUT (Continued)																									
ARMY (Continued)																									
Stratford Army Engine Plant	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bridgeport	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Danbury	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC East Windsor	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Fairfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Hartford	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Middleton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Milford	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC New Haven	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Waterbury	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Windsor Locks (AMSA 72G)	11	11	0	0	8	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	106	106	0	0	60	43	0	3	0	34	9	0	26	3(3)	0	0	0	0	8	0	0	7	0	93	93
DEPARTMENT OF NAVY																									
NSB New London	26	24	1	1	0	10	3	5	0	2	11	10	0	1(1)	0	0	0	19	1	2	22	1	0	1	0
NUSC East Lyme	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NUSC New London	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
CONNECTICUT (Continued)																									
NAVY (Continued)																									
NWIRP Bloomfield	7	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	7	0	0	7	0	0	0	0
DEPARTMENT OF NAVY TOTALS	35	33	1	1	1	11	10	5	1	2	11	17	0	1(1)	0	0	0	26	1	2	29	1	0	3	2
AIR FORCE																									
Bradley ANG	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange AGS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	3	2	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONNECTICUT TOTALS	144	141	2	1	61	56	10	8	1	36	22	17	26	4(4)	0	0	0	26	9	2	29	8	0	96	95
DELAWARE																									
ARMY																									
USARC Dover	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lewes	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Seaford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Wilmington, DE	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
ARMY TOTALS	16	16	0	0	13	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
DELAWARE (Continued)																									
DEPARTMENT OF NAVY																									
NAVRESFAC Lewes	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
AIR FORCE																									
Dover AFB ●	58	58	0	0	0	58	0	0	23	5	6	0	0	2(2)	4(4)	5	0	0	6	0	0	6	0	29	0
Greater Wilmington APT (DE ANG)	6	6	0	0	1	5	0	0	0	1	4	0	0	0	0	1	0	0	0	1	0	0	0	1	1
AIR FORCE TOTALS	64	64	0	0	1	63	0	0	23	6	10	0	0	2(2)	4(4)	6	0	0	6	1	0	6	0	30	1
DELAWARE TOTALS	81	81	0	0	15	63	0	3	23	6	10	0	0	2(2)	4(4)	6	0	0	6	1	0	6	0	44	15
DISTRICT OF COLUMBIA																									
ARMY																									
Fort McNair	7	7	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Walter Reed Army Medical Center	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	10	10	0	0	0	7	0	3	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																									
COMNAVDIST Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
DISTRICT OF COLUMBIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NAVSECSTA Washington DC	1	1	0	0	0	1	0	0	0	0	0	0	0	1(1)	0	0	0	0	1	0	0	0	0	0	0
NRL Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NS Anacostia	4	3	1	0	0	1	2	0	0	1	0	2	0	1(1)	0	0	0	3	0	0	3	0	0	0	0
DEPARTMENT OF NAVY TOTALS	7	6	1	0	2	2	2	0	0	1	0	2	0	2(2)	0	0	0	3	1	0	3	0	0	2	2
AIR FORCE																									
Bolling AFB	6	6	0	0	0	5	1	0	0	1	5	0	0	1(1)	1(1)	0	0	0	0	1	0	0	0	0	0
AIR FORCE TOTALS	6	6	0	0	0	5	1	0	0	1	5	0	0	1(1)	1(1)	0	0	0	0	1	0	0	0	0	0
DISTRICT OF COLUMBIA TOTALS	23	22	1	0	2	14	3	3	0	2	5	9	0	3(3)	1(1)	1	0	3	1	1	3	0	0	2	2
FLORIDA																									
ARMY																									
AFRC Daytona Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Aviation Supply Facility, 49-A	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Cape St. George ■	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Coral Gables	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
FLORIDA (Continued)																									
ARMY (Continued)																									
USARC Fort Lauderdale (NININGER)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Gainesville (1300)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Gainesville (Layton)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jacksonville (Burpee)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jacksonville (Milam)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Jacksonville (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Kissimmee	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lakeland	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Melbourne	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Miami (AMSA 47G)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Milton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Ocala	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Orlando (ASF 49)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Orlando (ECS McCoy Annex)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Orlando (McCoy 03)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Orlando (Orange County)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
FLORIDA (Continued)																									
ARMY (Continued)																									
USARC Palatka (AMSA 55W)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Panama City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Pensacola	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Perry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Port Charlotte	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC St. Petersburg (AMSA 51M)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC St. Petersburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Taft	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Tallahassee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Tampa	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC West Palm Beach (Babcock)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC West Palm Beach (Gun Club)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARMY TOTALS	134	134	0	0	127	2	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129	129

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
FLORIDA (Continued)																									
DEPARTMENT OF NAVY																									
CSC Panama City	15	15	0	0	6	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	9	0	0	6	6
NAS Cecil Field ●	27	20	5	2	6	13	0	0	0	0	6	15	0	0	0	0	0	13	0	0	21	0	0	6	0
NAS Jacksonville ●	54	45	8	1	0	14	31	0	1	0	10	43	0	2(2)	0	0	0	44	1	2	53	0	0	1	0
NAS Key West	21	10	10	1	1	9	0	0	1	7	1	11	1	0	0	0	0	7	0	0	18	0	0	3	3
NAS Pensacola ●	61	45	14	2	0	34	1	0	0	0	35	22	0	0	3(3)	2	0	38	0	1	53	0	0	0	0
NAS Richmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAS Whiting Field	27	23	4	0	1	17	0	0	0	1	17	5	0	0	1(1)	0	0	18	0	0	22	0	0	1	1
NRL UWS REF Det Orlando	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NS Mayport	30	18	7	5	0	0	0	0	0	0	18	11	0	0	0	0	0	0	0	0	30	0	0	0	0
NSC Jacksonville	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NSC Pensacola	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
HSGA Homestead	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NSWC DET Ft. Lauderdale	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NTC Orlando	14	11	1	2	4	6	0	0	2	1	0	7	1	1(1)	0	0	0	4	1	0	7	1	0	7	7
NTTC Pensacola	4	4	0	0	0	0	0	3	0	0	1	3	0	0	1(1)	0	0	4	0	0	4	0	0	0	0
NUSC Ft. Lauderdale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NUSC West Palm Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
FLORIDA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
Outlying Landing Field Barin	11	10	0	1	0	2	0	2	0	0	7	2	0	0	0	0	0	9	0	0	10	0	0	0	0
DEPARTMENT OF NAVY TOTALS	272	207	50	15	22	96	32	5	5	9	95	131	1	3(3)	5(5)	0	0	138	1	1	230	1	0	29	22
AIR FORCE																									
Avon Park Air Force Range	20	12	1	7	5	6	1	7	1	3	0	8	2	0	0	0	0	6	0	0	7	0	0	8	8
Cape Canaveral AFS	10	10	0	0	0	10	0	0	0	0	9	0	0	4(4)	0	0	0	0	0	0	0	0	0	0	0
Cross City Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cudjoe Key AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eglin AFB	39	39	0	0	6	21	18	0	3	4	18	0	0	3(3)	0	0	0	0	0	1	0	0	3	9	9
Ft. Lonesome Beacon Annex	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Homestead AFB ●	26	26	0	0	0	25	0	0	0	6	0	7	0	1(1)	0	2	0	5	1	0	5	0	1	0	0
Hurlburt AFB	11	11	0	0	0	11	0	0	0	0	11	0	0	0	0	0	0	11	0	0	11	0	0	0	0
Jacksonville CAMM FAC ANX	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jacksonville IAPT	10	10	0	0	0	10	0	0	0	0	8	0	0	0	0	0	0	8	0	1	8	0	0	0	0
MacDill AFB	44	36	3	6	6	30	3	6	0	13	2	10	8	1(1)	0	3	0	6	2	1	9	0	2	14	14
Patrick AFB	20	16	4	0	0	16	4	0	1	3	13	0	2	2(2)	1(1)	0	0	0	1	0	0	0	0	4	4
Richmond AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
FLORIDA (Continued)																									
AIR FORCE (Continued)																									
Tyndall AFB	36	35	1	0	5	30	1	0	17	1	9	0	0	0	0	0	1	4	0	1	4	0	0	22	22
Whitehouse Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	222	199	9	13	22	163	27	13	22	30	70	25	12	11(11)	1(1)	5	1	40	4	4	44	1	4	57	57
DEFENSE LOGISTICS AGENCY																									
DFSP Lynn Haven	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DFSP Tampa	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	1	1	0	1	0	0	0	0	2	0	0	2	0	0	1	1
FLORIDA TOTALS	630	542	59	28	171	263	59	23	29	40	166	156	13	14(14)	6(6)	5	1	180	5	5	276	2	4	215	208
GEORGIA																									
ARMY																									
AFRC Waycross	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Fort Benning	39	39	0	0	0	36	0	3	8	18	6	5	18	2(2)	0	0	1	1	0	0	3	0	0	26	4
Fort Gillem	10	10	0	0	0	10	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Gordon	32	32	0	0	0	32	0	0	2	0	0	14	0	0	0	0	0	0	0	0	0	0	0	2	2
Fort McPherson	9	9	0	0	0	8	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
GEORGIA (Continued)																									
ARMY (Continued)																									
Fort Stewart	84	84	0	0	0	6	1	68	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunter Army Airfield	10	10	0	0	0	10	0	0	2	0	1	7	0	0	0	0	0	0	0	0	0	0	0	2	0
USARC Athens	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Augusta 02	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Carrollton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Chamblee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Columbus (Macon Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Columbus (Midtown Drive)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Dobbins AFB	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Dublin	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC East Point Atlanta	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Forest Park	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fort Valley	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Gainesville	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Macon	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Rome	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Savannah	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
GEORGIA (Continued)																									
ARMY (Continued)																									
USARC Tifton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
ARMY TOTALS	270	270	0	0	86	102	2	71	15	19	8	39	18	2(2)	0	0	1	1	0	0	3	0	0	119	95
DEPARTMENT OF NAVY																									
MCLB Albany ●	28	28	0	0	0	9	0	0	0	3	2	22	0	1(1)	0	0	2	22	1	0	24	1	0	1	0
NAVMARCORESCEN Atlanta	2	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0
NAVSCSCOL Athens	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0
NSB Kings Bay	17	17	0	0	12	4	0	12	0	0	0	17	0	0	0	0	0	16	0	0	17	0	0	12	12
DEPARTMENT OF NAVY TOTALS	50	50	0	0	12	13	0	12	0	3	7	39	0	1(1)	0	0	2	38	1	0	46	1	1	13	12
AIR FORCE																									
Air Force Plant 6	15	15	0	0	0	14	1	0	6	1	4	0	0	7(7)	0	0	1	0	0	0	0	0	7	6	6
Dobbins AFB	7	7	0	0	0	7	0	0	3	0	1	0	0	0	0	0	0	2	0	0	2	0	0	3	3
Moody AFB	22	22	0	0	0	20	0	0	8	2	0	1	0	1(1)	0	2	0	2	2	0	1	0	0	8	8
Robins AFB ●	33	33	0	0	0	33	0	0	7	14	7	0	8	1(1)	1(1)	7	3	1	4	3	0	1	2	16	16
Savannah IAPT	11	11	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	2
AIR FORCE TOTALS	88	88	0	0	2	74	10	0	24	17	12	1	8	9(9)	1(1)	9	4	5	6	4	3	1	9	35	35
GEORGIA TOTALS	408	408	0	0	100	189	12	83	39	39	27	79	26	12(12)	1(1)	9	7	44	7	4	52	2	9	167	142

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		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
GUAM																									
DEPARTMENT OF NAVY																									
NAS Agana	2	0	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
NAVCAMS WESTPAC Guam	11	11	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	7	7
NAVMAG Guam	6	5	1	0	3	0	2	0	0	0	0	3	0	0	0	0	0	2	0	0	3	0	0	3	3
NAVREGDENCEN Guam	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
NAVSHIPREPFAC Guam	5	5	0	0	3	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	3	3
NPPSO Guam	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NS Guam	18	18	0	0	12	6	0	0	2	0	4	1	0	0	0	0	0	5	0	0	5	0	0	14	14
NSD Guam	4	4	0	0	2	2	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	3	3
PWC Guam	5	5	0	0	1	2	0	0	0	0	3	0	0	1(2)	0	0	0	2	0	1	3	0	0	1	1
DEPARTMENT OF NAVY TOTALS	53	49	1	3	28	13	2	2	3	0	10	7	0	1(2)	0	0	0	15	0	1	21	0	0	31	31
AIR FORCE																									
Andersen AFB ♦	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUAM TOTALS	103	49	1	3	28	13	2	2	3	0	10	7	0	1(2)	0	0	0	15	0	1	21	0	0	31	31

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		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
HAWAII																									
ARMY																									
Alliamanu Military Reservation	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Kamehameha	11	11	0	0	0	1	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Shafter	33	32	0	1	16	6	10	1	1	1	4	0	0	0	0	1	0	0	0	1	0	0	0	17	17
Kapalama Military Reservation ■	22	22	0	0	3	19	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1
Kilauea Military Reservation	16	16	0	0	0	16	0	0	13	0	3	0	0	0	0	0	0	0	0	0	0	0	0	13	13
Kipapa Ammo Storage Sites	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Makua Military Reservation	4	4	0	0	0	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	3
Pohakuloa Training Area	16	16	0	0	0	16	0	0	12	0	4	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Schofield Barracks ●	56	1	55	0	0	0	12	0	0	0	12	0	0	1(1)	0	1	0	12	0	0	12	0	0	0	0
Tripler Army Medical Center	6	6	0	0	0	6	0	0	0	0	3	2	0	0	2(2)	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	167	111	55	1	19	71	22	11	48	1	27	6	0	1(1)	2(2)	2	0	12	0	1	12	0	0	67	46
DEPARTMENT OF NAVY																									
Camp H.M. Smith, Oahu	3	3	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	1	1
COMNAVBASE Pearl Harbor	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DRMO Hawaii	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DRMO Pearl City Junction	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
HAWAII (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
FLTRNGGRA Pearl Harbor	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
INACTSHIPDET Pearl Harbor ♦	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Kahoulawe Projects	17	0	17	0	0	0	0	17	0	0	0	17	0	0	0	0	0	17	0	0	17	0	0	0	0
MCAS Kaneohe Bay	21	21	0	0	14	5	1	0	3	0	0	2	0	0	0	0	0	2	0	0	3	0	0	17	17
NAS Barbers Point	10	9	0	1	6	3	0	0	2	0	1	1	0	1(1)	0	0	0	1	0	0	2	0	0	8	8
NAVENPVNTMEDU No. 6 Pearl Harbor	2	2	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
NAVMAG Lualualei	7	7	0	0	3	3	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	5
NCTAMS EASTPAC	18	17	0	1	10	6	0	0	2	0	4	1	0	1(1)	0	0	0	4	0	0	5	0	1	12	12
NS Pearl Harbor ♦	10	9	1	0	1	4	1	0	1	0	1	4	0	1(1)	1(2)	0	0	4	1	0	7	1	0	3	0
NSB Pearl Harbor ♦	7	7	0	0	1	1	0	0	1	0	5	0	0	0	0	0	0	0	0	0	5	0	0	2	0
NSC Pearl Harbor ♦	12	12	0	1	5	5	1	0	3	0	3	1	0	0	0	0	0	3	0	0	4	0	0	8	0
NSY Pearl Harbor ♦	19	19	0	0	7	5	0	0	3	0	9	0	0	1(1)	0	0	0	2	0	0	9	0	0	10	0
PMRF Barking Sands	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0
PWC Pearl Harbor ♦	13	13	0	0	0	2	1	0	0	0	10	0	0	1(1)	1(1)	0	0	2	1	0	10	0	0	0	0
Waiawa Shaft Pearl City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
HAWAII (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
Waikane Valley Impact Area Kaneohe	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	149	129	18	2	53	40	6	18	18	0	38	29	0	5(5)	2(3)	1	0	42	2	1	68	1	0	72	46
AIR FORCE																									
Bellows AFS	3	3	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Hickam AFB	21	32	1	0	6	26	0	0	0	0	15	0	0	0	2(2)	0	0	12	0	0	11	0	0	6	6
Hickam POL	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnston Atoll	9	9	0	0	0	9	0	0	3	1	3	0	1	0	1(1)	0	0	0	0	0	0	0	0	4	4
Kaala AFS	8	8	0	0	0	8	0	0	2	3	0	0	0	0	0	3	0	0	3	0	0	0	0	2	2
Kaena Point Station	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Kokee AFS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Maui Satellite Tracking Station	13	13	0	0	10	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
Palehua Solar Orbs	2	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Punamano AFS	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Wheeler AAF	9	8	1	0	0	8	1	0	4	0	4	0	0	0	0	0	0	0	0	0	4	0	0	4	4
AIR FORCE TOTALS	81	79	2	0	16	63	1	0	17	4	24	0	1	0	3(3)	3	0	13	3	0	16	0	0	34	34
HAWAII TOTALS	397	319	75	3	88	174	29	29	83	5	89	35	1	6(6)	7(8)	6	0	67	5	2	96	1	0	173	126

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
IDAHO																									
ARMY																									
AFRC Idaho Fallls	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Boise (AMSA 3)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Coeur D'Alene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Rexburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Twin Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	38	38	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	38
AIR FORCE																									
Gowen Field, Boise ANG	14	14	0	0	1	13	0	0	0	0	4	0	0	0	0	2	0	4	2	0	4	0	0	1	0
Mountain Home AFB ●	29	29	0	0	2	27	0	0	3	4	19	0	0	1(1)	0	0	0	14	0	0	14	0	0	5	0
Saylor Creek	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	46	46	0	0	3	43	0	0	3	4	23	0	0	1(1)	0	2	0	18	2	0	18	0	0	6	0
IDAHO TOTALS	84	84	0	0	41	43	0	0	3	4	23	0	0	1(1)	0	2	0	18	2	0	18	0	0	44	38
ILLINOIS																									
ARMY																									
AFRC Joliet (McDonough)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ILLINOIS (Continued)																									
ARMY (Continued)																									
AFRC Waukegan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Charles Melvin Price Support Center	31	31	0	0	0	31	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sheridan ■	26	26	0	0	0	24	0	1	0	0	18	0	0	0	0	0	1	17	0	0	1	0	0	0	0
Housing Area Addison, IL	4	4	0	0	0	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4
Housing Area Worth, IL	5	5	0	0	0	5	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5	5
Joliet AAP ●	53	53	0	0	0	53	0	0	0	0	53	0	0	3(3)	0	3	0	23	0	0	26	0	0	0	0
Rock Island Arsenal	31	31	0	0	0	30	0	0	25	0	3	1	0	0	0	0	0	1	1	1	1	1	0	26	26
Savanna Depot Activity ●	72	72	0	0	0	70	0	0	9	0	40	0	0	0	0	0	2	55	1	2	55	1	0	33	33
USARC Arlington Heights	6	6	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Aurora (Sullivan Rd)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Belleville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Bloomington	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Canton, IL	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Centralia	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Chicago (Bryn Mawr Ave.)	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Chicago (Gibson)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Chicago (Kedzie Ave.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ILLINOIS (Continued)																									
ARMY (Continued)																									
USARC Chicago (O'Hare Field)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Chicago (Pulaski)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Danville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Decatur	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC East St. Louis	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Fairfield, IL	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Sheridan (82)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Sheridan (AMSA 47)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Fort Sheridan (N. Shore)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Galesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Glenview (ASF 26)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16
USARC Harvey	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Homewood	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Joliet (Railroad)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Kankakee	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Marion, IL	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Maywood (AMSA 46)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ILLINOIS (Continued)																									
ARMY (Continued)																									
USARC Orland Park (AMSA 45)	21	21	0	0	20	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20
USARC Peoria (AMSA 48)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Peoria (Northmore)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Peru (Veterans Memorial)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Quincy	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Rockford (15th Ave.)	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Rockford (Arthur Avenue)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Rockford (First)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Scott AFB (ASF 44)	24	24	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	24
USARC Springfield, IL	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Urbana	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Wood River	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
ARMY TOTALS	482	482	0	0	247	217	0	14	34	9	114	32	9	3(3)	0	3	3	96	2	3	83	2	0	292	292
DEPARTMENT OF NAVY																									
Libertyville Nike Site	8	8	0	0	0	7	0	0	0	0	7	0	0	1(1)	0	0	0	7	0	0	7	0	0	0	0

