PUBLIC COMMENT DRAFT
Rocky Flats Cleanup Agreement

March 14, 1996

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
and
THE STATE OF COLORADO

IN THE MATTER OF:	)	FEDERAL FACILITY
	)	AGREEMENT AND
	)	CONSENT ORDER
UNITED STATES DEPARTMENT	)	
OF ENERGY		
ROCKY FLATS ENVIRONMENTAL	)	
TECHNOLOGY SITE	)	CERCLA XXXXXXX
	)	RCRA(3008(h))XXXXXXX
	)	
	)	STATE OF COLORADO
	)	DOCKET # XXXXXXXX

PREAMBLE TO THE ROCKY FLATS CLEANUP AGREEMENT

A. INTRODUCTION

Activities at Rocky Flats will be guided generally by the Rocky Flats Vision. The Rocky Flats Cleanup Agreement is the legally binding agreement between the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE) to accomplish the required cleanup of radioactive and other hazardous substances contamination at and from the Rocky Flats Environmental Technology Site (RFETS). The U.S. Government owns RFETS and DOE is the Party required by law to perform the cleanup work. DOE's activities in this regard are subject to the EPA's and CDPHE's statutory authorities to approve and monitor both the conduct and the completion of the cleanup.

The following objectives will help to guide implementation of the Rocky Flats Cleanup Agreement (RFCA) in order to achieve the goals expressed in the Vision. The provisions of the RFCA, which

follow, comprise the legal document that describes the relationship between the Agencies (the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE)) during cleanup. The RFCA will also ensure the effective and efficient cleanup of the Site. These objectives, while not legally binding commitments unless also included within the body of RFCA (or other binding documents, orders or regulatory requirements), defines how the DOE and the regulators will oversee specific activities at the Site, and will guide implementation of RFCA to be consistent with, and to help achieve the goals of the Rocky Flats Vision.

B. OBJECTIVES

Each objective includes a broad Summary, followed by more specific statements for each topic in the Near-Term and Intermediate Site Conditions.

1. Disposition of Plutonium, Other Special Nuclear Material and Transuranic Wastes

Summary: DOE will stabilize, consolidate, and temporarily store plutonium, other special nuclear material and transuranic wastes on-site for removal; ultimate removal of plutonium is targeted for no later than 2015.

a. Near-Term Site Condition. DOE will stabilize, consolidate, and store plutonium, other special nuclear material, and transuranic wastes on-site in a safe and cost- effective manner. Plutonium is targeted for removal from the Site as soon as possible, beginning no later than 2010 and completed by 2015. No additional plutonium or other special nuclear material will be transferred onto the Site.

Other special nuclear material will be shipped off-site as soon as possible.

Transuranic waste will be shipped to the Waste Isolation Pilot Plant (WIPP) as soon as this facility is available to accept waste from the Site. DOE, EPA and the State of Colorado are committed to aggressively pursuing the early opening of WIPP and making it available to accept wastes from the Site as soon as possible. If WIPP is not opened, does not have sufficient capacity to accept all of the Site's transuranic waste, or is otherwise not available, another off-site facility will be identified.

b. Intermediate Site Condition. Plutonium and other special nuclear material are targeted for removal from the Site by 2015. By the end of the Intermediate Site Condition, all transuranic waste will have been removed from the Site.

2. On-Site and Off-Site Waste Management

There are substantial risks and costs in removing wastes now stored on-site and those wastes that will be generated during plutonium stabilization, cleanup and building decommissioning. DOE, together with the regulators and with appropriate public participation, will determine which wastes are stored, disposed or removed through an ongoing process consistent with this Statement .

Summary: Waste management activities for low-level, low-level mixed, hazardous, and solid wastes will include a combination of on-site treatment, storage in a retrievable and monitored manner, disposal, and off-site removal. Low-level and low-level mixed wastes generated during cleanup that remain on-site will be stored temporarily pending shipment off-site, stored for a longer term in a retrievable and monitored manner, or disposed on-site.

a. Near-Term Site Condition. Initially, controlling the sources of contamination will take priority over off-site waste shipments to maximize risk reduction. Off-site shipments of waste will occur based on risk,

technology, facility availability, and cost. DOE, EPA and CDPHE will actively seek off-site facilities to accept the Site's waste.