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
ILLINOIS (Continued)																									
NAVY (Continued)																									
NAS Glenview	9	9	0	0	0	9	0	0	3	0	0	6	0	0	0	0	0	6	0	0	6	0	0	3	3
NTC Great Lakes	14	14	0	0	0	8	6	0	8	0	0	6	0	0	0	0	0	6	0	0	6	0	0	8	8
PWC Great Lakes	1	1	0	0	0	0	0	0	0	0	0	0	0	1(1)	0	0	0	0	1	0	0	1	0	1	0
DEPARTMENT OF NAVY TOTALS	32	32	0	0	0	24	6	0	11	0	7	12	0	2(2)	0	0	0	19	1	0	19	1	0	12	11
AIR FORCE																									
Capital MAPT	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chanute AFB ■	32	32	0	0	0	30	0	0	3	16	10	0	8	0	0	4	0	0	4	0	0	4	0	15	15
Greater Peoria APT	6	6	0	0	2	4	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	3
O'Hare Air Force Reserve	14	14	0	0	0	14	0	0	10	2	0	0	0	0	0	0	0	0	2	2	0	2	0	12	12
Scott AFB	8	8	0	0	0	8	0	0	0	7	0	0	0	0	0	1	6	0	1	6	1	1	0	1	1
AIR FORCE TOTALS	62	62	0	0	2	56	2	0	13	26	12	0	9	0	0	5	6	0	7	8	1	7	0	31	31
ILLINOIS TOTALS	576	576	0	0	249	297	8	14	58	35	133	44	18	5(5)	0	8	9	115	10	11	103	10	0	335	334
INDIANA																									
ARMY																									
AFRC Bloomington	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
INDIANA (Continued)																									
ARMY (Continued)																									
AFRC Evansville	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Fort Benjamin Harrison ■	50	50	0	0	0	50	0	0	0	14	27	0	0	0	0	1	0	30	1	0	0	0	0	0	0
Indiana AAP	62	62	0	0	6	52	0	0	31	2	4	15	2	0	0	0	0	1	1	1	0	1	0	40	10
Jefferson Proving Ground ■	103	103	0	0	0	92	0	0	51	0	50	0	0	0	0	0	0	0	0	0	0	0	0	51	0
Newport Army Ammunition Plant	16	16	0	0	1	5	0	1	2	5	2	5	2	0	0	0	0	9	0	0	7	0	0	5	5
USARC Edinburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Ft. Benjamin Harrison (McGee)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Ft. Wayne (Gillespie)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Gary	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Indianapolis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Jeffersonville	18	18	0	0	14	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Lafayette, IN	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Lake Station	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC North Judson	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Peru (Grissom AFB)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Richmond	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Rushville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
INDIANA (Continued)																									
ARMY (Continued)																									
USARC Scottsburg	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC South Bend (AMSA 39)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Terre Haute	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
ARMY TOTALS	354	354	0	0	123	199	0	8	84	21	83	20	4	0	0	1	0	40	2	1	7	1	0	212	131
DEPARTMENT OF NAVY																									
NAC Indianapolis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
NMCRC Gary	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NWSC Crane	33	33	0	0	1	0	0	0	0	0	0	0	0	1(1)	0	0	0	0	0	1	0	0	0	1	1
DEPARTMENT OF NAVY TOTALS	36	36	0	0	4	0	0	0	0	0	0	0	0	1(1)	0	0	0	0	0	1	0	0	0	4	4
AIR FORCE																									
Fort Wayne Municipal	4	4	0	0	0	1	3	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grissom AFB ■	10	10	0	0	0	10	0	0	1	0	9	0	0	0	0	0	0	9	0	0	9	0	0	1	0
Hulman Regional Airport	6	6	0	0	0	2	4	0	1	0	4	1	0	0	0	0	0	1	0	0	1	0	0	1	1
AIR FORCE TOTALS	20	20	0	0	0	13	7	0	2	1	16	1	0	0	0	0	0	10	0	0	10	0	0	2	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
INDIANA (Continued)																									
DEFENSE LOGISTICS AGENCY																									
DNSC Newhaven	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0
INDIANA TOTALS	411	411	0	0	127	213	7	8	86	23	99	21	4	1(1)	0	2	0	50	3	2	17	2	0	219	136
IOWA																									
ARMY																									
AFRC Dubuque	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
AFRC Waterloo	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Fort Des Moines	11	11	0	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iowa Army Ammunition Plant ●	40	40	0	0	0	40	0	0	7	1	32	0	0	2(2)	0	0	2	31	0	0	33	0	0	7	0
USARC Ames	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Cedar Rapids	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Cherokee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Creston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Davenport	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Decorah	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
IOWA (Continued)																									
ARMY (Continued)																									
USARC Des Moines (63/64/139)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Des Moines (ASF 60)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Des Moines (Bldg. 100)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Fort Dodge	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Garner, IA	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Iowa City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Middletown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Mt. Pleasant	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Muscatine	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Ottumwa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Pocahontas	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Sac City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Sioux City	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Washington (AMSA 30)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Washington, IA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
ARMY TOTALS	177	177	0	0	120	51	0	6	7	1	43	0	0	2(2)	0	0	2	31	0	0	33	0	0	127	120

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
IOWA (Continued)																									
AIR FORCE																									
Des Moines MAPT	5	5	0	0	0	5	0	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0
Sioux City MAPT	4	4	0	0	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0
AIR FORCE TOTALS	9	9	0	0	0	6	3	0	0	4	3	0	0	0	0	0	4	0	0	6	0	0	0	0	0
IOWA TOTALS	186	186	0	0	120	57	3	6	7	5	46	0	0	2(2)	0	0	6	31	0	6	33	0	0	127	120
KANSAS																									
ARMY																									
AFRC Hutchinson	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
AFRC Topeka (Menninger)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Fort Leavenworth	58	58	0	0	20	32	0	1	17	0	7	1	0	7(7)	4(4)	2	1	1	7	1	1	6	0	43	40
Fort Riley ●	48	41	7	0	0	28	20	0	7	0	6	28	0	1(1)	0	3	0	4	3	0	4	3	0	10	0
Kansas AAP	38	38	0	0	0	35	0	0	7	0	31	0	0	0	1(1)	0	0	0	0	0	0	0	0	7	7
Sunflower AAP	50	50	0	0	0	50	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Arkansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Baxter Springs	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Dodge City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC El Dorado	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
KANSAS (Continued)																									
ARMY (Continued)																									
USARC Emporia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Fort Riley (ECS 33)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Ft. Leavenworth	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Ft. Riley (1695)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Ft. Riley (1968)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Garden City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Great Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Hays	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Independence	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Kansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lawrence	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lenexa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Manhattan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Norton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Olathe (ASF 37)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Osage City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Osawatomie	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
KANSAS (Continued)																									
ARMY (Continued)																									
USARC Parsons	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Pittsburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Salina	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Scott City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Sunflower Outdoor Training	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Topeka (AMSA 39)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Wellington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Wichita (Wallace)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	312	305	7	0	137	145	20	2	31	0	74	29	0	8(8)	5(5)	5	1	5	10	1	5	9	0	177	164
AIR FORCE																									
Forbes Field ANGB	11	11	0	0	3	7	0	0	0	7	0	0	7	0	0	0	0	0	0	1	0	0	0	10	10
McConnell AFB	27	25	2	0	0	25	2	0	8	3	2	6	3	0	0	0	0	2	0	0	2	0	0	11	11
Smoky Hill ANGB	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	43	41	2	0	3	32	2	0	8	10	2	6	10	0	0	0	0	2	0	1	2	0	0	21	21

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA					Total	
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
KANSAS (Continued)																									
DEFENSE LOGISTICS AGENCY																									
DIPEF Atchison	3	3	0	0	0	3	0	0	2	1	0	0	0	0	1(1)	1	0	0	1	0	0	1	0	3	3
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	2	1	0	0	0	0	1(1)	1	0	0	1	0	0	1	0	3	3
KANSAS TOTALS	358	349	9	0	140	180	22	2	41	11	76	35	10	8(8)	6(6)	6	1	7	11	2	7	10	0	201	198
KENTUCKY																									
ARMY																									
AFRC Hopkinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
AFRC Lexington	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
Blue Grass Facility-LBAD	55	55	0	0	0	52	0	3	36	6	0	9	6	0	0	0	0	0	0	0	0	0	0	42	42
Fort Campbell	37	37	0	0		7	29	1	6	0	1	30	0	0	1(1)	0	0	31	0	0	31	0	0	6	6
Fort Knox	26	24	2	0	0	24	2	0	11	1	10	3	1	0	0	0	0	0	0	0	0	0	0	12	12
Lexington Facility-LBAD ■	52	52	0	0	0	52	0	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bardstown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Beattyville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Berea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Bowling Green	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Knox (ECS 63)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
KENTUCKY (Continued)																									
ARMY (Continued)																									
USARC Georgetown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Hardinsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Lebanon	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Lexington (Barrow)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Lexington (Blue Grass)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Louisville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Louisville (Bowman Hanger 7)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Louisville (Century)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Louisville (Major)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Madisonville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Maysville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Owensboro	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Paducah 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Paducah 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Pikeville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
ARMY TOTALS	255	253	2	0	85	135	31	4	53	7	63	42	7	0	1(1)	0	0	31	0	0	31	0	0	145	145

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
KENTUCKY (Continued)																									
DEPARTMENT OF NAVY																									
NOS Louisville	6	6	0	0	3	3	0	0	2	0	0	1	0	0	0	0	0	1	0	0	1	0	0	5	5
DEPARTMENT OF NAVY TOTALS	6	6	0	0	3	3	0	0	2	0	0	1	0	0	0	0	0	1	0	0	1	0	0	5	5
AIR FORCE																									
Standiford Field ANGB	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KENTUCKY TOTALS	262	260	2	0	88	138	32	4	55	7	64	43	7	0	1(1)	0	0	32	0	0	32	0	0	150	150
LOUISIANA																									
ARMY																									
Fort Polk	20	20	0	0	0	20	0	0	13	1	3	3	0	1(1)	0	0	0	3	0	0	3	0	0	13	13
Louisiana AAP ●	7	7	0	0	0	7	0	0	0	0	7	0	0	1(3)	0	0	0	7	0	0	2	0	0	0	0
Military Ocean Terminal, New Orleans ■	12	12	0	0	1	0	0	1	0	0	10	0	0	0	0	0	0	5	0	0	4	0	0	1	1
Peason Ridge	4	4	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alexandria, LA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Baton Rouge (North)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Baton Rouge (Roberts)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
LOUISIANA (Continued)																									
ARMY (Continued)																									
USARC Baton Rouge (Saurage)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Baton Rouge 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Bogalusa	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Bossier City	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Ft. Polk (8610)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Ft. Polk (ECS 17)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Hammond	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Houma	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Lafayette	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Lake Charles	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Monroe	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC New Orleans (Diamond)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC New Orleans (Fleming)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Shreveport 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Slidell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	**112**	**112**	**0**	**0**	**70**	**31**	**0**	**1**	**13**	**1**	**20**	**7**	**0**	**2(4)**	**0**	**0**	**0**	**15**	**0**	**0**	**9**	**0**	**0**	**83**	**83**

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
LOUISIANA (Continued)																									
DEPARTMENT OF NAVY																									
NAS New Orleans	17	15	2	0	4	11	0	0	4	0	7	2	0	0	0	0	0	7	0	0	9	0	0	8	8
NSA New Orleans	9	6	3	0	1	2	0	0	1	0	4	3	0	0	0	0	0	4	0	1	7	0	0	2	2
DEPARTMENT OF NAVY TOTALS	26	21	5	0	5	13	0	0	5	0	11	5	0	0	0	0	0	11	0	1	16	0	0	10	10
AIR FORCE																									
Barksdale AFB	33	33	0	0	0	32	0	0	0	20	4	9	20	0	0	0	0	12	0	0	12	0	0	20	20
England AFB ■	43	42	1	0	15	26	1	0	20	2	2	2	1	0	0	0	0	3	0	0	2	0	0	36	36
Hammond AGS	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jackson Barracks	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake Charles AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slidell BCN	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	80	77	3	0	15	60	1	0	20	22	6	11	21	0	0	0	0	15	0	0	14	0	0	56	56
DEFENSE LOGISTICS AGENCY																									
DNSC Baton Rouge	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
LOUISIANA TOTALS	219	211	8	0	90	105	1	1	38	23	38	23	21	2(4)	0	0	0	42	0	1	39	0	0	149	149

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MAINE																									
ARMY																									
USARC Auburn	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Bangor	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Bridgton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Dexter	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Saco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	33	33	0	0	32	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32
DEPARTMENT OF NAVY																									
NAS Brunswick ●	19	17	2	0	0	14	2	0	2	11	1	4	0	0	0	0	9	3	0	1	16	0	0	2	0
NAVCOMMU Cutler	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	0
NSGA Corea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NSGA Winter Harbor	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NSY Portsmouth	14	14	0	0	0	2	0	0	0	0	2	11	0	1(1)	0	0	0	2	1	0	13	1	0	1	0
DEPARTMENT OF NAVY TOTALS	38	36	2	0	2	16	5	0	2	11	3	18	0	1(1)	0	0	9	8	1	1	32	1	0	5	2
AIR FORCE																									
Bangor ANGB	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bucks Harbor Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MAINE (Continued)																									
DEFENSE LOGISTICS AGENCY (Continued)																									
Loring AFB ● ■	42	42	0	0	0	33	9	0	7	9	8	17	6	0	3(3)	0	5	21	0	0	26	0	0	13	0
South Portland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	46	46	0	0	1	34	11	0	7	9	10	17	6	3(3)	0	0	5	21	0	0	26	0	0	14	0
DEFENSE LOGISTICS AGENCY																									
DFSP Casco Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DFSP Searsport	2	2	0	0	0	2	0	0	0	1	0	1	0	0	0	1	0	1	1	0	1	1	0	1	1
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	0	1	1	1	0	0	0	1	0	2	1	0	2	1	0	1	1
MAINE TOTALS	120	118	2	0	35	53	16	1	9	21	14	36	6	4(4)	0	1	14	31	2	1	60	2	0	52	35
MARYLAND																									
ARMY																									
Aberdeen Proving Ground ●	79	79	0	0	0	79	0	0	0	1	29	48	1	11(13)	8(9)	0	2	17	1	5	13	0	0	1	0
Blossom Point Field Test Activity	26	26	0	0	0	15	0	0	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	26	26
Fort Detrick	41	41	0	0	0	41	0	0	32	0	0	7	0	0	0	0	0	0	0	0	0	0	0	32	32
Fort George G. Meade	73	73	0	0	0	73	0	0	3	0	27	41	0	0	0	0	0	0	0	0	0	0	0	3	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MARYLAND (Continued)																									
ARMY (Continued)																									
Fort Holabird Crimes Record Center	9	9	0	0	0	9	0	0	5	4	0	0	3	0	0	1	0	0	0	1	0	0	0	8	0
Fort Ritchie	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gaithersburg Res Facility	19	19	0	0	0	19	0	0	16	0	0	0	0	1(1)	0	3	0	0	0	3	0	0	0	16	16
Harry Diamond Labs (Adelphi)	39	39	0	0	0	39	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	39
Phoenix Mil. Res.	4	4	0	0	0	4	0	0	0	2	0	0	0	0	0	2	2	0	2	2	0	2	0	2	2
USARC Annapolis	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Baltimore (Jecelin)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Baltimore (Sheridan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Baltimore (Turner)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Camp Springs	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Cumberland	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Curtis Bay (AMSA 83)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Curtis Bay (Brandt)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Frederick (Flair)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Gaithersburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Greenspring	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Hagerstown (ASF 111)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MARYLAND (Continued)																									
ARMY (Continued)																									
USARC Hagerstown (Tagg-Zirkle)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Riverdale	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Rockville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Westminster	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	[illegible]
ARMY TOTALS	374	374	0	0	81	279	0	3	95	33	56	96	30	12(14)	8(9)	6	4	17	3	11	13	2	0	208	196
DEPARTMENT OF NAVY																									
Bloodsworth Archipelago	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
CHESDIVNFEC (NSF Thurmont)	2	1	0	0	0	0	1	0	0	1	0	1	0	1(1)	0	0	0	1	0	0	1	0	0	0	0
DTRESCEN Annapolis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DTRESCEN Annapolis Bay Head Annex	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DTRESCEN Bethesda	9	9	0	0	0	0	9	0	0	0	0	9	0	1(1)	0	0	0	9	0	0	9	0	0	0	0
NAF Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAS Patuxent River	34	32	2	0	0	29	0	1	20	0	11	3	0	3(3)	1(1)	0	0	10	1	0	13	1	0	21	21
NAVCOMMU Cheltenham	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAVEODTECHCEN Indian Head	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
NAVMEDCOM NATCAPREG Bethesda	7	7	0	0	1	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	1	1

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MARYLAND (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NAVRECCEN Solomons	3	3	0	0	0	3	0	0	1	0	0	2	0	0	0	0	0	2	0	0	1	0	0	1	1
NESEA St. Inigoes	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
NRL Chesapeake Bay Detachment	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
NRL Waldorf	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NRL Washington, Pomonkey Test Range	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NRTF Annapolis	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NS Annapolis	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
NSWC Indian Head	47	47	0	0	28	4	15	0	1	1	0	15	0	0	15(15)	0	0	16	0	0	16	0	0	29	27
NSWC White Oak	15	15	0	0	7	7	0	0	0	0	7	0	0	1(1)	0	0	0	7	0	0	7	0	0	7	7
NTC Bainbridge	2	2	0	0	0	2	0	0	0	1	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0
NTIC Suitland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
U.S. Naval Academy	6	6	0	0	3	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	0	0	3	3
NAVY TOTALS	154	152	2	0	61	56	25	1	26	4	20	39	0	6(6)	16(16)	0	0	54	1	0	60	1	0	88	86
AIR FORCE																									
Andrews AFB	19	19	0	0	0	18	0	0	0	13	1	0	0	0	1(1)	0	12	1	1	14	1	1	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MARYLAND (Continued)																									
AIR FORCE (Continued)																									
Martin State ANG	15	13	2	0	3	10	2	0	0	0	10	1	0	0	0	0	0	1	0	0	1	0	0	3	3
AIR FORCE TOTALS	34	32	2	0	3	28	2	0	0	13	11	1	0	0	1(1)	0	12	2	1	14	2	1	0	4	4
DEFENSE LOGISTICS AGENCY																									
DNSC Curtis Bay	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0
MARYLAND TOTALS	563	559	4	0	145	364	27	4	121	50	87	137	30	18(20)	25(26)	6	17	73	5	25	76	4	0	300	286
MASSACHUSETTS																									
ARMY																									
AFRC Chicopee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Family Housing Hull, MA 36	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Family Housing Namant, MA 17	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Fort Devens ● ■	69	69	0	0	2	4	31	32	0	0	7	47	0	1(1)	0	0	0	52	0	0	52	0	0	2	0
Fort Devens/Sudbury Annex ●	69	69	0	0	0	4	41	23	0	0	5	64	0	20(22)	0	0	0	69	0	0	68	0	0	0	0
Hingham Annex	9	9	0	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MASSACHUSETTS (Continued)																									
ARMY (Continued)																									
Housing Area Bedford, MA 85	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Beverly, MA 15	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Burlington, MA 84	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Randolph, MA 55	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Swansea, MA 29	3	3	0	0	0	3	0	0	0	3	0	0	1	0	0	0	0	0	2	0	0	2	0	3	3
Housing Area Topsfield, MA 05	4	4	0	0	0	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4
Housing Area Wakefield, MA 03	1	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Natick R&D & ENGR Center	10	7	0	3	0	4	0	1	2	0	2	1	0	1(1)	0	0	0	0	2	0	2	2	0	4	0
US Army Materials Technology Lab ■	25	25	0	0	0	17	0	0	0	0	25	0	0	0	8(8)	0	0	17	0	0	0	0	0	0	0
USARC Attleboro	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Brockton (AMSA 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Pittsfield	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Roslindale	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Taunton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MASSACHUSETTS (Continued)																									
ARMY (Continued)																									
USARC Worcester	8	8	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
ARMY TOTALS	258	255	0	3	55	50	80	59	2	21	39	112	19	22(24)	8(8)	0	0	138	4	0	120	4	0	80	74
DEPARTMENT OF NAVY																									
NAS South Weymouth	8	8	0	0	0	8	0	0	0	0	6	2	0	0	0	0	0	8	0	0	8	0	0	0	0
NIROP Pittsfield	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NRC Quincy	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NSY Boston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NWIRP Bedford	2	2	0	0	0	0	0	0	0	0	2	0	0	0	2(2)	0	0	2	0	0	2	0	0	0	0
DEPARTMENT OF NAVY TOTALS	13	12	1	0	2	8	0	0	0	0	8	3	0	0	2(2)	0	0	10	0	0	11	0	0	2	2
AIR FORCE																									
AFP No. 28 Everett*	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
AFP No. 29 Lynn*	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Barnes Municipal Airport	7	7	0	0	1	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Hanscomb AFB	22	22	0	0	0	20	2	0	0	15	2	0	7	0	0	5	1	0	6	2	0	4	3	11	11
North Truro AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Otis ANGB	77	77	0	0	20	55	0	0	7	4	36	0	0	0	0	4	7	29	2	2	29	0	0	27	0

*These installations were transferred to the FUDS Program and will not be carried as Air Force installations in future reports.

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MASSACHUSETTS (Continued)																									
AIR FORCE (Continued)																									
Wellesly ANG	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Westover AFR	20	19	1	0	4	15	1	0	3	5	5	1	2	0	1(1)	1	0	3	1	4	2	1	0	10	10
Worcester ANGB	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	131	129	2	0	28	97	4	0	10	24	49	1	9	0	1(1)	10	8	32	9	8	31	5	3	52	22
MASSACHUSETTS TOTALS	402	396	3	3	85	155	84	59	12	45	96	116	28	22(24)	11(11)	10	8	180	13	8	162	9	3	134	98
MICHIGAN																									
ARMY																									
AFRC Saginaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Custer RFTA	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Detroit Arsenal and Detroit Tank Plant	15	15	0	0	0	15	0	0	0	0	0	15	0	0	0	0	0	0	2	0	0	0	0	0	0
Keweenaw Field Station	5	5	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontiac Storage Activity ■	10	10	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0
Tank-Automotive Support Activity-Selfridge	7	7	0	0	0	7	0	0	5	1	0	1	1	0	0	0	0	0	0	0	0	0	0	6	6
USARC Ann Arbor	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Bad Axe	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MICHIGAN (Continued)																									
ARMY (Continued)																									
USARC Battle Creek (AMSA 42)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Bay City	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Detroit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Flint	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Fraser	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Grand Rapids	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Inkster	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jackson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Kalamazoo	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lansing (AMSA 40, SUB1)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Livonia (AMSA 40)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Muskegon (AMSA 43)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Muksegon (Parslow)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Southfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Traverse City (AMSA 34)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
ARMY TOTALS	137	137	0	0	93	38	0	6	5	11	0	21	1	0	0	0	0	0	9	2	0	0	0	99	99

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MICHIGAN (Continued)																									
AIR FORCE																									
Calumet AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Empire Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K.I. Sawyer AFB	24	24	0	0	0	19	0	5	3	6	6	8	1	0	0	1	4	14	1	0	18	1	0	5	5
Phelps Collins Airport	17	17	0	0	0	12	0	0	0	0	8	0	0	0	0	0	0	8	0	0	8	0	0	0	0
Port Austin Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Selfridge ANGB	14	14	0	0	2	12	0	0	0	0	12	0	0	0	0	0	0	8	0	1	7	0	0	2	2
WK Kellogg Regional ANGB	6	6	0	0	3	3	0	0	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	3	3
Wurtsmith AFB ■	36	37	0	0	0	34	0	0	0	8	1	0	0	0	0	1	0	1	1	0	1	0	0	0	0
AIR FORCE TOTALS	100	100	0	0	5	82	0	5	3	14	30	8	1	0	0	2	4	34	2	1	37	1	0	10	10
DEFENSE LOGISTICS AGENCY																									
DFSP Escanaba	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
MICHIGAN TOTALS	238	238	0	0	98	121	0	11	8	25	31	29	2	0	0	2	4	35	11	3	38	1	0	109	109

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MINNESOTA																									
ARMY																									
AFRC Rochester	9	9	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
AFRC St. Cloud	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Twin Cities AAP ●	19	19	0	0	0	19	0	0	0	1	18	0	0	7(10)	1(1)	2	6	1	1	0	8	0	1	0	0
USARC Brainerd	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Buffalo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Cambridge	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Cannon Falls	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Duluth	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Faribault (Beebe)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Fergus Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Fort Snelling (AMSA 22)	35	35	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	35
USARC LeSueur	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Mankato	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Marshall	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC New Prague	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Paynesville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC South International Falls	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MINNESOTA (Continued)																									
ARMY (Continued)																									
USARC St. Joseph (AMSA 23)	10	10	0	0	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Wabasha	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Walker	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Willmar	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Winona	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Winthrop	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Worthington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARMY TOTALS	178	178	0	0	151	19	0	8	0	1	18	0	0	7(10)	1(1)	2	6	1	1	0	8	0	1	151	151
DEPARTMENT OF NAVY																									
ASTROGRPDET Bravo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
NIROP Fridley ●	4	4	0	0	1	0	0	0	0	0	3	0	0	0	3(7)	0	0	3	0	3	0	0	3	1	0
NIROP St. Paul	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
DEPARTMENT OF NAVY TOTALS	7	7	0	0	2	2	0	0	0	0	3	2	0	0	3(7)	0	0	5	0	3	2	0	3	2	1
AIR FORCE																									
Duluth ANGB	25	25	0	0	6	16	3	0	5	0	5	0	0	0	0	0	0	0	0	2	0	0	0	11	11
Duluth IAPT	4	4	0	0	0	4	0	0	0	4	0	0	3	1(1)	1(1)	0	0	0	0	0	0	0	0	3	3

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MINNESOTA (Continued)																									
AIR FORCE (Continued)																									
Minn/St. Paul IAPT ●	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minneapolis St. Paul	13	13	2	0	1	11	2	0	4	4	1	2	0	0	0	0	1	2	3	2	2	2	0	7	7
Nashwauk AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	45	43	2	0	7	32	5	0	9	8	6	2	3	1(1)	1(1)	0	1	2	3	4	2	2	0	21	21
MINNESOTA TOTALS	230	228	2	0	160	53	5	8	9	9	27	4	3	11(18)	2(2)	2	7	8	4	7	12	2	4	174	173
MISSISSIPPI																									
ARMY																									
AFRC Jackson	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Mississippi AAP	44	46	0	0	0	0	4	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brookhaven	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Greenville, MS	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Greenwood (AMSA 144)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Gulfport (Hickey)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Hattiesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jackson (Scott)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Jackson (Terry Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MISSISSIPPI (Continued)																									
ARMY (Continued)																									
USARC Laurel	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Lyon (Clarksdale)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Meridian	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Natchez	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Pascagoula 02	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Starkville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Tupelo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Vicksburg 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Vicksburg 03	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Vicksburg 04	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
ARMY TOTALS	135	135	0	0	87	0	4	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	87
DEPARTMENT OF NAVY																									
CBC Gulfport	10	10	0	0	1	8	0	0	1	0	7	0	0	1(1)	0	0	0	7	1	0	7	1	0	3	3
NAS Meridian	5	5	0	0	0	0	5	0	0	0	0	4	0	0	0	0	0	3	0	0	3	0	0	0	0
DEPARTMENT OF NAVY TOTALS	15	15	0	0	1	8	5	0	1	0	7	4	0	1(1)	0	0	0	10	1	0	10	1	0	3	3

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MISSISSIPPI (Continued)																									
AIR FORCE																									
Allen C. Thompson	5	5	0	0	0	4	1	0	2	0	1	2	0	0	0	0	0	3	0	0	3	0	0	2	2
Columbus AFB	27	27	0	0	0	27	0	0	10	13	1	0	4	3(3)	0	1	0	0	8	1	2	8	0	22	22
Gulfport MPT ANG PER	3	3	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Keesler AFB	22	15	7	0	0	15	7	0	1	10	3	1	0	0	0	0	0	11	0	0	8	0	0	1	1
Key Field ANGB	10	10	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	67	60	7	0	0	46	21	0	13	23	18	3	4	3(3)	0	1	0	14	8	1	13	8	0	25	25
MISSISSIPPI TOTALS	217	210	7	0	88	54	30	44	14	23	25	7	4	4(4)	0	1	0	24	9	1	23	9	0	115	115
MISSOURI																									
ARMY																									
Fort Leonard Wood	53	53	0	0	0	49	0	0	39	0	2	0	0	3(3)	0	0	0	1	5	1	7	4	0	43	41
Gateway AAP	10	10	0	0	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Housing Area St. Louis SPT CTR, MO	4	4	0	0	0	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4
Lake City AAP ●	35	35	0	0	0	35	0	0	0	0	35	0	0	7(7)	0	0	0	35	0	0	35	0	0	0	0
St. Louis AAP	7	7	0	0	0	2	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis Ordnance Plant	17	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bethany	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MISSOURI (Continued)																									
ARMY (Continued)																									
USARC Cape Griardeau	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Columbia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Farmington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Fort Leonard Wood (1350)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Leonard Wood (ECS 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Hannibal	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Independence, MO	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jefferson City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Joplin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Kirksville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Kirksville (Grim-Smith)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Maryville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Poplar Bluff	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Richards Gebaur	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Rolla	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Springfield	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16
USARC St. Charles	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MISSOURI (Continued)																									
ARMY (Continued)																									
USARC St. Louis (AMSA 55)	19	19	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19
USARC St. Louis (Hampton)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC St. Joseph	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC St. Louis 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Washington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	230	230	0	0	104	117	0	5	49	4	37	2	4	10(10)	0	0	0	36	5	1	42	4	0	161	159
NPRO St. Louis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
AIR FORCE																									
Jefferson ANGB	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Lambert IAPT	3	3	0	0	0	2	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Richards Gebaur AFR ■	9	9	0	0	0	9	0	0	3	5	0	0	2	3(3)	0	0	1	0	2	1	0	2	0	7	7
Rosecrans Memorial Airport	4	4	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0
Whiteman AFB	25	25	0	0	0	25	0	0	4	6	5	9	5	0	1(1)	1	0	12	1	1	10	1	0	10	10
AIR FORCE TOTALS	43	43	0	0	0	42	1	0	9	15	6	9	7	3(3)	1(1)	1	1	16	3	3	14	3	0	19	19
MISSOURI TOTALS	274	274	0	0	105	159	1	5	58	19	43	11	11	13(13)	1(1)	1	1	52	8	4	56	7	0	181	179

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
MONTANA																									
ARMY																									
Fort Missoula	6	6	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	3	0	3	3
NG Limestone Hills	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Billings (AMSA 5-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Bozeman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Butte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Great Falls	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Helena	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Helena (ECS 6)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Kalispell	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
ARMY TOTALS	52	52	0	0	43	6	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	3	0	46	46
AIR FORCE																									
Great Falls IAPT	8	8	0	0	0	4	4	0	4	0	4	0	0	0	0	0	4	0	0	1	0	0	0	4	4
Havre Radar Bomb Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalispell AFS Z179	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Malmstrom AFB	21	21	0	0	0	21	0	0	9	1	9	0	1	0	0	0	0	9	0	1	9	0	0	10	10
AIR FORCE TOTALS	31	31	0	0	0	27	4	0	13	2	13	0	1	0	0	0	4	10	0	2	10	0	0	14	14
MONTANA TOTALS	83	83	0	0	43	33	4	3	13	2	13	0	1	0	0	0	4	10	5	2	10	3	0	60	60

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEBRASKA																									
ARMY																									
Cornhusker AAP ●	65	65	0	0	0	65	0	0	0	31	34	0	0	59(17)	58(58)	1	58	5	0	0	7	0	0	0	0
USARC Columbus	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fairbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Fremont	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Grand Island	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Hastings	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Kearney	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Lincoln	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC McCook	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Meade (WET)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC North Platte	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC North Platte (AMSA 36)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Omaha (Ft. Omaha)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Omaha (Woolworth St.)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Plattsmouth	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Syracuse	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEBRASKA (Continued)																									
ARMY (Continued)																									
USARC Wymore	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
ARMY TOTALS	115	115	0	0	48	65	0	2	0	31	34	0	0	59(117)	58(58)	1	58	5	0	0	7	0	0	48	48
DEPARTMENT OF NAVY																									
NMCRC Omaha	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NRC Lincoln	2	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
DEPARTMENT OF NAVY TOTALS	3	3	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	1	1
AIR FORCE																									
Lincoln ANG	13	13	0	0	0	8	1	0	0	0	1	6	0	0	0	0	0	6	0	0	6	0	0	0	0
Offutt AFB	22	22	0	0	0	22	0	0	0	2	5	2	0	0	0	1	0	5	0	2	3	0	0	0	0
AIR FORCE TOTALS	35	35	0	0	0	30	1	0	0	2	6	8	0	0	0	1	0	11	0	2	9	0	0	0	0
NEBRASKA TOTALS	153	153	0	0	49	95	3	2	0	33	40	10	0	59(117)	58(58)	2	58	18	0	2	18	0	0	49	49
NEVADA																									
ARMY																									
AFRC Las Vegas	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEVADA (Continued)																									
ARMY (Continued)																									
Hawthorne AAP	119	119	0	0	0	78	0	41	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	130	130	0	0	9	78	0	43	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	9	9
DEPARTMENT OF NAVY																									
NAS Fallon	29	27	0	2	0	27	0	0	6	0	21	0	0	2(2)	0	0	0	21	0	1	21	0	0	6	6
DEPARTMENT OF NAVY TOTALS	29	27	0	2	0	27	0	0	6	0	21	0	0	2(2)	0	0	0	21	0	1	21	0	0	6	6
AIR FORCE																									
Indian Springs	13	7	6	0	0	6	6	0	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6	6
Nellis AFB	44	44	0	0	0	34	0	8	21	5	1	0	2	1(1)	2(2)	0	1	11	0	2	1	0	0	23	23
Reno Cannon IAPT	14	11	0	3	4	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Tonopah TTR	17	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
AIR FORCE TOTALS	88	65	6	3	4	50	6	8	27	9	1	0	5	1(1)	2(2)	0	1	11	0	2	1	0	0	36	36
NEVADA TOTALS	247	222	6	5	13	155	6	51	33	9	22	78	5	3(3)	2(2)	0	1	32	0	3	22	0	0	51	51

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW HAMPSHIRE																									
ARMY																									
Cold Regions Research and Eng Lab	18	18	0	0	0	18	0	0	0	10	8	0	0	0	1(1)	0	0	1	0	0	1	0	0	0	0
USARC Keene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Londonderry	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Manchester	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Rochester	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	39	39	0	0	21	18	0	0	0	10	8	0	0	0	1(1)	0	0	1	0	0	1	0	0	21	21
AIR FORCE																									
New Boston AFB	12	12	0	0	4	8	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
Pease AFB ● ■	32	32	0	0	0	30	0	0	0	8	3	0	1	1(1)	0	1	0	0	1	0	0	0	4	1	0
AIR FORCE TOTALS	44	44	0	0	4	38	0	0	7	8	3	0	1	1(1)	0	1	0	0	1	0	0	0	4	12	11
DEFENSE LOGISTICS AGENCY																									
DFSP Newington	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
NEW HAMPSHIRE TOTALS	84	84	0	0	25	57	0	0	7	19	11	0	1	1(1)	1(1)	1	0	2	1	0	2	0	4	33	32

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW JERSEY																									
ARMY																									
AFRC Red Bank (Monmouth)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARDEC (Picatinny Arsenal) ●	160	160	0	0	0	160	0	0	0	0	153	7	0	0	1(1)	2	0	85	0	1	86	0	0	0	0
Brittin USARC	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Dix ●	29	29	0	0	1	27	0	0	0	5	22	0	4	1(1)	0	0	8	8	0	0	15	0	0	5	0
Fort Momouth	9	9	0	0	0	5	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing Area Clementon, NJ	3	3	0	0	0	3	0	0	0	3	0	0	1	0	0	0	0	0	2	0	0	2	0	3	3
Housing Area Franklin Lakes, NJ	4	4	0	0	0	4	0	0	0	4	0	0	3	0	0	0	0	0	1	0	0	1	0	4	4
Housing Area Holmdel, NJ	4	4	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Housing Area Livingston, NJ	4	4	0	0	0	4	0	0	0	4	0	0	2	0	0	0	0	0	2	0	0	2	0	4	4
Housing Area Old Bridge, NJ	4	4	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Military Ocean Terminal, Bayonne	35	35	0	0	0	35	0	0	24	4	7	0	4	0	4(4)	0	0	7	0	0	7	0	0	28	28
Pedricktown Support Facility	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storck USARC, Northfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Stryker USARC, Trenton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Caven Point	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Edison (Kilmer)	14	14	0	0	13	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARAC Edison (Weigel)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Lodi	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW JERSEY (Continued)																									
ARMY (Continued)																									
USARC Mount Freedom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
ARMY TOTALS	309	309	0	0	49	246	0	13	24	28	182	12	14	1(1)	5(5)	2	8	100	7	1	108	5	0	92	87
DEPARTMENT OF NAVY																									
NAEC Lakehurst ●	45	43	0	1	0	43	0	0	4	11	31	2	6	8(8)	0	0	0	35	2	0	38	2	4	12	0
NAPC Trenton	11	11	0	0	0	9	0	0	0	1	9	1	0	0	0	0	0	9	0	1	10	0	0	0	0
NWS Earle Colts Neck ●	53	46	7	0	0	10	15	1	0	0	11	23	0	3(3)	7(7)	0	0	27	1	1	34	1	0	1	0
DEPARTMENT OF NAVY TOTALS	110	102	7	1	0	62	15	1	4	12	51	26	6	11(11)	7(7)	0	0	71	3	2	82	3	4	13	0
AIR FORCE																									
Atlantic City Airport	6	6	0	0	2	4	0	0	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	2	2
Coyle ANG Training	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gibbsboro AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
McGuire AFB	23	23	0	0	0	23	0	0	6	1	0	0	1	0	1(1)	0	0	0	0	3	4	0	0	7	7
AIR FORCE TOTALS	32	30	2	0	2	28	0	0	6	1	4	0	1	0	1(1)	0	0	4	0	4	8	0	0	9	9

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW JERSEY (Continued)																									
DEFENSE LOGISTICS AGENCY																									
DNSC Somerville	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISITCS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW JERSEY TOTALS	452	442	9	1	51	337	15	14	35	41	237	39	21	12(12)	13(13)	2	8	175	10	7	198	8	4	115	96
NEW MEXICO																									
ARMY																									
Fort Wingate ■	18	18	0	0	0	18	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alburquerque	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Alburquerque (Jenkins)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Artesia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Las Cruces	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Roswell	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Sante Fe	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Silver City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
White Sands Missile Range	63	63	0	0	0	63	0	0	16	0	35	11	0	2(2)	0	0	0	0	0	0	0	0	0	16	16
ARMY TOTALS	105	105	0	0	23	81	0	1	16	0	35	19	0	2(2)	0	0	0	0	0	0	0	0	0	39	39

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW MEXICO (Continued)																									
AIR FORCE																									
Air Force Plant 83*	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Cannon AFB	31	25	0	6	2	22	0	6	6	9	0	7	0	0	0	1	2	9	1	2	8	0	0	8	8
Holloman AFB	58	56	1	1	3	44	1	6	14	3	28	2	0	0	3(3)	2	0	31	1	1	29	0	0	17	17
Kirtland AFB	55	55	0	0	0	52	1	1	0	0	0	1	0	0	1(1)	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	145	137	1	7	6	118	2	13	20	12	28	10	0	0	4(4)	3	2	40	2	3	37	0	0	26	25
NEW MEXICO TOTALS	250	242	1	7	29	199	2	14	36	12	63	29	0	2(2)	4(4)	3	2	40	2	3	37	0	0	65	64
NEW YORK																									
ARMY																									
AFRC Albany	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
AFRC Ft. Wadsworth	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Horseheads	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Fort Drum	43	40	2	1	0	37	2	2	16	6	12	2	3	2(2)	1(1)	5	2	5	3	0	9	2	0	21	18
Fort Hamilton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Fort Tilden	3	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Fort Totten	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Housing Area Dryhill, NY	4	4	0	0	0	4	0	0	0	4	0	0	3	0	0	0	0	0	1	0	0	1	0	4	4
Housing Area Manhattan Beach, NY	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	3	3

*This installation was transferred to the FUDS Program and will not be carried as an Air Force installation in future reports.