During this period, most active environmental cleanup will be completed. Cleanup will include the treatment, consolidation, and management of contaminated soil, water and material. Low-level and low-level mixed wastes generated during cleanup that remain on-site will be stored temporarily pending shipment off-site, stored for a longer term in a retrievable and monitored manner, or disposed on-site. For both storage options, the wastes will be stored in a manner that is environmentally safe, and in compliance with legal requirements. Decisions on the specific degree of retrievability and monitorability will be based on the following factors: risk, legal requirements, waste type, technology, cost effectiveness, and community concerns. For any stored waste that remains on-site (other than those stored temporarily awaiting shipment off-site), storage facilities will be designed to provide safe storage with an option to convert to disposal at some time in the future. Decisions about whether to utilize treatment, storage or disposal options, or to convert from storage to disposal, will be made during this period, always with an opportunity for public input.

Existing and any future on-site landfills will be closed in compliance with legal requirements. The landfills will be capped using a low-profile contour, designed to blend in with the natural topography of the Site.

b. Intermediate Site Condition. Waste materials that are to be removed will have been shipped off-site. Any necessary follow-up cleanup related to the former storage sites will have been completed. By the end of this period, decisions will have been made regarding stored material for its continued storage, treatment or disposal.

3. Water Quality

Summary: At the completion of cleanup activities, all surface water on-site and all surface and groundwater leaving the Site will be of acceptable quality for all uses.

a. Near-Term Site Condition. The Agencies are committed to reliable controls and monitoring to protect water quality during cleanup activities, storage of special nuclear material and wastes, and storm events. Contaminants and contamination sources that pose an unacceptable risk will be removed, controlled, or stabilized. Protection of all surface water uses will be a basis for making interim soil and groundwater cleanup and management decisions. Actions will be designed to prevent adverse impacts to ecological resources and groundwater consistent with the Action Levels and Standards Framework Attachment to the RFCA.

Surface water leaving the Site will continue to be diverted around Standley Lake and the Great Western Reservoir. The quality of surface water leaving the Site during cleanup activities will meet standards for aquatic life, recreation, and agricultural classifications, but not for domestic (drinking water) use. On-site groundwater will not be used for any purpose unrelated to Site cleanup activities. Surface water standards for plutonium and americium during cleanup activities will be based on a conservative risk-based approach. Proposed changes to state water quality standards will be presented to the Colorado Water Quality Control Commission for approval.

Water quality management plans will be developed with the participation and involvement of municipalities and counties whose water supplies are potentially affected by the Site.

b. Intermediate Site Condition. By the time cleanup activities are completed, all on- site surface water

and all surface water and groundwater leaving the Site will be of acceptable quality for all uses including domestic water supply. Groundwater quality in the Outer Buffer Zone and off-site will support all uses. On-site groundwater will not be used for any purpose unrelated to Site cleanup activities. Reliable monitoring and controls to protect water quality during storage of plutonium, other special nuclear material and wastes, and during storm events, will continue. To assure the above described water quality, long-term operation and maintenance of waste management and cleanup facilities will continue.

4. Cleanup Guidelines

Summary: Cleanup activities will be conducted in a manner that will:

- **** reduce risk;**
- **** be cost-effective;**
- **** protect public health;**
- **** protect reasonably foreseeable land and water uses;**
- **** prevent adverse impacts to ecological resources, surface water and groundwater; and**
- **** be consistent with a streamlined regulatory approach.**

a. Near-Term Site Condition. Cleanup will include treatment, consolidation, and management of contaminated soil, water and materials in a manner that protects public health, reduces the impact to the natural environment, and minimizes the generation of new wastes. Environmental cleanup will be accomplished to protect and support open space uses in the Inner and Outer Buffer Zones and limited industrial uses as noted in the Future Site Use

Working Group (FSUWG) report [1]. In the vicinity of buildings converted to non-DOE use, cleanup will be to industrial use levels in the Industrial Area. See also the discussion in the Land Use section below.

b. Intermediate Site Condition. After off-site disposition of plutonium, other special nuclear material and transuranic wastes, the cleanup of the buildings that contained these materials, and of any residual waste from their shipment or storage, will be completed. Appropriate monitoring, operation and maintenance of any remaining treatment, storage, or disposal facilities will continue.