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW YORK (Continued)																									
ARMY (Continued)																									
Housing Area Rocky Point, NY	4	4	0	0	0	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4
Housing Area Spring Valley, NY	4	4	0	0	0	4	0	0	0	4	0	0	3	0	0	0	0	0	1	0	0	1	0	4	4
Housing Area Tappan, NY	4	4	0	0	0	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4
NMCRC Fort Schuyler	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roosevelt USARC, Hempstead	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Seneca AD	57	36	19	2	22	3	10	19	0	0	3	1	0	0	0	0	0	3	0	0	3	0	0	22	0
Stewart Army Sub Post (USMAWP)	8	8	0	0	0	8	0	0	6	0	0	0	0	1(1)	2(2)	1	0	0	0	0	0	0	0	6	6
USA Bellmore Maintenance Facility	7	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Amherst	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Amityville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC AMSA 9	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Batavia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Bronx (Patterson)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Bronx (Yonkers)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Bullville	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Canandaigua	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Canton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW YORK (Continued)																									
ARMY (Continued)																									
USARC Corning	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Elizabethtown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Gerry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Glen Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Horseheads (AMSA 2G)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15
USARC Ithaca	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Kingston	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Little Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Liverpool	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Malone	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Massena	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Massena (ECS-1 Subshop A)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Newark	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Newburgh (ASF 10)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Newburgh (Dupont)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Newburgh (Stewart Field)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Niagara Falls (AMSA 5)	25	25	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25
USARC Ogdensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW YORK (Continued)																									
ARMY (Continued)																									
USARC Olean	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Orangeburg, NY	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
USARC Oswego	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Penn Yan	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Plattsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Poughkeepsie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Queens	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Rocky Point	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Schenectady (AMSA 8)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Schenectady (Bradt)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Syracuse (ASF 6)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Tappan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Tonawanda	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Utica	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Watertown	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Wayland	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Webster (AMSA 7G)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Watervliet Arsenal	13	13	0	0	0	13	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	7	7
West Point Military Academy	24	23	0	0	0	23	0	0	6	0	15	0	0	0	0	0	2	0	0	0	0	0	0	6	6

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW YORK (Continued)																									
ARMY (Continued)																									
Youngstown Training	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	497	473	21	3	336	108	12	35	38	25	30	5	19	3(3)	3(3)	6	4	9	6	0	13	5	0	398	373
DEPARTMENT OF NAVY																									
NIROP Rochester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
MNCRC Floyd Bennett Field	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
NMCRC Fort Schuyler	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NS New York ■	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NS New York Stapleton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
NS New York Staten Island	5	5	0	0	0	3	2	0	0	0	0	4	0	1(1)	0	0	0	4	0	0	4	0	0	0	0
NUSC Fishers Island	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NWIRP Bethpage	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0
NWIRP Calverton	12	9	3	0	0	8	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0
DEPARTMENT OF NAVY TOTALS	26	23	3	0	4	12	2	0	0	0	3	12	0	1(1)	0	0	0	8	0	0	16	0	0	4	3
AIR FORCE																									
Air Force Plant 38	9	9	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
Air Force Plant 59	4	4	0	0	0	4	0	0	0	4	0	0	0	3(3)	0	0	0	0	0	0	0	0	3	0	0
Gabreski Airport	11	8	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NEW YORK (Continued)																									
AIR FORCE (Continued)																									
Griffiss AFB ●	52	52	0	1	0	51	0	1	1	22	18	10	11	0	2(2)	1	4	31	1	3	34	0	0	12	0
Hancock Field MCC 10	15	15	0	0	7	7	1	0	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	14	14
Lockport Comm Facility Annex	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Niagara Falls ANGB	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Niagara Falls IAPT	14	12	1	0	0	12	1	0	2	4	5	0	1	0	0	1	0	2	1	3	2	1	0	4	4
Plattsburgh AFB ●	25	25	0	0	0	21	3	1	4	1	14	6	0	0	1(1)	1	0	20	1	3	16	1	0	5	0
Riverhead City Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roslyn ANGB	4	0	4	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schenectady Airport	4	4	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Stewart IAPT	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0
Utica Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	146	133	5	4	7	113	13	2	23	31	48	16	12	3(3)	3(3)	3	6	53	3	11	54	2	3	44	27
DEFENSE LOGISTICS AGENCY																									
DFSP Verona	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DNSC Scotia	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
NEW YORK TOTALS	671	631	29	7	347	235	27	37	61	56	83	33	31	7(7)	6(6)	9	10	72	9	11	85	7	3	446	403

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	Total # of Sites	Number of Sites																							
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		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NORTH CAROLINA																									
ARMY																									
AFRC Asheboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		11
AFRC Greensboro (Rives)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Fort Bragg	38	38	0	0	0	38	0	0	8	0	14	16	0	0	0	0	0	0	0	0	0	0	0	8	8
Military Ocean Terminal, Sunny Point	18	18	0	0	0	18	0	0	9	2	7	0	0	0	0	2	0	0	1	1	0	1	0	10	10
Tarheel Army Missile Plant	28	28	0	0	0	28	0	0	23	0	0	0	0	0	0	0	0	0	1	0	1	1	0	24	24
USARC Albemarle	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Asheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Brevard	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Charlotte	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Concord	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Durham	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Durham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Bragg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Garner	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Graham	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Greensboro	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Greenville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Hickory	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NORTH CAROLINA (Continued)																									
ARMY (Continued)																									
USARC High Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Kinston	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Lumberton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Morehead City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Raleigh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Rocky Mount	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Salisbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Wilmington	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Wilmington (AMSA 126-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Winston-Salem (King)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Winston-Salem 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
ARMY TOTALS	163	163	0	0	78	84	0	1	40	2	21	16	0	0	0	2	0	0	2	1	1	2	0	120	120
DEPARTMENT OF NAVY																									
MCAS Cherry Point	65	65	0	0	1	11	0	0	0	4	31	2	0	1(1)	0	0	0	10	0	0	36	0	0	1	0
MCB Camp LeJeune ●	106	88	7	11	49	0	10	7	0	0	12	35	0	2(2)	0	0	0	28	0	3	47	0	0	49	0
NADEP Cherry Point	5	5	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0
DEPARTMENT OF NAVY TOTALS	176	158	7	11	50	11	10	7	0	4	48	37	0	3(3)	0	0	0	43	0	3	88	0	0	50	0

(Continued)

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		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NORTH CAROLINA (Continued)																									
AIR FORCE																									
Badin AGS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charlotte/Douglas IAPT	3	3	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
Ft. Fisher AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pope AFB	11	11	0	0	0	11	0	0	2	4	0	4	0	1(1)	1(1)	0	0	6	0	1	4	0	1	2	2
Seymour-Johnson AFB	19	19	0	0	1	17	0	0	1	15	0	1	4	0	0	0	2	7	0	3	6	0	0	6	6
AIR FORCE TOTALS	35	34	1	0	1	30	1	0	3	19	0	7	4	1(1)	1(1)	0	2	15	0	4	12	0	1	8	8
NORTH CAROLINA TOTALS	374	355	8	11	129	125	11	8	43	25	69	60	4	4(4)	1(1)	2	2	58	2	8	101	2	1	178	128
NORTH DAKOTA																									
ARMY																									
Stanley R. Mickelson, SC, MISR4, RSLS	2	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
USARC Bismarck (AMSA 23)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16
USARC Fargo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Grand Forks	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
ARMY TOTALS	32	32	0	0	30	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	30	30

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		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
NORTH DAKOTA (Continued)																									
AIR FORCE																									
Finley AFS Z 29	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Forks AFB	6	7	0	0	0	7	0	0	0	2	2	1	1	1(1)	0	0	0	3	0	1	3	0	0	1	1
Hector Field ANGB	11	11	0	0	6	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Minot AFB	11	11	0	0	0	9	0	0	2	7	0	0	1	0	0	5	2	1	3	2	3	3	0	6	6
Watford City Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	30	30	0	0	6	18	4	0	2	9	6	1	2	1(1)	0	5	2	4	3	3	6	3	0	13	13
DEFENSE LOGISTICS AGENCY																									
DFSP Grand Forks	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
NORTH DAKOTA TOTALS	63	63	0	0	36	20	4	1	2	9	7	1	2	1(1)	0	5	2	5	5	3	7	3	0	43	43
OHIO																									
ARMY																									
Lima Army Tank Plant	16	16	0	0	0	16	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0
Ravenna AAP	31	31	0	0	0	31	0	0	9	0	0	19	0	0	0	0	0	0	2	1	0	2	0	11	10
USARC Akron (Schaffner)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Akron (Woodford)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OHIO (Continued)																									
ARMY (Continued)																									
USARC Bellaire	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Bryan (AMSA 72G SUB 1)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Cadiz	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Canton 01	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Cincinnati (Morrow)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Columbus (300)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Columbus (AMSA 56)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Columbus (ASF 33)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Columbus (Whitehall)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Dayton	9	9	0	0	6	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Dayton (DESC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Delaware	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fremont, OH	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Jamestown	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Kenton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Kings Mills (AMSA 59)	11	11	0	0	7	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Lima (AMSA 58 SUB 1)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OHIO (Continued)																									
ARMY (Continued)																									
USARC Lima (Faze)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Mansfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Marietta	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Marion	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Milan	13	13	0	0	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Parma (Mote)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Perrysburg (AMSA 72)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Portsmouth	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Sharonville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Springfield, OH	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Toledo (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Troy, OH	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Warren	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Warrensville Heights	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Wooster	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Youngstown (Kefurt)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Zanesville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	268	268	0	0	206	47	0	15	9	0	0	35	0	0	0	0	0	0	2	1	0	2	0	217	216

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OHIO (Continued)																									
DEPARTMENT OF NAVY																									
NWIRP Toledo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
AIR FORCE																									
Air Force Plant 36	33	33	0	0	0	31	2	0	3	6	19	0	0	0	0	4	0	0	4	0	0	4	0	7	7
Air Force Plant 85	9	9	0	0	0	9	0	0	4	1	4	0	0	0	0	1	3	0	1	1	0	1	0	5	5
Blue Ash ANG	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Perry ANGB	2	2	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Mansfield Lahm Airport	8	8	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Newark AFB	10	10	0	0	1	9	0	0	8	0	1	0	0	0	0	1	0	0	0	1	0	0	0	9	9
Rickenbacker ANGB ■	33	33	0	0	5	12	16	0	6	1	16	0	0	0	0	1	0	0	0	1	0	0	0	11	11
Springfield-Beckley ANGB	6	6	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Toledo Express Airport	9	9	0	0	0	2	7	0	2	0	6	1	0	0	0	0	0	1	0	1	0	0	0	2	2
Wright-Patterson AFB ●	65	65	0	0	8	54	8	0	17	4	34	0	1	4(4)	0	2	1	0	2	1	0	0	1	26	0
Youngstown Municipal	5	5	0	0	0	5	0	0	2	1	2	0	0	0	0	0	0	0	0	1	0	0	0	2	2
Zanesville AGS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
AIR FORCE TOTALS	183	181	2	0	15	123	50	0	42	13	97	1	1	4(4)	0	8	4	1	7	7	0	5	1	63	36

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OHIO (Continued)																									
DEFENSE LOGISTICS AGENCY																									
DCSC Columbus	25	24	0	1	0	24	0	1	18	5	0	1	0	0	0	3	2	1	3	1	2	2	0	20	20
DESC Dayton	6	6	0	0	0	6	0	0	5	1	0	0	0	0	0	0	1	0	0	0	1	0	0	5	3
DFSP Cincinnati	1	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
DEFENSE LOGISTICS AGENCY TOTALS	32	31	0	1	0	31	0	1	24	6	0	1	0	0	0	2	3	1	3	1	3	2	0	26	24
OHIO TOTALS	484	481	2	1	222	201	50	16	75	19	97	37	1	4(4)	0	11	7	2	12	9	3	9	1	307	277
OKLAHOMA																									
ARMY																									
AFRC Broken Arrow (AMSA 20)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
AFRC Midwest City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Fort Sill	44	44	0	0	0	43	1	0	28	0	0	16	0	0	0	0	0	13	0	0	13	0	0	28	28
McAlester AAP	43	43	0	0	0	43	0	0	34	0	0	9	0	0	0	0	0	9	0	0	9	0	0	34	34
USARC Ada	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Antlers	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Ardmore	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Chickasha	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Clinton	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Duncan	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OKLAHOMA (Continued)																									
ARMY (Continued)																									
USARC Durant	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Enid	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Fort Sill (ECS 65)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Guymon	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Lawton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC McAlester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Miami	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Muskogee	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Norman	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Norman 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Oklahoma City (50th Street)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Oklahoma City (Krowse)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Oklahoma City (Perez)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Okmulgee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Ponca City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Shawnee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Stigler	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OKLAHOMA (Continued)																									
ARMY (Continued)																									
USARC Stillwater	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Tulsa (Reese)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Tulsa 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARMY TOTALS	192	192	0	0	105	86	1	0	62	0	0	25	0	0	0	0	0	22	0	0	22	0	0	167	167
AIR FORCE																									
Air Force Plant 3	14	14	0	0	0	13	1	0	0	6	7	0	0	0	0	0	0	0	0	0	3	0	0	0	0
Altus AFB	11	11	0	0	0	10	1	0	0	2	8	0	2	0	0	0	0	7	0	0	7	0	0	2	2
Tinker AFB ●	36	36	0	0	3	33	0	0	3	8	17	0	3	4(4)	2(2)	1	1	0	3	1	0	1	1	10	9
Tulsa IAPT	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vance AFB	21	19	2	0	0	19	2	0	1	9	1	0	5	0	1(1)	0	0	0	4	0	0	4	0	10	10
Will Rogers World	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
AIR FORCE TOTALS	84	82	2	0	4	76	4	0	4	25	33	0	10	4(4)	3(3)	1	1	7	7	1	10	5	1	23	21
OKLAHOMA TOTALS	276	274	2	0	109	162	5	0	66	25	33	25	10	4(4)	3(3)	1	1	29	7	1	32	5	1	190	188
OREGON																									
ARMY																									
AFRC Coos Bay	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
AFRC Roseburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OREGON (Continued)																									
ARMY (Continued)																									
AFRC Warrenton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Umatilla Army Depot Activity	116	116	0	0	0	116	0	0	39	0	76	0	0	0	0	0	0	76	0	0	76	0	0	39	0
USARC Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Corvallis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Eugene	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Medford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Portland (Airport)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Portland (South)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Portland (West)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Salem	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARMY TOTALS	152	152	0	0	35	116	0	1	39	0	76	0	0	0	0	0	0	76	0	0	76	0	0	74	35
AIR FORCE																									
Keno AFS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Kingsley Field ANGB	14	14	0	0	6	7	0	0	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	7	7
Mount Hebo AFB	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Bend AGS	8	8	0	0	3	5	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
Portland IAPT	11	11	0	0	2	8	1	0	2	4	2	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
OREGON (Continued)																									
AIR FORCE (Continued)																									
Salen Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	36	36	0	0	11	23	1	0	7	6	4	0	0	0	0	0	0	1	0	2	0	0	0	18	18
OREGON TOTALS	188	188	0	0	46	139	1	1	46	6	80	0	0	0	0	0	0	77	0	2	76	0	0	92	53
PENNSYLVANIA																									
ARMY																									
AFRC Beaver Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Bellefonte	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Erie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Folsom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Philadelphia 06	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
C.E. Kelly Support Facility	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Carlisle Barracks	4	4	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	3
Family Housing Pittsburgh 43	1	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Fort Indiantown Gap	6	6	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	5	5
Hays AAP	5	5	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	4	0
Housing Area Coraopolis PI-71, PA	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
Housing Area Coraopolis PI-72, PA	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Dorseyville PI-03, PA	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Housing Area Elizabeth PI-42, PA	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Housing Area Finleyville, PA 52	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Herminie PI-37, PA	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Irwin PA-36, PA	1	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Housing Area Monroeville PI-25, PA	2	2	0	0	0	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2
Housing Area Rural Ridge, PA	3	3	0	0	0	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	3
Letterkenny Army Depot ●	78	78	0	0	1	68	5	2	12	14	40	8	7	1(1)	0	3	2	41	3	0	43	2	0	22	10
Manor Launch Site	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Scranton Army Ammunition Plant	14	14	0	0	4	10	0	0	10	0	0	0	0	1(1)	0	0	0	0	0	0	0	0	0	14	0
Tacony Warehouse ■	13	13	0	0	0	13	0	0	0	0	13	0	0	0	0	0	0	13	0	0	0	0	0	0	0
Tobyhanna AD ●	65	65	0	0	0	64	1	0	0	0	27	38	0	1(1)	2(3)	0	0	2	0	0	2	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
USARC Altoona	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Ashley	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Belle Vernon	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Bethlehem	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Bloomsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Bristol	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Brookville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Brownsville, PA	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Butler	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Center Square	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Chambersburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Chester	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Clarion	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Clearfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Downingtown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Du Bois	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Edgemont	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
USARC Erie	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Farrell	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Franklin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Germantown	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Gettysburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Greencastle (AMSA 113)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15
USARC Greensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Greensburg (AMSA 104)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Harrisburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Hazelton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Horsham 01	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Horsham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Huntingdon	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Indiana	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Johnston 01	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
USARC Johnston 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
USARC Kane	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Kittanning	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lancaster	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Lewsiburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Lewistown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Lock Haven	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Marcus Hook	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Meadville	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Castle (AMSA 110)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC New Cumberland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC New Kensington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Norristown	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC North Park	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Northeast Philadelphia	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Oil City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Pittsburgh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Pittsburgh 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
USARC Pittsburgh 03	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Punxsutawney (AMSA 106)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Quakertown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Ranshaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Reading	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Schuylkill Haven	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Scranton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC St. Mary's	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC State College	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Stockertown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Tobyhanna	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Uniontown	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Washington, PA	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Wilkes-Barre	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
USARC Wilkes-Barre (AMSA 32G)	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
USARC Williamsport	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
ARMY (Continued)																									
USARC Willow Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Willow Grove (ASF 28)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Willow Grove (Wurts)	19	19	0	0	18	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	18
USARC York	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
ARMY TOTALS	645	645	0	0	436	182	6	16	25	35	80	46	28	3(3)	2(3)	3	2	56	6	0	48	5	0	494	464
DEPARTMENT OF NAVY																									
MCRC Wyoming PA	2	0	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
NADC Warminster ●	10	10	0	0	0	9	0	0	1	0	8	0	0	0	0	0	0	8	0	0	9	0	0	1	0
NAS Willow Grove	11	11	0	0	0	10	0	0	5	0	4	0	0	1(1)	0	0	0	5	1	0	4	0	0	5	5
NASO Philadelphia ■	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAVHOSP Philadelphia ■	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NSY Philadelphia ■	17	15	1	1	3	12	0	0	0	4	8	1	0	1(1)	0	0	0	8	0	4	9	0	0	3	3
SPCC Mechanicsburg	11	11	0	0	1	8	1	0	4	0	3	1	0	1(3)	0	0	2	3	0	0	5	0	0	5	5
DEPARTMENT OF NAVY TOTALS	53	49	3	1	6	39	1	2	10	4	23	4	0	3(5)	0	0	2	26	1	4	29	0	0	16	15

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PENNSYLVANIA (Continued)																									
AIR FORCE																									
Fort Indiantown Gap ANGB	3	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greater Pittsburgh ANGB	6	6	0	0	0	5	0	0	3	1	0	0	0	1(1)	0	1	0	0	0	0	0	0	0	3	3
Olmsted Field	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Pittsburgh IAPT	6	6	0	0	0	6	0	0	4	0	1	0	0	0	0	0	0	0	0	1	0	0	0	4	4
State College ANG	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Willow Grove AFR	7	7	1	0	0	5	1	0	3	3	0	0	2	0	0	1	0	0	0	2	0	0	0	5	5
Willow Grove ANG	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	26	20	6	0	1	16	6	0	10	4	1	0	2	1(1)	0	2	0	0	0	2	0	0	0	13	12
DEFENSE LOGISTICS AGENCY																									
DDRE New Cumberland	45	45	0	0	0	45	0	0	0	9	11	25	0	35(36)	1(1)	5	0	39	6	0	39	6	0	6	6
DPSC Philadelphia	16	16	0	0	0	16	0	0	14	0	2	0	0	2(2)	0	0	0	2	0	0	2	0	0	14	0
DEFENSE LOGISTICS AGENCY TOTALS	61	61	0	0	0	61	0	0	14	9	13	25	0	37(38)	1(1)	5	0	41	6	0	41	6	0	20	6
PENNSYLVANIA TOTALS	785	775	9	1	443	298	13	18	59	52	117	75	30	44(47)	3(4)	10	4	123	13	6	118	11	0	543	497
PUERTO RICO																									
ARMY																									
Camp Santiago	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
PUERTO RICO (Continued)																									
ARMY (Continued)																									
Fort Allen	6	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Buchanan	24	24	0	0	0	24	0	0	16	1	1	0	1	0	0	0	0	0	2	0	0	2	0	19	18
ARMY TOTALS	31	31	0	0	0	25	0	6	16	1	1	0	1	0	0	0	0	0	2	0	0	2	0	19	18
DEPARTMENT OF NAVY																									
NRTF Isabella	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NS Roosevelt Roads	22	22	0	0	2	16	1	0	4	0	13	0	0	3(3)	0	0	0	13	3	0	13	3	0	9	9
NSGA Sabana Seca ●	7	7	0	0	0	3	3	0	0	0	3	3	0	3(4)	0	0	0	6	1	0	6	1	0	1	0
Supship San Juan	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3	3
DEPARTMENT OF NAVY TOTALS	33	33	0	0	3	19	4	0	4	0	16	3	0	6(7)	0	0	0	19	7	0	19	7	0	14	13
AIR FORCE																									
Muniz ANG	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Puerto Rico IAPT	10	10	0	0	0	2	5	0	0	0	5	0	0	0	0	0	0	0	0	3	0	0	0	0	0
Punta Salinas ANGB	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0
AIR FORCE TOTALS	14	14	0	0	1	5	5	0	0	0	8	0	0	0	0	0	0	3	0	3	3	0	0	1	0
PUERTO RICO TOTALS	78	78	0	0	4	49	9	6	20	1	25	3	1	6(7)	0	0	0	22	9	3	22	9	0	34	31

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
RHODE ISLAND																									
ARMY																									
AFRC Providence (Hopkins)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Housing Area Davisville, RI	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
Housing Area Smithfield, RI	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	3	3
USARC Bristol, RI	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Cranston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Nathaniel Greene	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Lincoln (AMSA 68G)	13	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Providence (Harwood)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Warwick	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	37	37	0	0	20	4	13	0	0	4	0	0	2	0	0	0	0	0	2	0	0	2	0	24	24
DEPARTMENT OF NAVY																									
AFRC Providence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
CBC Davisville ● ■	17	16	1	0	0	14	0	0	0	7	7	0	0	2(2)	1(1)	0	0	13	0	0	14	0	0	0	0
NAS Charlestown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAS Quonset Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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Department of Defense Environmental Restoration Program
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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
RHODE ISLAND (Continued)																									
NAVY (Continued)																									
NETC Newport ●	20	18	2	0	0	6	0	0	0	0	11	9	0	0	0	0	0	18	0	0	20	0	0	0	0
DEPARTMENT OF NAVY TOTALS	40	37	3	0	3	20	0	0	0	7	18	9	0	2(2)	1(1)	0	0	31	0	0	34	0	0	3	3
AIR FORCE																									
Coventry AGS	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Smithfield	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quonset St. Airport	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
AIR FORCE TOTALS	3	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
DEFENSE LOGISTICS AGENCY																									
DFSP Melville	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
RHODE ISLAND TOTALS	82	74	5	0	24	26	13	0	0	11	18	11	2	2(2)	1(1)	0	0	33	2	0	36	2	0	28	27
SOUTH CAROLINA																									
ARMY																									
Fort Jackson	37	35	1	1	4	14	16	3	7	0	6	8	0	0	0	0	0	4	0	0	4	0	0	11	10