5. Land Use

Summary: **Cleanup decisions and activities are based on open space and limited industrial uses; the particular land use recommendations of the Future Site Use Working Group (FSUWG) are not precluded; specific future land uses and post-cleanup designations will be developed in consultation with local governments.**

a. Near-Term Site Condition. The Inner and Outer Buffer Zones will be managed, and cleaned as necessary, to accommodate open space uses. During this period, access to the Inner and Outer Buffer Zones will remain controlled consistent with cleanup efforts and the need for a safety and security zone around plutonium, other special nuclear material and transuranic wastes on-site. A part of the Industrial Area will be reserved for waste treatment, storage, or disposal facilities.

During cleanup, non-DOE activities (such as economic conversion) may take place in areas other

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1 The FSUWG's June 1995 Report, "Future Site Use Recommendations," is available in the repositories listed in Attachment 7.

than the Inner and Outer Buffer Zones, provided they do not adversely impact cleanup and closure work and do not require a DOE subsidy. Particular open space and industrial uses as recommended by the FSUWG are not precluded. These uses will be developed in consultation with local governments. See the FSUWG Report for additional detail regarding recommended land uses during and after cleanup.

b. Intermediate Site Condition. At the beginning of this period, access to the Inner and Outer Buffer Zones will continue to be controlled consistent with the safety and security needs of plutonium, other special nuclear material and transuranic wastes. After plutonium, other special nuclear material and transuranic wastes are removed, DOE will work with local governments to determine the optimal use of the Inner and Outer Buffer Zones. Any access controls and/or institutional controls that are necessary or appropriate for public health, environmental protection, ongoing monitoring and operation and maintenance activities, will continue.

6. Environmental Monitoring

Summary: Environmental monitoring will be maintained for as long as necessary.

a. Near-Term Site Condition. A robust environmental monitoring system will be maintained to provide information for cleaning up the Site, to assure public safety, and to keep the public informed. The system will maximize the available resources of the Agencies and municipalities and will minimize duplicative efforts. The system will include both routine (baseline and regular) and non-routine (to respond to events or worst case) monitoring.

b. Intermediate Site Condition. After plutonium, other special nuclear material and transuranic wastes are gone, the monitoring system will continue to address

remaining waste management facilities and water quality needs. This monitoring system will remain in place indefinitely.

7. **Building Disposition**

Summary: All contaminated buildings will be decontaminated as required for future use or demolition; unneeded buildings will be demolished.

a. Near-Term Site Condition. All contaminated buildings will be decontaminated as required for future use or demolition. Building demolition or reuse will take place after plutonium, other special nuclear material, transuranic waste, and radioactive hot-spots have been removed. In most cases, contaminated systems (such as gloveboxes, duct-work and piping) will be decontaminated and removed prior to demolition. In a few instances, contaminated systems will be decontaminated and demolished along with the building.

Radioactive material removed from buildings will be either processed and added to the Site's plutonium inventory, packaged as transuranic waste for eventual removal, or handled as low-level or low-level mixed waste and stored in a retrievable and monitored manner. Uncontaminated or decontaminated buildings will be demolished or made available to the private sector for other economic uses in consultation with local officials, provided that these uses do not adversely impact cleanup and closure activities and do not require DOE subsidies. Building debris will be disposed of as follows: clean rubble will be recycled, stored or removed, or disposed on-site; contaminated rubble will be stored on-site in a retrievable and monitored manner or disposed.

b. Intermediate Site Condition. By the end of this period, the remaining buildings that were used for plutonium, other special nuclear material, and

transuranic waste storage will have been demolished. Also by the end of this period, decisions will have been made regarding material that have been stored in a retrievable and monitored manner for its continued treatment, storage or disposal.

8. Mortgage Reduction

Summary: **Plutonium, other special nuclear material and transuranic wastes will be safely consolidated into the smallest number of buildings to reduce operating costs and shrink the security perimeter; contaminated and non-contaminated buildings will be decommissioned and either demolished or turned over for other non-DOE uses.**

a. Near-Term Site Condition. DOE will stabilize and consolidate plutonium, other special nuclear material and transuranic wastes to achieve safer and less expensive storage while awaiting removal of these materials. The contaminated buildings from which these materials were removed will be decontaminated and closed. The Site will also close or convert to non-DOE uses non-contaminated buildings as expeditiously as possible. Utility and other Site infrastructure will be substantially reduced during this period. As operating costs are reduced through building shut-downs, every effort will be made to return the cost savings to the Site to fund cleanup and closure activities.

b. Intermediate Site Condition. During this period, the secured area will be further reduced and eventually removed. Operating costs will be minimized. By the end of this period, plutonium, other special nuclear material and transuranic wastes will have been removed from the Site and the related buildings will have been decontaminated and either demolished or converted to non-DOE uses. Closure of non-contaminated buildings will be completed by the end of this period. Also by the end of this period,

existing Site infrastructure will be essentially eliminated, except for monitoring, and operation and maintenance of any remaining waste storage or disposal facilities.

9. Definitions of terms used in this Preamble

The following description of terms used in this Preamble is provided for information. These are not scientific definitions. They apply only to these terms as used in this Preamble.

a. Plutonium

Plutonium is found in the form of metals, oxides, solutions and residues. These materials are currently in storage or will be recovered in the future.

b. Special Nuclear Material

Special nuclear material is plutonium, plutonium-uranium combinations, and enriched uranium. All of the Site's estimated 14.2 tons of plutonium is included within the broad definition of special nuclear material. Although special nuclear material and plutonium largely overlap, the terms are listed separately throughout the Preamble to address all forms of special nuclear material and to specifically identify the objectives for plutonium.

c. Transuranic Waste

Transuranic waste is a radioactive waste contaminated with elements heavier than uranium (such as plutonium and americium) in concentrations above 100 nanocuries per gram. Transuranic waste is both process waste from past production activities as well as waste generated from building decontamination. Typical transuranic waste at the Site is similar to low-level waste but with generally higher levels of radioactivity. For the purposes of this Statement, transuranic waste is both transuranic waste and transuranic-mixed waste, which is transuranic waste that contains hazardous waste.

d. Low-Level Waste

Low-level waste is a radioactive waste that is not high-level waste, spent nuclear fuel, by-product material, or transuranic waste (although it may contain small amounts of transuranic elements). At the Site, it exists in many forms such as rags, paper, plastic, glassware, filters, soils and some building rubble.

e. Low-Level Mixed Waste

Low-level mixed waste is low-level waste that contains hazardous waste.

f. Near-term Site Condition

The Near-Term Site Condition is the time period during which the following activities will be completed: consolidation, stabilization and safe storage of plutonium, other special nuclear material and transuranic wastes; storage in a retrievable and monitored manner, disposal, and some removal of low-level, low-level mixed and other wastes; and nearly all cleanup activities. *It is the intent of the* Agencies to accelerate Site activities to substantially achieve and complete risk reduction and cleanup during this period of time. Completion of activities in this period is anticipated to take about 8 to 15 years.

g. Intermediate Site Condition

The Intermediate Site Condition is the period of time during which all plutonium, other special nuclear material, and transuranic wastes will be removed from the Site. By the end of this period, none of these materials, nor the buildings that contained them, will remain. Also by the end of this period, all low-level, low-level mixed, hazardous, and solid wastes will have been shipped off-site, disposed, or stored in a retrievable and monitored manner to protect public health and the environment. Any remaining cleanup will be completed. Activities occurring in this period are anticipated to be completed about 12 to 20-25 years from now.

h. Long-Term Site Condition

The Long-Term Site Condition follows the Intermediate Site Condition and continues through the indefinite future. Additional cleanup and removal activities may be conducted in this time period as funding, technology and political opportunities allow. While recognizing that some members of the public prefer cleanup to background levels, the Agencies are unable to commit to this goal. The Agencies will continue to explore new technologies to make further cleanup possible. Nothing in this Statement precludes the goal of further cleanup or waste removal. Activities beyond the Intermediate Site Condition are unknown, and perhaps unknowable, and are therefore not described.