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
SOUTH CAROLINA (Continued)																									
ARMY (Continued)																									
USARC Aiken	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Anderson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Charleston	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Clemson	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Columbia (Forest Drive)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Columbia 02	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Florence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Jackson (ECS 124-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Fort Jackson (Lee Rd.)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Fort Jackson (McWhorter)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Greenville 01 (Mahon)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Greenville 02 (Kukowski)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Myrtle Beach	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Orangeburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Rock Hill	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
SOUTH CAROLINA (Continued)																									
DEPARTMENT OF ARMY (Continued)																									
USARC Spartanburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC York, SC	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	132	130	1	1	97	14	16	5	7	0	6	8	0	0	0	0	0	4	0	0	4	0	0	104	103
DEPARTMENT OF NAVY																									
FLEMINEWARTRACEN Charleston	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
MCAS Beaufort	46	41	0	5	10	13	0	0	0	0	3	16	0	0	0	0	0	11	0	0	17	0	0	10	10
MCRD Parris Island	24	24	0	0	10	8	1	0	1	0	2	9	0	1(1)	0	0	0	6	1	0	12	1	0	12	12
NAVBASE Charleston	36	36	0	0	9	0	0	0	0	0	18	9	0	4(4)	0	0	0	0	0	0	27	0	0	9	9
NAVRESCEN Charleston	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NSC Charleston	9	0	9	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	9	0	0	0	0
NWS Charleston	57	37	17	3	0	2	0	0	0	0	13	15	0	0	0	0	0	0	0	0	28	0	0	0	0
DEPARTMENT OF NAVY TOTALS	174	138	28	8	29	23	1	0	1	0	36	60	0	5(5)	0	0	0	17	1	0	95	1	0	31	31
AIR FORCE																									
Charleston AFB	41	41	0	0	0	41	0	0	3	20	0	0	0	0	1(1)	0	20	0	0	21	0	0	0	3	3
Jedburg Radar Site	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
SOUTH CAROLINA (Continued)																									
AIR FORCE (Continued)																									
McEntire ANGB	12	12	0	0	4	8	0	0	0	0	8	0	0	0	0	0	0	8	0	0	8	0	0	4	4
Myrtle Beach AFB ■	50	44	0	6	3	17	0	6	1	1	11	9	0	1(1)	0	0	0	14	0	0	14	0	0	4	4
Shaw AFB	31	24	0	7	0	16	0	7	2	4	6	14	0	2(2)	0	2	1	17	2	0	16	0	0	2	2
AIR FORCE TOTALS	135	121	0	13	7	82	0	13	6	25	25	23	0	3(3)	1(1)	2	21	39	2	21	38	0	0	13	13
DEFENSE LOGISTICS AGENCY																									
DFSP Charleston	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
SOUTH CAROLINA TOTALS	442	390	29	22	133	120	17	18	14	26	67	91	0	8(8)	1(1)	2	22	60	3	22	137	1	0	148	147
SOUTH DAKOTA																									
ARMY																									
USARC Aberdeen	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Sioux Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
ARMY TOTALS	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16
AIR FORCE																									
Ellsworth AFB ●	23	22	0	1	0	18	0	1	0	7	3	1	0	0	0	5	0	5	4	1	5	0	0	0	0

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
SOUTH DAKOTA (Continued)																									
AIR FORCE (Continued)																									
Joe Foss Field ANGB	11	11	0	0	5	6	0	0	4	2	0	0	0	0	0	2	0	0	0	2	0	0	2	9	9
AIR FORCE TOTALS	34	33	0	1	5	24	0	1	4	9	3	1	0	0	0	7	0	5	4	3	5	0	2	9	9
SOUTH DAKOTA TOTALS	50	49	0	1	21	24	0	1	4	9	3	1	0	0	0	7	0	5	6	1	5	0	2	25	25
TENNESSEE																									
ARMY																									
AFRC Johnson City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
Holston AAP	30	30	0	0	3	27	0	0	0	1	1	25	1	1(1)	1(1)	0	0	1	0	0	1	0	0	4	0
Milan Army Ammunition Plant ●	22	22	0	0	0	22	0	0	0	2	20	0	0	1(1)	1(1)	0	2	18	0	0	19	0	0	0	0
USARC Chattanooga	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Chattanooga (Guerry)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Greeneville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Knoxville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Lyell (AFRC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Memphis 01	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Memphis 02	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TENNESSEE (Continued)																									
ARMY (Continued)																									
USARC Nashville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Oak Ridge	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Volunteer AAP	17	17	0	0	0	10	7	0	6	0	4	0	0	0	0	0	0	4	0	0	4	0	0	6	6
ARMY TOTALS	111	111	0	0	43	59	7	2	6	3	25	25	1	2(2)	2(2)	0	2	23	0	0	24	0	0	50	46
DEPARTMENT OF NAVY																									
NAS Memphis	67	35	26	6	21	0	0	0	0	0	0	46	0	0	0	0	0	0	0	0	45	0	0	21	21
NAVMARCORESCEN Knoxville	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
NWIRP Bristol	9	9	0	0	4	0	5	0	0	0	0	5	0	0	0	0	0	5	0	0	5	0	0	4	4
DEPARTMENT OF NAVY TOTALS	77	45	26	6	25	0	5	0	0	0	1	51	0	0	0	0	0	6	0	0	51	0	0	25	25
AIR FORCE																									
Arnold AFB	24	24	0	0	0	23	1	0	0	4	19	0	3	3(3)	2(2)	0	3	0	0	1	0	0	0	3	3
Lovell Field	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
McGhee Tyson Airport	13	10	3	0	1	2	10	0	0	0	7	3	0	0	0	0	0	3	0	0	3	0	0	1	1
Memphis IAPT	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TENNESSEE (Continued)																									
AIR FORCE (Continued)																									
Nashville ANGB	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	40	36	4	0	1	26	12	0	0	4	27	3	3	3(3)	2(2)	0	3	3	0	1	3	0	0	4	4
DEFENSE LOGISTICS AGENCY																									
DDMT Memphis ♦	75	75	0	0	0	75	0	0	6	0	75	0	0	2(2)	1(1)	0	0	74	0	0	74	0	0	6	0
DEFENSE LOGISTICS AGENCY TOTALS	75	75	0	0	0	75	0	0	6	0	75	0	0	2(2)	1(1)	0	0	74	0	0	74	0	0	6	0
TENNESSEE TOTALS	303	267	30	6	69	160	24	2	12	7	128	79	4	7(7)	5(5)	0	5	106	0	1	152	0	0	85	75
TEXAS																									
ARMY																									
AFRC Austin (Camp Mabry)	15	15	0	0	12	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
AFRC Corpus Christi (AMSA 7)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
AFRC Mesquite	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Midland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Camp Bullis	7	7	0	0	0	6	0	1	4	0	1	2	0	0	0	0	0	0	0	0	0	0	0	4	4
Canyon Lake Recreation Area	1	1	0	0	1	0	0	0	0	0	0	0	0	1(1)	0	0	0	0	0	0	0	0	0	1	1
Fort Bliss	44	44	0	0	0	44	0	0	23	6	7	8	5	0	0	0	0	6	0	0	7	0	0	28	28
Fort Hood	66	66	0	0	0	66	0	0	42	0	0	24	0	1(1)	0	0	0	1	1	0	1	0	0	42	25

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
ARMY (Continued)																									
Fort Sam Houston	24	24	0	0	0	24	0	0	14	0	4	3	0	3(3)	5(5)	0	0	0	0	0	0	0	0	14	14
Fuels and Lubricant Research Lab	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lone Star AAP ●	60	60	0	0	0	59	0	0	14	11	33	2	4	1(1)	0	5	0	29	3	0	30	3	0	21	16
Longhorn AAP ●	55	55	0	0	36	18	0	0	4	0	13	1	0	2(3)	0	0	0	14	0	0	12	0	0	40	0
Red River Army Depot	31	31	0	0	1	30	0	0	13	0	6	9	0	1(1)	1(1)	1	1	1	0	1	0	0	0	14	13
USA Houston Armed Forces Center	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Abilene	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Alice	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Amarillo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Amarillo 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Arlington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Austin (Camp Mabry)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15
USARC Austin 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Austin 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Bay City, TX	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Beaumont (AMSA 6)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
USARC Brownsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
ARMY (Continued)																									
USARC Bryan (Moore)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Bryan 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Conroe (ASF 62)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Corpus Christi (Memorial)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Dallas 01 (Muchert)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Dallas 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Dallas 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Denton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC El Paso	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Bliss (AMSA 12)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Fort Bliss (Biggs Field Pet)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Worth (HOT)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Worth 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Fort Worth (AMSA 5, SUB 2)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Grand Prairie (ASF 13)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA					Total	
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
ARMY (Continued)																									
USARC Harlingen (AMSA 7, SUB 1)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Houston 02 (AMSA 4)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Huntsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Laredo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lubbock	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Lubbock (AMSA 11)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Lubbock (Hospital TNG)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC McAllen	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC North Fort Hood (ESC 64)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Paris	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Pasadena	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Port Arthur	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Rio Grande City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC San Antonio (Boswell)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC San Antonio (Callaghan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
ARMY (Continued)																									
USARC San Marcos	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Seagoville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Sinton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Texarkana (AMSA 5 SUB 4)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Tyler	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Victoria	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Waco	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Waco (AMSA 8)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Wichita Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Yoakum	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
ARMY TOTALS	568	568	0	0	310	247	0	9	114	17	64	49	9	9(10)	6(6)	6	1	51	4	1	50	3	0	436	373
DEPARTMENT OF NAVY																									
NAS Chase Field ■	6	6	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	6	0	0	6	0	0	0	0
NAS Corpus Christi	21	15	0	6	12	0	3	0	0	0	0	9	0	0	0	0	0	3	0	0	9	0	0	12	12
NAS Dallas	72	59	0	13	4	0	0	0	0	0	0	68	0	0	0	0	0	7	0	0	20	0	0	4	4
NAS Kingsville	36	27	6	3	1	6	5	0	0	0	14	21	0	0	0	0	0	11	0	0	35	0	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NAVMARCORESCEN Lubbock	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
NWIRP Dallas	7	7	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0
NWIRP McGregor	33	32	1	0	0	2	0	0	0	0	9	0	0	1(1)	0	0	0	8	0	0	9	0	0	0	0
DEPARTMENT OF NAVY TOTALS	176	147	7	22	17	8	14	0	0	0	24	111	0	1(1)	0	0	0	35	0	1	86	0	0	17	17
AIR FORCE																									
Air Force Plant 4 ●	30	29	1	0	0	29	1	0	4	23	1	0	1	1(1)	0	5	17	0	4	10	0	3	2	8	0
Bergstrom AFB ■	30	30	0	0	0	28	0	1	18	2	9	0	0	0	0	1	0	5	0	1	5	0	0	18	18
Brooks AFB	11	11	0	0	0	10	0	0	0	9	0	0	8	0	0	0	0	0	0	1	0	0	0	8	8
Carswell AFB ■	18	17	0	1	0	9	0	0	5	9	0	4	1	0	0	5	0	7	3	0	8	3	0	9	9
Dyess AFB	43	41	2	0	0	40	2	0	0	22	15	2	5	0	0	1	16	15	1	0	30	0	0	5	5
Ellington ANGB	4	4	0	0	2	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Garland ANGB	2	1	1	0	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Goodfellow AFB	5	5	0	0	0	5	0	0	0	4	1	0	4	1(1)	0	0	0	0	0	0	0	0	0	4	4
Kelly AFB	51	51	0	0	0	50	0	0	1	9	5	0	2	2(2)	6(6)	1	0	0	3	1	0	1	7	4	3
La Porte ANGB	2	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Lackland AFB	24	24	0	0	0	24	0	0	1	20	0	0	16	0	0	2	0	0	3	3	1	2	0	19	19

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
TEXAS (Continued)																									
AIR FORCE (Continued)																									
Laughlin AFB	13	13	0	0	0	13	0	0	2	11	0	0	9	0	0	1	0	0	2	0	0	2	0	13	13
Nederland AGS	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Randolph AFB	21	21	0	0	0	20	0	0	7	11	1	0	8	2(2)	0	3	0	0	2	1	1	0	0	15	15
Reese AFB	13	13	0	0	0	13	0	0	2	10	0	0	4	0	0	4	0	0	4	1	0	4	2	10	10
Sheppard AFB	18	18	0	0	0	18	0	0	7	9	0	0	5	0	0	3	0	0	4	1	0	4	0	16	16
AIR FORCE TOTALS	286	278	7	1	2	262	7	1	48	140	36	6	63	6(6)	6(6)	27	33	27	26	22	45	19	11	132	123
TEXAS TOTALS	1030	993	14	23	329	517	21	10	162	157	124	166	72	16(17)	12(12)	33	34	113	30	24	181	22	11	585	513
UTAH																									
ARMY																									
Dugway Proving Ground	169	169	0	0	0	26	140	3	0	4	21	143	4	38(38)	0	0	0	164	0	0	162	0	0	4	4
Fort Douglas ■	7	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0
Green River Test Site	12	12	0	0	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Tooele AD, North Area ●	46	46	0	0	0	46	0	0	1	1	44	0	0	0	0	1	0	44	0	1	44	0	0	1	0
Tooele AD, South Area	28	28	0	0	0	28	0	0	0	0	28	0	0	1(1)	0	0	0	17	0	0	21	0	0	0	0
USARC Logan	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Ogden	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
UTAH (Continued)																									
ARMY (Continued)																									
USARC Ogden (AMSA 31)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Ogden Depot	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Pleasant Grove	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Provo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Salt Lake City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Salt Lake City (ASF 24)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
ARMY TOTALS	323	323	0	0	61	112	140	3	13	5	100	143	4	39(39)	0	1	0	232	0	1	227	0	0	78	77
DEPARTMENT OF NAVY																									
NIROP Magna	7	6	0	1	0	1	0	0	0	0	6	1	0	0	0	0	0	0	0	0	1	0	0	0	0
DEPARTMENT OF NAVY TOTALS	7	6	0	1	0	1	0	0	0	0	6	1	0	0	0	0	0	0	0	0	1	0	0	0	0
AIR FORCE																									
Air Force Plant 78	12	12	0	0	0	12	0	0	5	7	0	0	5	0	0	2	0	0	2	0	0	2	0	12	12
Francis Peak	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Hill AFB ●	63	61	2	0	2	50	10	0	11	8	12	0	0	1(1)	2(2)	6	3	0	4	5	0	3	2	16	8

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
UTAH (Continued)																									
AIR FORCE (Continued)																									
Salt Lake City IAPT	7	7	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	83	81	2	0	3	62	17	0	16	15	19	0	5	1(1)	2(2)	8	3	0	6	5	0	5	2	29	20
DEFENSE LOGISTICS AGENCY																									
DDOU Ogden ●	44	44	0	0	0	44	0	0	21	22	0	1	6	2(2)	0	6	4	7	3	2	12	3	1	30	29
DEFENSE LOGISTICS AGENCY TOTALS	44	44	0	0	0	44	0	0	21	22	0	1	6	2(2)	0	6	4	7	3	2	12	3	1	30	29
UTAH TOTALS	457	454	2	1	64	219	157	3	50	42	125	145	15	42(42)	2(2)	15	7	239	9	8	240	8	3	137	126
VERMONT																									
ARMY																									
Ethan Allen Firing Range	11	11	0	0	8	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Chester, VT	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Montpelier	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Rutland (Courcelle)	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Winooski	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ARMY TOTALS	28	28	0	0	25	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VERMONT (Continued)																									
AIR FORCE																									
Burlington IAPT	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VERMONT TOTALS	30	30	0	0	25	5	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	28	28
VIRGINIA																									
ARMY																									
AFRC Lynchburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Arlington Hall Station	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cameron Station ■	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	8	0	0	8	0	0	0	0
Defense Mapping Agency - Herndon	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	0	3	0	0	0	1	0	0	0	0
Fort A.P. Hill	19	19	0	0	5	14	0	0	6	1	1	3	0	5(8)	0	3	0	0	3	1	0	3	0	14	13
Fort Belvoir	59	59	0	0	0	17	0	42	0	1	0	16	0	0	0	0	0	1	0	0	0	0	0	0	0
Fort Eustis	23	23	0	0	1	22	0	0	9	4	4	5	0	0	0	1	2	3	0	0	6	0	0	10	10
Fort Lee	31	31	0	0	10	11	0	10	5	0	1	6	0	2(2)	0	0	0	8	1	0	10	1	0	16	15
Fort Monroe	3	3	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Myer	6	6	0	0	1	3	2	0	1	0	3	1	0	0	0	0	3	0	0	3	0	0	0	2	2
Fort Story	11	10	0	1	0	10	0	1	2	1	0	5	0	0	0	2	0	2	0	1	1	0	0	2	1
Housing Area Manassas, VA	2	2	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VIRGINIA (Continued)																									
ARMY (Continued)																									
Housing Area Nike Norfolk, VA	3	3	0	0	0	3	0	0	0	3	0	0	1	0	0	0	0	0	2	0	0	2	0	3	3
Housing Area Woodbridge, VA	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
NG Byrd Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Radford AAP	37	37	0	0	0	37	0	0	0	7	30	0	0	0	0	0	0	37	0	0	37	0	0	0	0
USARC Abingdon	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Alexandria	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Alexandria (Jones Point)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Charlottesville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Chesterfield (AMSA 90)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Chincoteague (Wallops Is.)	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Christiansburg (AMSA 89)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Churchland (Portsmouth)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Covington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Culpeper	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Galax	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Hampton	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VIRGINIA (Continued)																									
ARMY (Continued)																									
USARC Hampton (Marcella Road)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Martinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Norfolk	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Radford (New River)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Richmond (Dervishian)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Richmond 01 (Monteith)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Richmond, VA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Salem, VA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Springfield (AMSA 91)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Warsaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Waynesboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Vint Hill Farms Station	4	4	0	0	0	4	0	0	0	1	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0
Woodbridge Research Facility ■	13	13	0	0	4	9	0	0	8	1	0	0	0	0	0	1	0	0	0	0	0	0	0	12	12
ARMY TOTALS	327	326	0	1	121	146	3	57	31	22	50	39	2	7(10)	0	7	8	60	7	6	63	7	0	161	158
DEPARTMENT OF NAVY																									
AFEXTA Camp Peary, Williamsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VIRGINIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
Arlington Service Center	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
COMNAVBASE Norfolk	46	33	7	6	0	19	0	6	11	9	4	17	0	1(2)	6(6)	1	0	13	2	3	30	2	0	13	13
COMNAVFACENGCOM Alexandria	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
FCTC Dam Neck	6	6	0	0	0	6	0	0	0	0	2	0	0	0	2(2)	0	0	2	0	0	2	0	0	0	0
Headquarters Battalion, Arlington	1	1	0	0	0	0	0	0	0	0	0	0	0	1(1)	0	0	0	0	1	0	0	1	0	1	1
LANTNAVFACENGCOM Norfolk	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
MCCDC Quantico	22	22	0	0	11	7	2	0	0	0	7	2	0	3(3)	0	0	0	9	1	0	9	1	0	12	12
NADEP Norfolk	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NAS Norfolk	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAS Oceana	37	35	2	0	2	0	0	0	0	9	0	24	4	0	2(2)	0	0	0	0	0	12	0	0	6	6
NAVHOSP Portsmouth	2	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1
NAVPHIBASE Little Creek	22	19	3	0	6	9	2	0	3	2	7	4	0	0	0	0	0	8	0	0	13	0	0	9	9
NAVRADSTA Driver	8	8	0	0	5	3	0	0	0	0	3	0	0	0	1(3)	0	0	3	0	0	3	0	0	5	5
NFD/NSC Craney Island	16	15	1	0	5	5	0	0	0	2	4	2	1	0	0	0	0	6	0	0	11	0	0	6	6
NMCRC Roanoke	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NS Norfolk	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NSC Cheatham Annex Williamsburg	12	12	0	0	0	9	3	0	8	1	0	3	0	0	0	0	0	3	0	0	3	0	0	8	8

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VIRGINIA (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NSC Yorktown Fuels Division	21	21	0	0	0	19	0	0	18	1	1	0	0	0	0	0	0	1	0	0	2	0	0	18	18
NSGA Nwest Chesapeake	5	1	0	4	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	1	1
NSWC Dahlgren ♦	38	38	0	0	27	6	0	0	0	0	10	0	0	0	2(2)	0	0	8	0	0	10	0	0	27	27
NSY (Norfolk) Portsmouth	24	22	2	0	11	8	0	0	1	2	7	2	0	2(2)	2(2)	0	0	7	0	0	11	0	0	12	12
NWS St. Julien's Creek Annex, Norfolk	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
PWC Norfolk	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WPNSTA Yorktown ♦	20	20	0	0	3	17	0	0	0	0	16	1	0	0	0	0	0	17	0	0	17	0	0	3	3
DEPARTMENT OF NAVY TOTALS	290	265	15	10	78	110	7	6	42	26	61	60	5	7(8)	15(17)	1	0	78	4	3	129	4	0	129	129
AIR FORCE																									
Byrd ANGB	6	6	0	0	0	2	0	3	0	0	0	3	0	0	0	0	0	3	0	1	2	0	0	0	0
Langley AFB	47	43	0	4	0	35	0	5	6	9	1	10	1	5(5)	0	7	0	9	7	1	9	0	0	7	7
AIR FORCE TOTALS	53	49	0	4	0	37	0	8	6	9	1	13	1	5(5)	0	7	0	12	7	2	11	0	0	7	7