ROCKY FLATS CLEANUP AGREEMENT

Based on the information available to the Parties on the effective date of this FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (the Rocky Flats Cleanup Agreement ("RFCA" or "this Agreement")) and without trial or adjudication of any issues of fact or law, the Parties have exercised good faith and due diligence in establishing both the substantive and procedural requirements of this Agreement. The Parties believe, at the time this Agreement is executed, that these requirements are achievable. Therefore, the Parties agree as follows:

PART 1 JURISDICTION

1. The United States Environmental Protection Agency, Region VIII (EPA), enters this Agreement pursuant to sections 104, 106(a) and 120(e) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9604, 9606(a), and 9620(e), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499 (hereinafter jointly referred to as CERCLA); sections 6001, 3008(h), and 3004(u) and (v) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6961, 6928(h), 6924(u) and (v), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), Pub. L. 98-616 and the Federal Facility

Compliance Act of 1992, Pub. L. No. 102-386 (hereinafter jointly referred to as RCRA); and Executive Orders 12088 and 12580.

2. The Colorado Department of Public Health and Environment ("CDPHE") enters into this Agreement pursuant to sections 107, 120(f), 121, and 310 of CERCLA, 42 U.S.C. sections 9607, 9620, and 9810, section 3006 of RCRA, 42 U.S.C. sections 6926, the Colorado Hazardous Waste Act ("CHWA"), section 25-15-301(1) C.R.S. Pursuant to section 3006(b) of RCRA, 42 U.S.C. 6926(b), on November 2, 1984, the Administrator of EPA authorized CDPHE of Colorado to administer and enforce the State hazardous waste program in lieu of the federal program. CDPHE was authorized to regulate radioactive mixed waste on November 7, 1986, and was further authorized to administer and enforce certain portions of the HSWA amendments on July 14, 1989. The Colorado Department of Public Health and Environment (CDPHE) is the State agency designated by the CHWA, section 25-15-301(1) C.R.S. (1989), to implement and enforce the provisions of RCRA and CHWA. Requirements of this Agreement that relate to RCRA and CHWA are a Compliance Order on Consent issued by CDPHE pursuant to section 25-15-308(2), C.R.S. CDPHE also enters into this Agreement pursuant to the Colorado Air Pollution Prevention and Control Act, section 25-7-101, C.R.S., and, if delegation of the federal Clean Water Act program for the Rocky Flats Environmental Technology Site is received, the Colorado Water Quality Control Act, section 25-8-101, C.R.S.

3. The United States Department of Energy (DOE) enters into this Agreement pursuant to section 120(e) of CERCLA, 42 U.S.C. §§ 9620 (e); sections 6001, 3008(h), and 3004(u) and (v) of RCRA, 42 U.S.C. §§ 6961, 6921(h), 6928(u) and (v); section 118 of the Clean Air Act, 42 U.S.C. section 7418; Executive Orders 12088 and 12580; and the Atomic Energy Act of 1954, as amended (AEA), 42 U.S.C. § 2011 et seq.

4. The Parties agree that they are bound by this Agreement and that the requirements of this Agreement may be enforced against DOE pursuant to Parts 16 (Enforceability), 17

(Stipulated Penalties), and 18 (Reservation of Rights) of this Agreement or as otherwise provided by law. DOE consents to and will not contest EPA or State jurisdiction for the purposes of executing and enforcing this Agreement or its requirements.

5. The activities undertaken pursuant to this Agreement are regulated under CERCLA, the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP), RCRA and CHWA and their implementing regulations, and other applicable State environmental law, and shall be implemented in accordance with all applicable statutes, regulations, and Executive Orders. If any amendment to or new statute or regulation pertinent to this Agreement becomes effective subsequent to the date of execution of this Agreement, any modifications to this Agreement made necessary by such changes in the law shall be incorporated by modification into this Agreement, and other modifications related to such changes in the law shall be subject to further negotiations. The Parties shall conduct an annual review of all applicable new and revised statutes and regulations and written policy and guidance to determine if an amendment pursuant to Part 19 (Amendment of Agreement) is necessary. Any reference in this Agreement to a statute shall include that statute's implementing regulations.

6. The 1991 Federal Facility Agreement and Consent Order, CERCLA VIII-91-03, RCRA (3008(h)) VIII-91-07 and State of Colorado Docket number 91-01-22-01, shall terminate and be replaced with this Agreement by consensus of the Parties, on the effective date of this Agreement as established pursuant to Part 33 (Public Comment/Effective Date) of the Agreement.

PART 2 PARTIES AND ROLE OF DOE CONTRACTORS

7. The Parties to this Agreement are EPA, CDPHE, and DOE.

8. The Parties acknowledge the guidance contained in the United States Office of Management and Budget Policy Letter 92-1 dated September 30, 1992, "Inherently

Governmental Functions," as that guidance pertains to avoiding potential conflicts of interest by federal contractors. Accordingly, DOE will exercise independent judgment with respect to policy decisions associated with meeting the requirements of this Agreement. DOE shall be responsible for satisfying the requirements of this Agreement regardless of whether DOE carries out the requirements through its own employees, agents, and support contractors, or through the integrating and management contract for the Site. Upon the request of EPA and/or CDPHE, DOE shall provide the identity and work scope of employees, agents, and support contractors used in carrying out the requirements of this Agreement. Further, upon request of EPA and/or CDPHE, DOE shall provide the identity and work scope of the Site's integrating and management contractor and any second tier subcontractor used in carrying out the requirements of this Agreement.

PART 3 STATEMENT OF PURPOSE

9. The purpose of this Agreement is to establish the regulatory framework for achieving the ultimate cleanup of the Rocky Flats Environmental Technology Site. To further this purpose, the Parties have developed a set of general parameters to guide individual cleanup decisions, without predetermining those decisions. These parameters include assumptions regarding reasonably foreseeable future land and water uses, strategic approaches to cleanup, approaches to setting cleanup standards, options for interim storage and expectations for removal of plutonium, fate of existing buildings, and waste disposal. The parameters are contained in the Preamble to this Agreement as well as a broadly stated Rocky Flats Vision ("Vision"). Though the Preamble is not "enforceable" per se, the Parties intend that decisions made under this Agreement shall consider and reflect the objectives contained in the Vision and the Preamble.

10. In addition to the objectives expressed in the Preamble, the specific purposes of this Agreement are to:

    a. Ensure that the Parties work together in a cooperative spirit that facilitates the cost effective and timely

cleanup of the Rocky Flats Environmental Technology Site (RFETS or the Site); that promotes an orderly, effective investigation and cleanup of contamination at the Site; and that avoids litigation between the Parties.

b. Ensure that the environmental impacts associated with activities at the Site will continue to be investigated and that appropriate response action is taken and completed as necessary to protect the public health, welfare, and environment.

c. Coordinate an early review of response actions by the appropriate federal and State Natural Resources Trustees to minimize or eliminate potential injury to natural resources.

d. Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the Site and to ensure that such actions are conducted in accordance with CERCLA, RCRA, CHWA, other applicable State environmental laws, including any relevant written guidance or policy.

e. Reduce risks to RFETS workers, the public, and the environment through the cleanup process, in accordance with applicable standards and regulatory requirements.

f. Seek ways to accelerate cleanup actions and eliminate unnecessary tasks and reviews, by requiring that the Parties to the Agreement work together, within each Party's statutory role, while fully involving other stakeholders as required by law and good practice.

g. Provide the flexibility to modify the work scope and schedules, recognizing that priorities of specific tasks and schedules may change as the cleanup progresses due to emerging information on Site conditions, risk priorities, and available resources.