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
VIRGINIA (Continued)																									
DEFENSE LOGISTICS AGENCY																									
DGSC Richmond ●	28	28	0	0	0	28	0	0	1	13	10	4	8	4(5)	0	3	0	7	5	0	6	3	0	12	12
DEFENSE LOGISTICS AGENCY TOTALS	28	28	0	0	0	28	0	0	1	13	10	4	8	4(5)	0	3	0	7	5	0	6	3	0	12	12
VIRGINIA TOTALS	698	668	15	15	199	321	10	71	80	70	122	116	16	23(28)	15(17)	18	8	157	23	11	209	14	0	309	306
WAKE ISLAND																									
ARMY																									
Wake Island Airfield	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAKE ISLAND TOTALS	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON																									
ARMY																									
AFRC Bellingham	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
AFRC Bellingham (Stevens)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
AFRC Ellensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
AFRC Port Orchard	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

(Continued)

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WASHINGTON (Continued)																									
ARMY (Continued)																									
AFRC Tacoma	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
AFRC Yakima	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Camp Bonneville	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Lewis ●	47	47	0	0	30	9	0	7	0	2	6	1	1	2(3)	0	0	4	2	1	4	0	1	0	32	0
Housing Area Midway, VA	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	3	3
Housing Area Youngs Lake, WA	3	3	0	0	0	3	0	0	0	3	0	0	2	0	0	0	0	0	1	0	0	1	0	3	3
Ruston Way Property	5	5	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bothell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Clarkston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Everett	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Fort Lawton (AMSA 7)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
USARC Kennewick	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Longview	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Moses Lake	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Pasco	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Redmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Spokane	12	12	0	0	9	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

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State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
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		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WASHINGTON (Continued)																									
ARMY (Continued)																									
USARC Trentwood (AMSA 8)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Tumwater	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Walla Walla	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Wenatchee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Yakima (Pendlton)	8	8	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Vancouver Barracks	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Yakima Firing Center	50	50	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25
ARMY TOTALS	204	204	0	0	142	20	25	15	0	8	6	6	5	2(3)	0	0	4	2	3	4	0	3	0	150	118
DEPARTMENT OF NAVY																									
Jackson Park Housing, Bremerton	4	4	0	0	0	1	1	0	0	0	3	1	0	0	1(1)	0	0	4	0	0	3	0	0	0	0
NAS Whidbey Island ●	55	54	1	0	0	40	0	0	0	0	15	25	0	0	3(4)	0	0	38	1	1	40	0	0	0	0
NAVHOSP Bremerton	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
NAVRADSTA/T/Jim Creek	9	9	0	0	8	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	8	8
NS Puget Sound ■	11	9	0	2	0	1	7	0	1	0	1	5	0	0	0	0	0	8	0	0	8	0	0	1	1
NSB Bangor ●	39	30	0	0	14	21	0	0	3	1	20	1	0	2(2)	1(1)	0	1	20	0	1	21	0	0	17	0
NSC Puget Sound Bremerton	2	2	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	1

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	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WASHINGTON (Continued)																									
DEPARTMENT OF NAVY (Continued)																									
NSC Puget Sound Manchester	3	3	0	0	0	2	0	0	1	1	1	0	0	0	0	1	0	0	0	1	1	0	0	1	1
NSY Everett	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0
NSY Puget Sound	15	14	1	0	3	10	0	0	0	0	10	0	0	0	0	0	0	10	0	0	11	0	0	3	3
NUWES Indian Island Detachment	13	13	0	0	3	8	2	0	3	1	2	3	0	1(1)	0	1	0	4	1	0	7	1	0	7	7
NUWES Keyport	11	10	1	0	2	5	2	0	0	1	6	2	0	3(3)	0	0	0	8	0	1	8	0	0	2	0
DEPARTMENT OF NAVY TOTALS	164	159	3	2	31	90	13	0	8	4	59	40	0	6(6)	5(6)	2	1	95	2	5	102	1	0	40	21
AIR FORCE																									
Bellingham MAPT	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Murray	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Fairchild AFB ●	30	30	0	0	0	21	0	0	5	2	8	2	0	2(2)	2(2)	0	0	0	1	1	0	0	1	5	0
Four Lakes ANGB	4	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Makah AFS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
McChord AFB	65	65	0	0	0	51	0	13	28	1	0	0	0	1(1)	0	0	0	0	0	3	0	0	0	28	23
Mica Peak Radar Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Paine ANGB	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WASHINGTON (Continued)																									
AIR FORCE (Continued)																									
Seattle ANGB	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	0	0	0
Spokane ANGB	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
AIR FORCE TOTALS	109	100	9	0	1	76	9	13	33	3	10	6	0	3(3)	2(2)	0	0	6	1	5	6	0	1	34	23
DEFENSE LOGISTICS AGENCY																									
DFSP Mukilteo	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0
WASHINGTON TOTALS	479	465	12	2	174	188	47	28	41	15	77	52	5	11(12)	7(8)	2	5	105	6	14	110	4	1	224	162
WEST VIRGINIA																									
ARMY																									
AFRC Morgantown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
AFRC South Charleston	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
AFRC South Charleston (AMSA 107)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Beaver	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Bluefield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Clarksburg	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WEST VIRGINIA (Continued)																									
ARMY (Continued)																									
USARC East Rainelle	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Elkins	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Fairmont	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Grafton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Grantsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Huntington	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Jane Lew	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Lewisburg, WV	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Martinsburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC New Martinsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Parkersburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Parkersburg (AMSA 114)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Ripley	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Romney	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Valley Grove (AMSA 109)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Weirton	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WEST VIRGINIA (Continued)																									
ARMY (Continued)																									
USARC Wheeling	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
ARMY TOTALS	87	87	0	0	80	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	80
DEPARTMENT OF NAVY																									
ABL Mineral County	12	12	0	0	2	7	0	0	0	6	4	0	0	0	0	0	0	8	0	0	8	0	0	2	2
NAVRADSTA/R/ Sugar Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
DEPARTMENT OF NAVY TOTALS	13	13	0	0	3	7	0	0	0	6	4	0	0	0	0	0	0	8	0	0	8	0	0	3	3
AIR FORCE																									
EWVRA Shepherd Field ANGB	4	4	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2
Yeager ANGB	5	4	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	9	8	1	0	2	5	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2
WEST VIRGINIA TOTALS	109	108	1	0	85	12	1	7	0	6	5	0	0	0	0	0	0	8	0	1	8	0	0	85	85
WISCONSIN																									
ARMY																									
Badger Army Ammunition Plant	28	28	0	0	15	13	0	0	1	0	12	0	0	0	0	0	1	4	0	0	5	0	0	16	16

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WISCONSIN (Continued)																									
ARMY (Continued)																									
Fort McCoy	11	11	0	0	0	11	0	0	0	1	10	0	0	1(1)	1(1)	0	0	0	0	0	0	0	0	0	0
Housing Area Sun Prairie, WI	1	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
USARC Appleton	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Beaver Dam	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Beloit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
USARC Chippewa Falls	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC De Pere (AMSA 51)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
USARC Dodgeville	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Eau Claire (AMSA 52)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
USARC Eau Claire (Keith)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Ellsworth	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Fond du Lac	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Green Bay	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Green Bay (Buchanan Street)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Hurley (AMSA 52 SUB 1)	8	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Ladysmith	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Madison (AMSA 50)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WISCONSIN (Continued)																									
ARMY (Continued)																									
USARC Madison (O'Connell)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Madison (Park St.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Manitowoc	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
USARC Menasha	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Milwaukee (AMSA 49)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
USARC Milwaukee (Logan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Milwaukee (Silver Spring)	16	16	0	0	13	0	0	2	0	0	1	0	0	1(2)	0	0	1	0	0	1	0	0	0	13	13
USARC Onalaska (AMSA 53)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
USARC Onalaska (Industrial Road)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
USARC Oshkosh	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
USARC Pewaukee	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Racine	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
USARC Sheboygan	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Sparta (Fort McCoy 240)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
USARC Sparta (Ft. McCoy ECS 67)	14	14	0	0	9	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WISCONSIN (Continued)																									
ARMY (Continued)																									
USARC Wausau	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
ARMY TOTALS	218	218	0	0	169	25	0	17	1	2	23	0	1	2(3)	1(1)	0	1	4	0	0	5	0	0	171	155
AIR FORCE																									
General Mitchell AFB	4	4	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
General Mitchell ANGB	8	8	0	0	7	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Hardwood Range*	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Truax Field ANGB	7	7	0	0	3	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Volk Field ANGB	17	17	0	0	13	2	2	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	14	14
AIR FORCE TOTALS	37	37	0	0	24	11	2	0	5	2	6	0	1	0	0	0	0	0	0	0	0	0	0	30	29
WISCONSIN TOTALS	255	255	0	0	193	36	2	17	6	4	29	0	2	2(3)	1(1)	0	1	4	0	0	5	0	0	201	184
WYOMING																									
ARMY																									
AFRC Sheridan	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
USARC Cheyenne	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
ARMY TOTALS	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7

*This is a satellite facility at Volk Field, WI, and will be included in the Volk Field site status in future reports.

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1992

	Total # of Sites	Number of Sites																							
		PA				SI				RI/FS				IRA		RD			RA				Total		
		C	U	F	RC	C	U	F	RC	C	U	F	RC	C(ACT)	U(ACT)	C	U	F	C	U	F	RC	RIP	RC	SC
WYOMING (Continued)																									
AIR FORCE																									
Cheyenne MAPT	6	6	0	0	0	5	0	0	0	1	4	0	0	0	0	1	5	0	0	2	4	0	0	0	0
Francis E. Warren AFB ●	20	20	0	0	0	19	0	0	0	1	12	5	0	0	2(2)	1	0	12	0	0	12	0	0	0	0
AIR FORCE TOTALS	26	26	0	0	0	24	0	0	0	2	16	5	0	0	2(2)	2	5	12	0	2	16	0	0	0	0
WYOMING TOTALS	33	33	0	0	7	24	0	0	0	2	16	5	0	0	2(2)	2	5	12	0	2	16	0	0	7	7

Appendix D
State Status

This Appendix to the Annual Report provides state-by-state information regarding NPL, DSMOA, and IAG status. For the states, the following information is given:

- Number of installations and sites in the IRP
- IRP site status
- DSMOA and CA status
- Number of NPL-listed DoD installations
- Number of NPL installations covered by a signed IAG
- Number of installations covered by a DSMOA (for states with a signed DSMOA)
- FY 1992 funding provided to the state under the DSMOA.

States with signed DSMOAs

Table D-1

Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1992

State	Notice & Info Sent	Draft DSMOA & Forms Sent	State Response	Comments from State	Final DSMOA	DoD Signature	State Signature	CA Application Received	Comments Given	Final CA Submitted	CA Awarded
Alabama	■	■	■	■	■	■	■	■	■	■	■
Alaska	■	■	■	■	■	■	■	■	■	■	■
Arizona	■	■	■	■	■	■	■	■	■	■	■
Arkansas	■	■	■	■	■	■					
California	■	■	■	■	■	■	■	■	■	■	■
Colorado	■	■	■	■							
Connecticut	■	■	■								
Delaware	■	■	■	■	■	■	■	■	■	■	■
Florida	■	■	■	■	■	■	■	■	■	■	■
Georgia	■	■	■	■	■	■					
Hawaii	■	■	■	■	■	■	■	■	■	■	■
Idaho	■	■	■	■	■	■	■	■	■	■	■
Illinois	■	■	■	■	■	■	■	■	■	■	■
Indiana	■	■	■	■	■	■	■	■	■	■	■
Iowa*	■	■	■								
Kansas	■	■	■	■	■	■	■	■	■	■	■
Kentucky	■	■	■	■	■	■	■	■	■	■	■
Louisiana	■	■	■	■	■	■	■	■	■	■	■
Maine	■	■	■	■	■	■	■	■	■	■	■
Maryland	■	■	■	■	■	■	■	■	■	■	■
Massachusetts	■	■	■	■	■	■	■	■	■	■	■
Michigan	■	■	■	■	■	■	■	■	■	■	■
Minnesota	■	■	■	■	■	■	■	■	■	■	■
Mississippi	■	■	■	■	■	■	■	■	■	■	■
Missouri	■	■	■	■	■	■	■	■	■	■	■
Montana	■	■	■								
Nebraska	■	■	■	■	■	■	■	■	■	■	■
Nevada	■	■	■	■	■	■	■	■	■	■	■

*State has not pursued DSMOA.
CA = Cooperative Agreement.

Table D-1

Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1992

State	Notice & Info Sent	Draft DSMOA & Forms Sent	State Response	Comments from State	Final DSMOA	DoD Signature	State Signature	CA Application Received	Comments Given	Final CA Submitted	CA Awarded
New Hampshire	■	■	■	■	■	■					
New Jersey	■	■	■	■	■	■	■	■	■	■	■
New Mexico	■	■	■	■	■	■	■	■	■	■	■
New York	■	■	■	■	■	■	■	■	■	■	■
North Carolina	■	■	■	■	■	■	■	■	■	■	■
North Dakota*	■	■	■								
Ohio	■	■	■	■	■	■					
Oklahoma	■	■	■	■	■	■					
Oregon	■	■	■	■	■						
Pennsylvania	■	■	■	■							
Rhode Island	■	■	■	■	■	■	■	■	■	■	■
South Carolina	■	■	■	■	■	■	■	■	■	■	■
South Dakota	■	■	■	■	■	■	■	■	■	■	■
Tennessee	■	■	■	■	■	■	■				
Texas	■	■	■	■	■	■	■	■	■	■	■
Utah*	■	■	■								
Vermont	■	■	■	■	■	■	■	■	■	■	■
Virginia	■	■	■	■	■	■	■	■	■	■	■
Washington	■	■	■	■							
West Virginia	■	■	■	■	■	■	■	■	■	■	■
Wisconsin	■	■	■	■	■	■					
Wyoming	■	■	■	■	■	■	■	■	■	■	■
Washington, DC	■	■	■	■							
Puerto Rico	■	■	■	■	■	■					
Amer. Samoa	■	■	■	■	■	■					
Guam	■	■	■	■	■	■					
Virgin Islands*	■										
Marianas	■	■	■	■	■	■					

*State has not pursued DSMOA.
CA = Cooperative Agreement.

Table D-2

Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) Awarded during FY 1992
Alabama	44	2	2	11	—
Alaska	54	3	3	**98	1,827
Arizona	20	3	3	13	—
Arkansas	31	0	0	—	—
California	151	19	18	101	9,290
Colorado	22	2	1	—	—
Connecticut	29	1	0	—	—
Delaware	7	1	1	2	206
District of Columbia	7	0	0	—	—
Florida	70	4	4	15	900
Georgia	32	2	2	13	—
Guam	11	1	0	9	—
Hawaii	42	2 *	1	26	134
Idaho	8	1	1	2	—
Illinois	56	2	2	**16	83
Indiana	28	0	0	8	799
Iowa	27	1	1	—	—
Kansas	39	1	1	5	167
Kentucky	28	0	0	6	—
Louisiana	31	1	1	10	521
Maine	16	2	2	5	70
Maryland	50	1	1	14	—
Massachusetts	35	3	3	10	1,433
Michigan	32	0	0	12	373
Midway Island	1	0	0	—	—
Minnesota	32	3	3	4	—
Mississippi	26	0	0	10	176
Missouri	36	1	1	**8	—

*Includes Pearl Harbor Naval Complex proposed for the NPL.
**Includes Formerly Used Defense Sites (FUDS).

Table D-2

Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) Awarded during FY 1992
Montana	13	0	0	—	—
Nebraska	21	1	1	4	146
Nevada	7	0	0	5	503
New Hampshire	8	1	1	—	—
New Jersey	28	4	4	8	1,139
New Mexico	13	0	0	8	399
New York	90	3	2	18	—
North Carolina	37	1	1	1	—
North Dakota	10	0	0	—	—
Ohio	54	1	1	—	—
Oklahoma	36	1	1	—	—
Oregon	18	1	1	—	—
Pennsylvania	110	3	3	—	—
Puerto Rico	10	1	0	2	—
Rhode Island	19	2	2	7	—
South Carolina	31	0	0	11	—
South Dakota	4	1	0	2	327
Tennessee	22	2	1	—	—
Texas	88	3	3	26	—
Utah	19	3	3	—	—
Vermont	6	0	0	1	84
Virginia	69	3	1	26	—
Wake Island	1	0	0	—	—
Washington	51	6	6	—	—
West Virginia	27	0	0	3	295
Wisconsin	39	0	0	3	—
Wyoming	4	1	1	2	174
TOTAL	**1,800**	**94**	**85**	**525**	**19,046**

Appendix E
Formerly Used Defense Sites on the NPL

This Appendix to the Annual Report provides summary information for each FUDS listed on the NPL as of the end of FY 1992. Key data are provided in Table E-1.

Table E-1
FUDS on the NPL

Site	State	HRS Score
1. Fisher-Calo, LaPorte	IN	52.05
2. Hastings Ground Water Contamination, Hastings	NE	42.24
3. Malta Rocket Fuel Area, Malta	NY	33.62
4. Marathon Battery Corporation, Cold Spring	NY	30.27
5. National Presto Industries, Eau Claire	WI	43.7
6. Nebraska Ordnance Plant (Former), Mead	NE	31.94
7. New Hanover County Airport Burn Pit, Wilmington	NC	39.39
8. Olmstead Air Force Base, Middletown	PA	45.00
9. Ordnance Works Disposal Areas, Morgantown	WV	35.62
10. Phoenix-Goodyear Airport, Goodyear	AZ	45.91
11. Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (DOI), Carterville	IL	43.70
12. Weldon Spring Ordnance Works, St. Charles County,	MO	12(a) 30.26 12(b) 58.60
13. West Virginia Ordnance Works, Point Pleasant	WV	35.72

Fisher-Calo
LaPorte, Indiana

(1)

Service: Department of War

Size: 443 Acres

HRS Score: 52.05

Base Mission: Ordnance plant

IAG Status: Not Applicable

Action Dates: Placed on NPL September 1983; RI completed May 1989; FS completed April 1990; ROD signed August 1990

Contaminants: Organic solvents, PCBs, inorganics, polynuclear aromatic hydrocarbons

DOD Funding to Date: $316,385

Preliminary Assessment/ Site Inspection (PA/SI)

The former Kingsbury Ordnance Plant (KOP), constructed for DoD, was used for explosives manufacturing and loading operations, and storage and demilitarization of explosives. Later, it was managed by the U.S. Rubber Company, then purchased by the Kingsbury Industrial Development Management Corp. and the State of Indiana Department of Parks and Recreation (Fish and Wildlife Division) from the General Services Administration.

The contamination is believed to stem from the activities of the Fisher-Calo Chemical and Solvents Corp. (FCC), which was involved in the packaging, storage, and distribution of industrial chemicals as well as the reclamation of waste paint and metal finishing solvents.

The primary exposure pathway is through the ground water. Water wells in the vicinity are at risk due to the migration of the contaminant plumes.

DoD received notices from EPA in regard to the Fisher-Calo Superfund Site. The initial concern was based on the asbestos siding used to construct the buildings. Participation in negotiations with the PRPs will be dictated by the results of the PRP consultant's expanded sampling/analysis and quality assurance of the explosives results from splits taken by USACE, Omaha District.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was completed in May 1989, and an FS was completed in April 1990, both performed by EPA contractors.

Surface soils are contaminated with solvents, inorganics, and PCBs, while ground water contamination include VOCs. Surface water samples show the presence of inorganics, and sediment samples contain primarily PCBs.

Remedial Design/ Remedial Action (RD/RA)

The ROD was signed on August 7, 1990. The ROD includes excavation and incineration of soils containing semi-volatiles and PCBs, and soil flushing or soil vapor extraction for VOC contaminated soils. Incinerator ash testing is to be performed to determine the disposal location of the ash. Ground water extraction, treatment, reinjection, and monitoring, as well as development of an asbestos handling program, are planned. Removal of drums, tanks, and containers also will be performed.

The PRPs have submitted a work plan for RD which is currently under review by EPA. The approved work plan will establish the schedule for activities. There has not been any conclusive information showing significant DoD contaminant contribution. Additional investigative work is planned, which will include: soil and ground water sampling, archive literature search, interviews, and chemical engineering review of the expected wastes from the plant processes. Settlement negotiations are pending completion of site history and operations investigation.