h. Provide for appropriate regulation or oversight of activities in contaminated buildings consistent with the following principles:

(1) a single set of protocols or a single process;
(2) where possible, a single regulator for regulation or oversight;
(3) timely reviews;
(4) a bias for action; and
(5) appropriate accountability of all Parties.

i. Ensure early and meaningful public involvement, including local elected officials, in the implementation of this Agreement and in the initiation, development and selection of remedial actions to be undertaken at the Site, including timely review of applicable data, reports, and action plans developed for the site.

j. Establish non-enforceable target dates regarding the removal of special nuclear material from RFETS. As used in this paragraph, "special nuclear material" means weapons-usable fissile material, and includes plutonium, plutonium-uranium combinations, and enriched uranium. The Parties will review these targets in the year 2000, modify them as necessary or appropriate, and re-establish them as enforceable commitments from that date forward. The enforceable commitments may carry financial incentives/disincentives, and will be framed to operate within the regulatory framework existing at the time of adoption (2000). The non-enforceable target dates below are established at this time for inclusion in this Agreement:

(1) DOE will begin to remove special nuclear material from RFETS as soon as possible, but no later than 2010.
(2) DOE will complete the removal of special nuclear material from RFETS by 2015.

k. Conduct the remediation of contamination at the Site in a manner that is consistent with the Vision and the Preamble.

l. Substantially reduce the costs of cleanup activities at the Site through improved project management, greater involvement of regulators in DOE's planning and budgeting processes, increased reliance on accelerated actions, improved oversight of cleanup, greater use of consultative approaches, elimination of unnecessary procedures, and streamlining of other procedures.

m. Establish one set of consistent requirements for the performance of a RCRA Facility Investigation/Remedial Investigation (RFI/RI) for OUs at the Site as appropriate to determine the nature and extent of the threat to the public health or welfare or the environment caused by the release or threatened release of hazardous substances, pollutants, contaminants, hazardous waste or constituents at the Site; and to establish one set of consistent requirements for the performance of a Corrective Measures Study/Feasibility Study (CMS/FS) for Ous at the Site, as appropriate, to identify, evaluate, and select alternatives for the appropriate remedial/corrective action(s) to prevent, mitigate, or abate the release or threatened release of hazardous substances, pollutants, contaminants, hazardous waste or constituents at the Site in accordance with CERCLA, RCRA, CHWA, and other applicable State environmental law.

n. Describe the roles and responsibilities of the Parties.

o. Coordinate all of DOE's cleanup obligations under CERCLA, RCRA, and CHWA in a single agreement to streamline compliance with these three statutes.

p. Establish a process for identifying the applicable or relevant and appropriate legal requirements for response action(s) regulated under CERCLA.

q. Provide for continued operation and maintenance of the selected remedial/corrective action(s) as appropriate.

r. Establish a procedural framework and schedule such that the remedial investigation and response actions selected and implemented by the Parties are sufficient to meet the criteria and procedures for the Site's timely removal and delisting from the NPL.

PART 4 STATUTORY COMPLIANCE/RCRA-CERCLA COORDINATION

11. The Parties intend to use this Agreement to coordinate DOE's CERCLA response obligations, CHWA closure obligations for hazardous waste management units identified in this Agreement, and CHWA and RCRA corrective action obligations. Therefore, the Parties intend that compliance with the requirements of this Agreement will be deemed to achieve compliance with:

a. CERCLA, 42 U.S.C. § 9601 et seq., and specifically that the cleanup at the Site will satisfy all applicable or relevant and appropriate federal and State laws and regulations, to the extent required by section 121 of CERCLA, 42 U.S.C. § 9621;

b. the corrective action requirements of sections 3004(u) and (v) of RCRA, 42 U.S.C. § 6924(u) and (v), for a RCRA permit, and section 3008(h), 42 U.S.C. § 6928(h), for interim status facilities;

c. the corrective action requirements of CHWA, including 6 CCR 1007-3 sections 264.101 and 265.5; and

d. the closure requirements of CHWA for those hazardous waste management units identified in Attachment 3.