Hastings Ground Water Contamination (2)
Hastings, Nebraska

Service:	Navy
Size:	2,600 Acres
HRS Score:	42.24
Base Mission:	Ammunition production, loading, and storage
IAG Status:	Not Applicable
Action Dates:	Placed on NPL 1986; ROD signed 1990
Contaminants:	Explosive compounds, VOCs and metals in ground water and soils, semi-volatiles (PAHs) in soils
DOD Funding to Date:	$16.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 48,753-acre Blaine Naval Ammunition Depot (NAD) was placed on the NPL in 1986 as one of seven subsites of the Hastings Ground Water Contamination Site. The facility was decommissioned between 1958 and 1966 and portions of the property transferred to the Nebraska National Guard, the Department of Agriculture and the Air Force or sold to private parties. The northwest portion of the former NAD, contains a community college and the Hastings East Industrial Park subsite (HEIP). The HEIP subsite contains much of the area where munitions production occurred. Other subsites have been identified at the former NAD and are under investigation. They are the former Bomb & Mine Complex, the Naval Yard Dump, the Explosives Disposal Area (Burn Pits), and the Southeast Detonation area. A PA/SI was not conducted at this site. However, EPA divided the former NAD into townships and contracted for PAs for each township under the Alternative Remedial Contract Strategy (ARCS) program. Those PAs involved little sampling and, under the terms of an IAG expected to be executed in the near future, the USACE Kansas City District will revisit the question of whether contamination exists at those areas. The USACE Huntsville Division conducted ordnance PAs and some clearance operations for explosive ordnance contamination and UXO in 1990 and 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

During the HEIP RI, two phases of field work were conducted which involved the installation and sampling of monitoring wells, surface water, soils, sanitary sewers, and catch basins, borehole geophysical surveys, soil borings, and an ambient air quality survey. The RI data were used to prepare a baseline risk assessment, which concluded that "an unacceptable level of risk may be associated with human activities at this site." Soil and ground water are contaminated with explosive compounds, metals and semi-volatile organic compounds. Five Operable Units (OU) have been designated by EPA at the former NAD. Three OUs are associated with the HEIP subsite and are: surface soil (OU4), ground water (OU14) and vadose zone (OU8). Another OU covers three subsites located in the southeast portion of the former NAD (OU16), and one OU covers the rest of the former NAD (OU15). An RI/FS was completed for OU4 in August 1990. RI/FS reports are in progress for OUs 8, 14 and 16. A ROD was signed for OU4 in September 1990.

Remedial Design/ Remedial Action (RD/RA)

RD for OU4 is in progress and is scheduled for completion in 1993. The estimated cost of OU4 is $20 million. Based on the results of the OU16 RI/FS, contaminated surface soils from other areas of the former NAD may be included in the HEIP RA project. A RA was completed in late 1990 at the Naval Yard Dump which is included in OU16. This RA project targeted surface debris and exposed drums.

Malta Rocket Fuel Area (3)
Malta, New York

Service: Army and Air Force

Size: 196.36 Acres

HRS Score: 33.62

Base Mission: Research and Development

IAG Status: Participation Agreement signed 1990

Action Dates: Placed on NPL 1987; PA/SI completed 1989

Contaminants: Carbon tetrachloride, chloroform, PCBs, trichloroethylene, boron

DOD Funding to Date: $791,052

Preliminary Assessment/ Site Inspection (PA/SI)

The Malta Rocket Fuel Area was established by the Army in 1945 and used for rocket engine and exotic rocket fuels testing. This site was a GOCO facility. General Electric was the contractor that operated the facility from 1945 to 1964 for the federal government. At that time, the property was conveyed to the New York State Atomic and Space Development Authority. Hazardous substances were found in drinking water, surface water, septic tank liquid, and sludge, and in containers located on-site. An Early Warning Monitoring System has been installed upgradient from several public wells, which are located downgradient from the site.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA has issued a unilateral order to all non-federal PRPs for the purpose of conducting an RI/FS. EPA has approved the RI work plan. Field work began in October 1991 and was completed in June 1992. A draft RI report was submitted for PRP review in October 1992.

USACE, on behalf of DoD, successfully negotiated a sidebar agreement with the other PRPs, obligating DoD to 37 percent of the cost of the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

Not identified yet.

Marathon Battery Corporation (4)
Cold Spring, New York

Service: Army

Size: 820 Acres

HRS Score: 30.27

Base Mission: Production of Nickel-Cadmium Batteries

IAG Status: Not Applicable

Action Dates: Placed on NPL 1981; Area I ROD signed September 1986; Area II ROD signed September 1988; Area III ROD signed September 1989

Contaminants: Cadmium, nickel, cobalt, pesticides, VOCs, base/neutral extractable compounds

DOD Funding to Date: $6.412 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Marathon Battery site was constructed in 1952 for the U.S. Army Signal Corps for the production of nickel-cadmium batteries. In November 1980, Merchandise Dynamics, Inc. purchased the facility for a book storage and distribution facility. Marathon Battery Co.; Gould, Inc.; and Merchandise Dynamics, Inc. have been named as PRPs along with the Army. The area where high concentrations of metals were found in the soils is used by local residents for fishing, crabbing, boating, and nature observation.

Between November 1972 and July 1973, dredging was conducted in East Foundry Cove. The dredge spoils were de-watered and buried in a clay-lined underground vault on the plant property. Studies conducted from 1976 to 1980 by New York State Department of Environmental Conservation (NYSDEC), EPA, and New York University indicated, however, that East Foundry Cove was still contaminated.

Remedial Investigation/ Feasibility Study (RI/FS)

The site consists of three distinct areas. The State of New York and the EPA, with input from the PRPs, have conducted an RI/FS for all areas and issued RODs. EPA issued an Administrative Order to the PRPs on March 26, 1989 for the building decontamination, consisting of power washing and vacuuming for cadmium, dust removal, book cleaning, and disposal.

Remedial Design/ Remedial Action (RD/RA)

The selected remedy for Areas I and III is hydraulic dredging, sediment thickening, fixation, and off-site disposal. The no action (monitoring) alternative was selected for Constitution Marsh.

The selected remedy for Area II consists of building decontamination/soil excavation/fixation/ enhanced volatilization/off-site disposal for the soils and building dust component. The vault cleanup include sediment excavation/ chemical fixation/off-site disposal. The no action alternative selected for the ground water requires no active cleanup effort, but does require monitoring, public education, and maintenance.

Building decontamination is being implemented by Marathon under an Administrative Order. The remedial action for Areas I, II and III will be implemented by Gould under the final Consent Decree currently under review by DoD. A final settlement has been negotiated by Omaha District with EPA, DOS, and the other PRPs. The final consent decree covers final liability of the DoD at the site. The Army and Marathon Battery have signed a partial Consent Decree for Area II. Gould Inc. did not.

National Presto Industries (NPI) (5)
(Ordnance Plant No. 2)
Eau Claire, Wisconsin

Service: Army

Size: 320 Acres

HRS Score: 43.7

Base Mission: Ordnance Manufacture

IAG Status: Consent Decree Order Signed 1986

Action Dates: RI/FS and RD/RA by NPI are still in progress; ROD from EPA may be issued by end of FY 1993. USACE awarded PRP support contract in September 1992

Contaminants: Trichloroethylene, tetrachloroethylene and other contaminants

DOD Funding to Date: $5.56 million

Preliminary Assessment/ Site Inspection (PA/SI)

EPA and Wisconsin Department of Natural Resources conducted ground water studies in 1981 to 1985 in the general area west of the NPI site, extending into the NPI site area. Contamination was discovered. The NPI site was placed on the NPL in May 1986. Wastes from NPI activities were disposed of in pits and lagoons on the site; it is alleged that during the period of U.S. ownership, wastes were disposed of in the sanitary sewer and dry wells on the site.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS conducted by NPI under a 1986 consent order with EPA is not yet complete. The work so far has identified five source areas and four plumes of ground water contamination. EPA ordered an on-site ground water treatment system for part of plumes and the air stripper is under construction. No action has yet been taken on source areas.

Remedial Design/ Remedial Action (RD/RA)

In March 1991, EPA issued a unilateral order to construct a drinking water system in an affected area of the Town of Hallie, and in July 1992, EPA ordered the construction of a ground water treatment system.

Construction of the drinking water supply system has been completed and it is nearly ready to be turned over to the Town of Hallie. In September 1992, the Omaha District awarded a PRP investigation contract to research historical activities and site technical information to assist in the evaluation of DoD liability.

Nebraska Ordnance Plant (Former) (6)
Mead, Nebraska

Service: Army

Size: 17,214 Acres

HRS Score: 31.94

Base Mission: The former Ordnance Plant produced 100- to 12,000-pound aerial bombs during World War II and the Korean Conflict; Currently used as an Agricultural Research Station for University of Nebraska

IAG Status: Signed September 1991

Action Dates: Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Explosives, volatiles, PCBs

DOD Funding to Date: $9.44 million

Preliminary Assessment/ Site Inspection (PA/SI)

The DoD property was transferred to various groups and individuals in 1962. The major owners are currently the University of Nebraska and the Nebraska National Guard. The major portions of the former Nebraska Ordnance Site investigated included four bomb loading lines, a demolition area, a burning ground, a crystallizing plant, a bomb booster area, and various support buildings. Explosive residues were found in the soils adjacent to three bomb load lines and two explosives compounds were identified in a ground water sample taken near load line No. 2. TCE was found in three ground water monitoring wells. A treatment system was provided to two families in the vicinity due to contamination found in their private wells.

Remedial Investigation/ Feasibility Study (RI/FS)

Additional soil and ground water samples have been taken to determine the extent of contamination. Initial sampling results have indicated that two major plumes of contamination exist. Additional exploration will be conducted to clearly define the plume boundaries. A TRC has been formed and includes representatives from the EPA, Nebraska Department of Environmental Control, Nebraska Department of Health, Lincoln Water System, Natural Resource District, University of Nebraska, and USACE.

Remedial Design/ Remedial Action (RD/RA)

Preliminary activities on RD/RA have begun; however, the major portion will be conducted after the completion of the RI/FS activities.

New Hanover County Airport Burn Pit (7)
Wilmington, North Carolina

Service: Army and Air Force

Size: 4 Acres

HRS Score: 39.39

Base Mission: World War II Bomber Command and Vietnam Era Aerospace Defense Command Airfield

IAG Status: PRP agreement signed 1990 (removal action)

Action Dates: Placed on NPL 1989; PA/SI completed 1987

Contaminants: Heavy metals, semi-volatiles, VOCs

DOD Funding to Date: $158,445

Preliminary Assessment/ Site Inspection (PA/SI)

The site had several fire training stations, which consisted of a main burn pit, an above-ground fuel storage tank, a fire smoke house, one railroad tanker car, and a number of old automobiles used for fire training. The PA/SI was conducted by the State of North Carolina. Contaminated fuels were found in the 10,000-gallon above ground fuel storage tank, which is connected to the various fire training stations. DoD, New Hanover County, Cape Fear Technical Institute Foundation (Community College), and the city of Wilmington, North Carolina have been identified as PRPs. Past practices involved placing crude oil recovered from spills and storage tank waste bottoms into the burn pit, igniting the contents, then extinguishing the fire. DoD conveyed the property to New Hanover County in 1977.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed the RI in August 1991 and provided a copy of the draft RI report to the PRPs for comments. EPA finalized the RI/FS in 1992, culminating in a ROD signed September 29, 1992.

The non-federal PRPs have signed a Consent Order issued by EPA for the removal of surface contamination in and around the main burn pit, which poses a threat to human health and the environment. This removal action was completed in November 1990. USACE successfully negotiated a sidebar agreement with the other PRPs to provide 25 percent of the cost for the removal action.

Remedial Design/ Remedial Action (RD/RA)

EPA has indicated that PRPs will have the opportunity to conduct the RD/RA if the PRPs can agree on a negotiated percentage of responsibility. EPA is scheduled to send RD/RA special notice letters to the PRPs in early 1993.

Olmsted Air Force Base (8)
Middletown, Dauphin County, Pennsylvania

Service: Air Force

Size: 1,034 Acres

HRS Score: 45.00

Base Mission: Basic training, airfield, ordnance storage depot, aircraft repair and testing facility

IAG Status: Not Applicable

Action Dates: Drinking water well study in September 1983; Hydrogeologic study in May 1984; Placed on the NPL June 1, 1988; Interim ROD dated December 30, 1987 and construction of a water treatment facility; PRP search in 1988; RI completed in August 1990; Interim ROD prepared December 1980; ESD prepared 1992.

Contaminants: Organic solvents, inorganics, polynuclear aromatic hydrocarbons (PAH), and heavy metals

DOD Funding to Date: $24.32 million

Preliminary Assessment/ Site Inspection (PA/SI)

From 1898 through 1966, the United States Government as an Army and Air Force facility used the site as a basic training facility, an airfield, an ordnance storage depot, and aircraft repair and testing facility. The current owners are: the Pennsylvania Department of Transportation (PENNDOT) as the Harrisburg International Airport, Terex Trailer Corp., Harry Myhre, Inc., Dauphin County Industrial Development Agency, Donald and Carol Dell, Pennsylvania Railroad Company, Bethlehem Steel Corp., and the Borough of Middletown.

The contamination is believed to stem from site activities from 1898 through the present. The Army and Air Force as the past owners may have been major contributors to the site contamination as well as PENNDOT and the other current owners.

Remedial Investigation/ Feasibility Study (RI/FS)

In 1988, EPA issued a contract for an extensive study of the site as well as a PRP search. The RI/FS was completed in August 1990, both performed by EPA contractors. During the RI/FS, the site was separated into five Operable Units (OUs): 1) Middletown Area - ground water contaminated with VOCs, 2) Industrial Area - soils contamninated with VOCs and metals, 3) Fire Training Pit Area - soils contaminated with PAHs and lead, 4) North Base Landfill Area - ground water contaminated with PAHs and metals, and 5) Meade Heights Area - surface water contaminated with PAHs, VOCs, and metals.

Remedial Design/ Remedial Action (RD/RA)

After the discovery of VOCs in drinking water, EPA ordered the shutdown of six to ten wells and the installation of an air stripping system. This remedy, which was funded by the Air Force, was documented in a 1987 interim ROD.

A second Interim ROD was signed in December 1990 requiring 1) continued operation of the drinking water treatment system, 2) a hydrogeologic investigation, 3) monitoring of wells, and 4) restrictions on permitting of new wells.

The project is currently in the Remedial Design (RD) phase to remediate 15 underground storage tanks, 1 aboveground storage tank, approximately 11,200 linear feet of underground liquid fueling lines, 15 transformers, and 4 oil-filled switches.

Ordnance Works Disposal Areas (9)
Morgantown, West Virginia

Service: Department of War

Size: 825 Acres

HRS Score: 35.62

Base Mission: Ordnance Plant

IAG Status: Not Applicable

Action Dates: Placed on NPL June 6, 1986; RI/FS for OU 1 was completed January 1988; Second (revised) ROD for OU 1 was signed September 29, 1989; the RI/FS for OU 2 was started in August 1990

Contaminants: PCBs, inorganics, carcinogenic polynuclear aromatic hydrocarbons, arsenic, mercury

DOD Funding to Date: $273,000

Preliminary Assessment/ Site Inspection (PA/SI)

The ordnance plant was built by DuPont in 1940 to produce hexamine from ammonia and methanol using coal as a raw material. The plant expanded throughout World War II producing coke, crude tar, ammonia, formaldehyde, light oils, higher alcohols, and heavy water. The plant is separated into two OUs. OU1 consists of an old landfill, a scraped area which was a shallow disposal area, two former lagoons (which have been excavated), and a former drum staging area. OU2 covers the remainder of the plant with emphasis on the process areas.

The site was sold to Morgantown Community Association and ownership was subsequently transferred to Morgantown Ordnance Works, Inc. in 1962. Prior to the sale of the plant, DoD had leased the plant to several operators.

EPA has issued Consent Orders on OU1 and OU2. DoD was not named in the orders, but has offered a percentage proposal to the other PRPs. The proposal is based on DoD's investigation of the site history. The funding for the RI/FS being performed by Radian Corporation on OU2 was negotiated among the active PRPs, with DoD contributing 30.24 percent of the RI/FS cost. Du Pont, also at 30.24 percent, will act as the lead. In addition to financial participation, the Army, through the Corps of Engineers, provides technical support to the technical committee which consists of Du Pont, Olin, Tenneco, and the Army.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS for OU2 is underway. Work plans have been submitted to EPA and are awaiting comments. The RI/FS for OU1 was contracted by EPA and was completed in January 1988.

The RI/FS for OU1 developed risk-based cleanup levels for arsenic, PAHs, PCBs, and mercury. All test pits located in the landfill area showed arsenic and PAHs above cleanup levels, with higher concentrations in the upper portions of the landfill. Mercury was detected in a water-filled trench in the open alley way splitting the main process building. This is part of the processing area of OU2. The OU2 RI work plan will be submitted to EPA in December 1992. Field work is expected to begin in the spring of 1993. To reduce cost, field studies for OU2 will be coordinated with General Electric's RCRA studies.

Remedial Design/ Remedial Action (RD/RA)

The second (revised) ROD for OU1 prescribes bioremediation and stabilization with containment. Inorganic hot spots will be excavated and stabilized and the organic soils will be excavated and treated in a bioremediation bed. An alternate remedy of soil washing is provided in the amended ROD in case bioremediation is not feasible.

Phoenix-Goodyear Airport (10)
(formerly Litchfield Park NAF)
Goodyear, Arizona

Service: Navy

Size: 750 Acres

HRS Score: 45.91

Base Mission: Acceptance, modification, preservation, depreservation, and storage of Naval aircraft

IAG Status: Not Applicable

Action Dates: Placed on NPL 1983; OU RI/FS and ROD completed 1987; RI/FS and ROD for the Final Remedy completed 1989

Contaminants: Trichloroethylene

DOD Funding to Date: $8.891 million

Preliminary Assessment/ Site Inspection (PA/SI)

The southern portion of the site includes the Loral facility (formerly Goodyear Aerospace) and the Phoenix-Goodyear Municipal Airport (formerly Litchfield Park Naval Air Field). From 1941 to 1987, Goodyear owned and operated an industrial manufacturing/assembly facility for manufacturing parts and modifying and assembling aircraft. Maintenance operations included vapor degreasing operations using TCE, plane washing, application of spraylat, and installation of kits. Goodyear, Loral, the city of Phoenix, and DoD have all been identified as PRPs.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed RI/FS work in 1989. Contaminants found in soil and ground water include organic compounds.

Ground water is found at depths of 50 to 60 feet below the surface, with the shallowest water-bearing sediment defined as Subunit A. This aquifer is separated by a clay rich unit, Subunit B, from a deeper aquifer, Subunit C. Subunit C is a primary source for drinking water. Subunit A is contaminated by a 7,000-foot long plume extending southwestward from the developed portion of the site. This plume is estimated to contain 6,500 pounds of TCE. Subunit C has TCE contamination also. Soil contamination has been found in borings drilled on both former Goodyear and former Navy property. Contamination may largely be the result of waste generated at the Goodyear facility and disposed in storm sewers that ultimately drain to the former Navy property.

Remedial Design/ Remedial Action (RD/RA)

A ROD was approved in September 1987 for the Section 16 OU which addressed VOC-contaminated ground water in Subunit A. EPA selected extraction, air stripping, and reinjection as the preferred remedy. Phase I of the OU is currently operating.

A second phase will address the highest concentration portion of the Subunit A plume. Phase II pump and treat system is constructed. Operations for the entire OU are anticipated by January 1993.

A ROD completed in September 1989 for the final remedy addresses the vadose zone and Subunits B/C ground water contamination for the entire site. The remedy consists of soil vapor extraction.

DoD has fulfilled its financial obligation with a payment of $6.1 million in FY 1992.

Sangamo Electric Dump/Crab Orchard (11)
National Wildlife Refuge (DOI)
Carterville, Illinois

Service: Department of War

Size: 43,000 Acres

HRS Score: 43.70

Base Mission: Ordnance manufacturing and loading

IAG Status: Not Applicable

Action Dates: Placed on NPL 1987; RODs signed for OU1 and OU2 1990; RI/FS initiated 1990 for OU3; PRPs investigation initiated September 1990

Contaminants: Organic solvents, inorganics, polynuclear aromatic hydrocarbons, munition residues, heavy metals, PCBs

DOD Funding to Date: $2.20 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Illinois Ordnance Plant (IOP) located on the eastern portion of the U.S. Department of Interior's (DOI) Crab Orchard National Wildlife Refuge (CONWR) was operational from 1942 to 1945. The IOP served as a manufacturing/ loading site for high-explosive shells, bombs, and other components. The site was proposed for inclusion to the NPL in 1984, and listed in 1987. Thirty-three areas have been identified for site investigation and have been divided into four OUs.

The PA at the Refuge was completed by USACE in 1988 and limited to areas formerly associated with the IOP. The SI, which focused on 14 sites, was completed in April 1988. Results did not indicate widespread contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS has been completed for both the Metals OU and the PCB OU and RODs for both OUs have been issued. USACE awarded an RI contract to study the presence and magnitude of contamination at OU3. Field work performed in April and May 1991 included installation of monitoring wells, soil borings, sediment sampling, and excavation of magnetic anomalies.

Additional remedial work may be required for all or part of the fourth OU.

Remedial Design/ Remedial Action (RD/RA)

The Omaha District awarded a contract on behalf of the DOI for a treatability study/remedial design for the Metals OU. This study is scheduled for completion in 1992. Work is proceeding with the RD/RA for the PCB OU. Further action for the Explosives/ Munitions OU and the Miscellaneous OU are pending completion of remaining RI/FS activities. The USACE Chicago District awarded two contracts in FY 1992 for the demolition of surface munition bunkers. The bunkers were demolished in FY 1992 and an additional contract for the demolition of more unsafe buildings is scheduled for 1993.

Weldon Spring Chemical Plant (12a)
St. Charles County, Missouri

Service:	Army
Size:	230 acres
HRS Score:	58.60
Base Mission:	Formerly used in support of the Ordnance Works Production Area, then transferred to AEC for processing uranium and thorium
IAG Status:	Pre-ROD IAG signed 1992
Action Dates:	PA/SI completed 1975; RI/FS-EIS began 1989; Quarry listed on NPL 1987; Chemical plant listed on NPL 1989; Entire site listed on NPL February 1990; RI/FS-EIS schedule completion May 1993
Contaminants:	TNT, DNT, lead, thorium, uranium, PCB, asbestos
Funding to Date:	$52.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

The chemical plant is located on an area that was originally part of several TNT production lines. The National Lead Company of Ohio was contracted by the Atomic Energy Commission (AEC) to perform environmental monitoring and maintenance of the raffinate pits and the quarry. In 1981, Bechtel National, Inc., assumed management responsibility from National Lead Company of Ohio under contract to DOE. In 1984, DOE was directed by the Office of Management and Budget to assume custody and accountability for the chemical plant from the Army; and a Memorandum of Understanding (MOU) between the Army and DOE for remedial action costs was reached in 1985. The site is currently under the control of DOE.

Remedial Investigation/ Feasibility Study (RI/FS)

In 1987, DOE issued a draft environmental impact statement (EIS) to assess alternatives for long-term management of contaminated materials associated with remedial action at the site.

The Weldon Spring chemical plant has been divided into four separate OUs: quarry bulk waste, chemical plant/raffinate pits, quarry follow-on (residuals), and site ground water. The ROD quarry bulk waste removal was signed by EPA and DOE in 1990 and 1991, respectively. The FS is underway for the chemical plant/raffinate pits. Upon completing the FS, the preferred alternative will be selected. The ROD for waste disposal and long-term cleanup is scheduled for May 1993.

Remedial investigations for the quarry follow-on began in 1992.

Remedial Design/ Remedial Action (RD/RA)

The following removal actions were initiated in 1992. Various actions have been conducted for the project to mitigate actual or potential releases of radioactive or chemical contaminants into the environment and to eliminate health and safety threats to on-site personnel. A number of small-scope expedited response actions have been documented in focused engineering evaluation/cost analysis (EE/CA) reports.

Several actions are underway in support of the quarry bulk waste removal effort including the relocation of Highway 94, the construction of the quarry haul road, the erection of the elevated water tower, the construction of the quarry temporary storage area (TSA), and the design of the quarry bulk waste removal action.

Quarry bulk waste removal is scheduled to begin in 1993.

Weldon Spring Ordnance Works (12b)
St. Charles County, Missouri

Service: Army

Size: Ordnance Works: 15,577 Acres; Training Area: 1,655 Acres

HRS Score: 30.26

Base Mission: Formerly used in support of the Ordnance Works Production Area (Bunkers, Mechanical Shop, and Housing)

IAG Status: Pre-ROD IAG signed 1990; Effective August 1991

Action Dates: PA/SI completed 1977; Listed on NPL 1990; RI/FS for Training Area completed 1990; RI for Ordnance Works completed 1991

Contaminants: TNT, DNT, lead

DOD Funding to Date: $9.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Weldon Spring Ordnance Works is composed of two major components: the active portion, Weldon Spring Training Area (WSTA), and the inactive portion, Weldon Spring Ordnance Works (WSOW). Initial field investigations were conducted to determine the nature and extent of contamination at WSOW and WSTA. The U.S. Toxic and Hazardous Materials Agency (USATHAMA) conducted an environment assessment of WSTA. It was determined that the underground wastewater pipelines and several surficial locations remained contaminated from explosives manufacturing. Data collected indicated that the potential hazards at the WSTA included contamination from explosives, radioactive materials, asbestos, DDT, sulfur, and sodium compounds. An area containing radiological material in WSTA was identified, marked, and fenced. USATHAMA identified several hazards on-site including partially destroyed buildings, abandoned cisterns, underground water-filled tanks and refuse from TNT manufacturing and military training exercises. No explosives contamination was found in the sediment or surface water samples.

Remedial Investigation/ Feasibility Study (RI/FS)

During the RI on the active portion of the site, over 5,000 soil samples were analyzed for TNT.

Nitroaromatics and volatile organics were detected in the ground water, nitroaromatics and lead were detected in the surface soil, and nitroaromatics were detected in the wooden pipeline. The draft RI Report was completed in June 1989. A draft FS was submitted in July 1990. A draft Risk Assessment was submitted October 1990. The RI Report was finalized along with the Risk Assessment for both sites in 1992. The FS report for both sites will be finalized by Summer 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities will begin after the RODs are signed for the site OUs. It is anticipated that design procurement will begin no later than 1995.

West Virginia Ordnance Works (13)
Point Pleasant, West Virginia

Service:	Army
Size:	8,323 Acres
HRS Score:	35.72
Base Mission:	Established in 1942 and produced TNT from toluene for the World War II war effort; Deactivated in 1946
IAG Status:	First OU IAG signed 1987; Second OU IAG signed 1989
Action Dates:	PA/SI completed 1982; Placed on NPL 1984; RI/FS initiated 1984. ROD for OU1 signed 1987; ROD for OU2 signed 1988; Omaha District assigned RD for Second OU cleanup in November 1989; Transition to FUDS Program October 1991
Contaminants:	Nitroaromatic residues
Funding to Date:	$19.54 million

Preliminary Assessment/ Site Inspection (PA/SI)

The West Virginia Ordnance Works (WVOW) was a TNT manufacturing plant until production closeout in 1946. In 1949, 3,408 acres were deeded to the West Virginia State Conservation Commission and became the McClintic State Wildlife Station (MSWS). In May 1981, red water seepage was observed adjacent to Pond 13 in MSWS. The pond was located near the former TNT wastewater trunk sewerlines and pumping station. Studies by the West Virginia Department of Natural Resources and EPA contractors in 1981 and 1982 showed 2,4-TNT, 2,6-TNT, 2,4,6-TNT, and phenol present in the ground water. A 1984 archives search of WVOW concluded that, based upon contaminant sources and the hydrogeologic setting of WVOW, the potential existed for contamination migration through surface and ground water pathways.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI, completed in 1985, determined that major contaminant source areas were soils in the TNT manufacturing area, underground process lines, and soils in a burning grounds area. The deep aquifer under the manufacturing area and the ground water in the burning grounds area were not contaminated. Activities were divided into two OUs. OU1 includes the manufacturing area, burning grounds area, and industrial sewer lines. OU2 includes the acids area/yellow water reservoir, red water reservoirs, and Pond 13/Wet Well site. An FS for OU1 was completed in 1986 and for OU2 in 1988. The ROD for OU2 called for capping two red water ponds, Pond 13, and the yellow water reservoir, and building two ponds on the MSWS, pumping and treating related ground water, and purchasing an industrial park at the acids area/yellow water reservoir for incorporation into MSWS.

Remedial Design/ Remedial Action (RD/RA)

Field work for OU1 was conducted in 1988 and consisted of excavation and flaming of industrial sewerlines and flaming the surface of the burning ground. A 2-foot soil cap was then placed over contaminated soils at the TNT manufacturing and burning grounds area.

Construction for capping the two red water ponds began in 1991. The borrow area from which capping material was removed will be converted to an 11.5-acre wetlands. The RCRA caps for the red and yellow water ponds are completed with long-term ground water monitoring yet to be implemented. Design of the ground water pump and treat system for OU2 will be completed in June 1993.

Negotiations with the State of West Virginia to replace wetland acreage at the former Pond 16 are ongoing.

Appendix F
Base Closures

This Appendix to the Annual Report provides a list of military installations included in the Base Realignment and Closures Program (BRAC). Under this program, a total of 120 installations were identified for closure through two rounds of assessments, BRAC 88 and BRAC 91. BRAC 88 covered 86 installations while BRAC 91 covered 34 installations. The information presented in this Appendix was obtained from two documents: *Base Realignments and Closures, Report of the Defense Secretary's Commission* (December 1988), and *Defense Base Closure and Realignment Commission, Report to the President* (1991).

Base Closures

BRAC 88	BRAC 91
Department of the Army	
Fort Douglas, UT Cameron Station, VA Presidio of San Francisco, CA Coosa River Annex, AL Navajo Depot Activity, AZ Fort Wingate, NM Nike Site Aberdeen Proving Ground, MD Lexington Depot, KY Pontiac Storage Facility, MI *Alabama Ammunition Plant, AL* New Orleans Military Ocean Terminal, LA Fort Sheridan, IL Army Material Technology Laboratory, MA Tacony Warehouse, PA Hamilton Army Airfield, CA Jefferson Proving Ground, IN Nike Philadelphia, NJ Nike Kansas City, MO Cape St. George, FL Kapalama Military Reservation, HI Stand-Alone Housing Installations (52 sites) Miscellaneous Properties (4 sites) **Total: 76**	Fort Benjamin Harrison, IN *Fort Devens, MA* *Fort Ord, CA* *Sacramento Army Depot, CA* Harry Diamond Lab Woodbridge Research Facility, VA **Total: 5**
Department of the Navy	
Naval Station New York, NY Naval Hospital Philadelphia, PA Naval Station Galveston, TX Naval Station San Francisco (Hunters Point), CA Naval Station Lake Charles, LA **Total: 5**	*Construction Battalion Center, Davisville, RI* *Hunters Point Annex to Naval Station Treasure Island, CA* Integrated Combat Systems Test Facility San Diego, CA Marine Corps Air Station Tustin, CA Naval Air Station Chase Field, TX *Naval Air Station Moffett Field, CA* Naval Station Long Beach, CA Naval Station Philadelphia, PA Naval Station Puget Sound, Sand Point, WA Naval Electronic Systems Engineering Center San Diego, CA Naval Electronic Systems Engineering Center Vallejo, CA NMWEA Yorktown, VA Naval Ocean Systems Center Det Kaneohe, HI Naval Space Systems Activity Los Angeles, CA NWEF Albuquerque, NM Philadelphia Naval Shipyard, PA **Total: 16**

NPL Installations are listed in italics.

Base Closures	
BRAC 88	**BRAC 91**
Department of the Air Force	
Chanute Air Force Base, IL *George Air Force Base, CA* *Mather Air Force Base, CA* *Norton Air Force Base, CA* *Pease Air Force Base, NH* **Total: 5**	Bergstrom Air Force Base, TX Carswell Air Force Base, TX *Castle Air Force Base, CA* Eaker Air Force Base, AR England Air Force Base, LA Grissom Air Force Base, IN *Loring Air Force Base, ME* Lowry Air Force Base, CO Myrtle Beach Air Force Base, SC Richards-Gebaur Air Reserve Station, MO Rickenbacker Air Guard Base, OH *Williams Air Force Base, AZ* Wurtsmith Air Force Base, MI **Total: 13**

NPL Installations are listed in italics.

List of Acronyms

AAP	Army Ammunition Plant
ABL	Allegheny Ballistics Lab
AD	Army Depot
ADA	Army Depot Activity
AEC	Atomic Energy Commission
AEDC	Arnold Engineering Development Center
AFB	Air Force Base
AFCESA	Air Force Civil Engineering Support Agency
AFDW	Air Force District of Washington
AFIT	Air Force Institute of Technology
AFRB	Air Force Reserve Base
AFRC	Air Force Reserve Center
AFRTA	Armed Forces Reserve Training Area
AFS	Air Force Station
AGS	Aerospace Generation Squadron
AIMD	Aircraft Intermediate Maintenance Department
AMSA	Army Maintenance Support Activity
ANG	Air National Guard
AOC	Area of Concern
ARDEC	Armament Research, Development, and Engineering Center
ASF	Aviation Support Facility
ASTROGRPDET	Astronautics Group Detachment
ATSDR	Agency for Toxic Substance and Disease Registry
AWQC	Ambient Water Quality Criteria
BDDR	Building Demolition and Debris Removal
BRAC	Base Closure and Realignment Acts
CA	Cooperative Agreement
CB	Construction Battalion
CBC	Construction Battalion Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERE	Center for Environmental Restoration Education
CFC	Chlorofluorocarbon
CHESDIVNFEC	Chesapeake Division, Naval Facilities Engineering Command
CHESNAVFACENGCOM	Chesapeake Division, Naval Facilities Engineering Command
COE	United States Army Corps of Engineers
COMNAVDIST	Headquarters Naval District
CONUS	Continental United States
DA	Department of the Army
DCE	Dichloroethylene
DDRE	Defense Depot Region East
DDTC	Defense Depot Tracy California (now known as Defense Depot Region West-Tracy)
DER	Department of Environmental Resources
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DEWLINE	Defense Early Warning Line
DFSP	Defense Fuel Supply Point
DGSC	Defense General Supply Center
DIPEF	Defense Industrial Plant Equipment Facility
DLA	Defense Logistics Agency
DNSC	Defense National Stockpile Center

DoD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DPM	Defense Priority Model
DRMO	Defense Reutilization and Marketing Office
DSMOA	Defense and State Memorandum of Agreement
DTRESCEN	David Taylor Research Center
ECS	Equipment Concentration Site
EE/CA	Engineering Evaluation/Cost Analysis
E/P	Evaporation/percolation
EOD	Explosives Ordnance Disposal
EPA	Environmental Protection Agency
ERADCOM	Electronics Research and Development Command
FASOTRAGRUPACDET	Fleet Aviation Specialized Operational Training Group
FASWTC	Fleet Antisubmarine Warfare Training Center
FCTC	Fleet Combat Training Center
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FLTRGGRA	Fleet Training Group
FLTSURSPTCMD DET	Fleet Surveillance Support Command Detachment
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GAC	Granulated Activated Carbon
GOCO	Government Owned/Contractor Operator
GPM	Gallons per Minute
GWTP	Ground Water Treatment Plant
HAZMIN	Hazardous Waste Minimization
HRS	Hazard Ranking System
HRS2	Revised Hazard Ranking System
HSWWA	Hazardous and Solid Waste Amendments
HTRW	Hazardous, Toxic or Radioactive Waste
HTW	Hazardous or Toxic Waste
IAG	Interagency Agreement
IAP	International Airport
IAS	Installation Assessment Study
INACTSHIPDET	Inactive Ship Maintenance Facility Detachment
IQ	Indefinite Quantity
IRA	Interim Remedial Action
IRM	Interim Remedial Measure
IRP	Installation Restoration Program
IRTCG	Installation Restoration Technology Coordinating Group
ISV	In-situ Volatilization
IVD	Ion Vapor Deposited
JMT	Joint Management Team
LBAD	Lexington-Bluegrass Army Depot
MAP	Municipal Airport
MCAGCC	Marine Corps Air-Ground Combat Center
MCAS	Marine Corps Air Station

MCB	Marine Corps Base
MCCDC	Marine Corps Combat Development Center
MCL	Maximum Contaminant Level
MCLB	Marine Corps Logistic Base
MCMWTC	Marine Corps Mountain Warfare Training Center
MCRTC	Marine Corps Reserve Training Center
MEK	Methyl Ethyl Ketone
MEP	Master Environmental Plan
MOU	Memorandum of Understanding
MPCA	Minnesota Pollution Control Agency
NAC	Naval Avionics Center
NADC	Naval Air Development Center
NADEP	Naval Aviation Depot
NAEC	Naval Air Engineering Center
NAF	Naval Air Facility
NALF	Naval Auxiliary Landing Field
NAPC	Naval Air Propulsion Center
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration
NAVCAMS	Naval Communication Area Master Station
NAVENPVNTMEDU	Navy Environmental and Preventive Medicine Unit
NAVEODTECHCEN	Naval Explosive Ordnance Disposal Technology Center
NAVFAC	Naval Facilities
NAVHOSP	Naval Hospital
NAVMAG	Naval Magazine
NAVMARCORESCEN	Navy and Marine Corps Reserve Center
NAVMEDCOMNWREG	Naval Medical Command, Northwest Region
NAVPETOFF	Navy Petroleum Office
NAVPETRES	Naval Petroleum Reserve
NAVPHIBASE	Naval Amphibious Base
NAVRADSTA	Navy Radio Station
NAVRECCEN	Naval Recreation Center
NAVREGDENCEN	Naval Regional Dental Center
NAVRESFAC	Naval Reserve Facility
NAVRESMAINTRAFAC	Naval Reserve Maintenance Training Facility
NAVSCSCOL	Navy Supply Corps School
NAVSECSTA	Naval Security Station
NAVSHIPREPFAC	Naval Ship Repair Facility
NCO	Non-Commissioned Officer
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCS	Naval Communication Station
NCTAMS	Naval Computer and Telecommunication Area Master Station
NESEC	Naval Electronic Systems Engineering Center
NETC	Naval Education & Training Center
NFD	Navy Fuel Depot
NFRAP	No Further Response Action is Planned
NG	National Guard
NGB	National Guard Bureau
NIROP	Naval Industrial Reserve Ordnance Plant
NMCRC	Navy and Marine Corps Reserve Center

NMED	New Mexico Environment Department
NOAA	National Oceanic & Atmospheric Administration
NOS	Naval Ordnance Station
NOSC	Naval Ocean Systems Center
NPDES	National Pollutant Discharge Elimination System
NPGS	Naval Post Graduate School
NPL	National Priorities List
NPPS	Navy Publishing and Printing Service
NPPSO	Navy Publishing and Printing Service Office
NPRO	Naval Plant Representative Office
NRC	Naval Reserve Center
NRL	Naval Research Laboratory
NRL UWS REF DET	Naval Research Lab Underwater Sound Reference Detachment
NRTF	Naval Radio Transmitting Facility
NS	Naval Station
NSA	Naval Support Activity
NSB	Naval Submarine Base
NSC	Naval Supply Center
NSD	Naval Supply Depot
NSGA	Naval Security Group Activity
NSWC	Naval Surface Warfare Center
NSY	Naval Shipyard
NTC	Naval Training Center
NTIC	Naval Technical Intelligence Center
NUWES	Naval Undersea Warfare Engineering Station
NUSC	Naval Underwater Systems Center
NWC	Naval Weapons Center
NWS	Naval Weapons Station
NWIRP	Naval Weapons Industrial Reserve Plant
OBS	Observatory
OEW	Ordnance and Explosive Waste
OLF	Outlying Landing Field
OHW	Other Hazardous Waste
OMB	Office of Management and Budget
OMS	Organizational Maintenance Squadron
OU	Operable Unit
PA	Preliminary Assessment
PACAF	Pacific Air Force
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene
PDO	Property Disposal Office
PHI	Preliminary Hydrogeological Investigation
PMRF	Pacific Missile Range Facility
PMTC	Pacific Missile Test Center
POL	Petroleum, Oil, and Lubricants
PPB	Parts per Billion
PPM	Parts per Million
PRP	Potentially Responsible Party
PSE	Preliminary Source Evaluation
PWC	Public Works Center

RA	Remedial Action
RADAR	Ground Penetrating Radar Ordnance Locator System
RADC	Radioactive Disposal Committee
RC	Response Complete
RCRA	Resource Conservation and Recovery Act of 1976
RD	Remedial Design
RD&D	Research, Development and Demonstration
RES TRNG	Reserve Training
RFA	RCRA Facility Assessment
RFI	Remedial Feasibility Investigation (RCRA Facility Investigation)
RI	Remedial Investigation
RIAC	Roswell Industrial Air Center
RIP	Remedy in Place
RMIS	Restoration Management Information System
ROD	Record of Decision
RPM	Remedial Project Manager
RR	Rapid Response
RRS	Radar Remote Site
SAC	Strategic Air Command
SACM	Superfund Accelerated Cleanup Model
SARA	Superfund Amendments and Reauthorization Act
SAT COM	Satellite Communication
SC	Site Close-out
SDWA	Safe Drinking Water Act
SFG RSL	Safeguard Remote Sprint Launch
SI	Site Inspection
SIMA	Shore Intermediate Maintenance Activity
SPCC	Ships Parts Control Center
STB	Super Tropical Bleach
STOLS	Surface-Towed Ordnance Locator System
SUPSHIP	Supervisor of Shipbuilding Conversion and Repair
SWMU	Solid Waste Management Unit
SWNAVFACENGCOM	Southwest Division, Naval Facilities Engineering Command
TCA	Trichloroethane
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TNT	Trinitrotoluene
TRC	Technical Review Committee
UMDA	Umatilla Army Depot Activity
UNDEX	Underwater Explosion
USACE	United States Army Corps of Engineers
USARC	United States Army Reserve Center
USATHAMA	United States Army Toxic and Hazardous Materials Agency
USGS	U.S. Geological Survey
USMAWP	United States Military Academy, West Point
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WGA	Western Governors' Association
WR	Warner-Robbins
WR-ALC	Warner-Robbins Air Logistics Center

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