12. The Parties also intend to coordinate the remedial activities that are regulated under this Agreement with requirements of

the Federal Facility Compliance Act to develop a plan or agreement for treatment of mixed waste generated by actions required under this Agreement. This coordination will occur as follows:

a. For mixed wastes generated under this Agreement that will not be treated by the mixed waste treatment capacity developed to treat non-remedial wastes in accordance with the then applicable Site Treatment Plan and Order enforced by CDPHE, the state portion of the relevant decision document shall constitute the order required under 42 U.S.C. § 6939c(b)(5).

b. For mixed wastes generated under this Agreement that will be treated by the mixed waste treatment capacity developed to treat non-remedial wastes in accordance with the then applicable Site Treatment Plan and Order enforced by CDPHE, compliance with 42 U.S.C. § 6939c(b)(5) shall be regulated under the then applicable Site Treatment Plan and Order enforced by CDPHE, and shall not be enforced under this Agreement.

13. The Parties recognize that:

a. DOE is obligated to comply with applicable requirements of RCRA, CHWA CERCLA, and State environmental law for all remedial activities under this Agreement;

b. the coordination of these statutory requirements under this Agreement in no way diminishes DOE's obligations;

c. the inclusion of these statutory requirements in a single document serves to facilitate DOE's efficient compliance with these statutory requirements; and

d. the Agreement is a single document that has dual purposes of serving as both a CERCLA § 120 Interagency Agreement and a CHWA corrective

action order; the requirements of both are enforceable by the Parties.

14. The Parties intend that any final response action selected, implemented, and completed under this Agreement shall be deemed by the Parties to be protective of human health and the environment such that remediation of releases covered by this Agreement shall obviate the need for further action outside the scope of this Agreement to protect human health or the environment on those same Ous. While the Parties intend to minimize any residual injury to natural resources, completion of work pursuant to this Agreement does not bar a claim by the State for natural resource damages.

15. DOE is subject to a CHWA permit that contains provisions governing corrective action for releases of hazardous wastes or constituents at the Site. These corrective action provisions were drawn from the Statement of Work element of the 1991 IAG. The Parties recognize the continuing need to ensure consistency between the corrective action requirements of the permit and the requirements of this Agreement, and agree to take such actions as are necessary to accomplish this goal. Therefore, the Parties agree that when this Agreement becomes effective, CDPHE shall issue a permit modification to remove the "Statement of Work" references from Part 15 of the CHWA permit and the Attachments section of the CHWA Permit, and to incorporate the following language as the corrective action requirement of the CHWA permit:

> There have been releases of hazardous wastes and constituents from solid waste management units into the environment at Rocky Flats. Corrective and remedial actions to address these releases are being regulated by the Department [CDPHE] and EPA under the Rocky Flats Cleanup Agreement, Compliance Order on Consent No. 96-XX-XX-01 ("RFCA"). Following implementation of these corrective and remedial actions, the Department [CDPHE] will be making a final corrective action decision for each OU. The final corrective action decisions will be incorporated as modifications to this

permit. If the RFCA is terminated before all corrective action has been taken, this permit shall be modified to incorporate requirements of the RFCA that are requirements of CHWA.

16. The parties recognize that under section 121(e)(1) of CERCLA, portions of the response actions required by this Agreement and conducted entirely on the Site are exempted from the procedural requirement to obtain federal, state, or local permits, when such response action is selected and carried out in compliance with section 121 of CERCLA. It is the understanding of the parties that the statutory language is intended to avoid delay of on-Site response actions, due to procedural requirements of the permit process. The Parties agree that the following activities are being approved, at least in part, pursuant to CERCLA authorities:

a. remedial actions in the Buffer Zone (other than an action to construct and operate a retrievable, monitored storage or disposal facility as described in paragraph 80, if such is proposed for the Buffer Zone);
b. decommissioning activities;
c. activities required under any concurrence CAD/ROD; and
d. remedial actions in the Industrial Area for hazardous substances that are not also hazardous wastes or hazardous constituents (e.g., radionuclides that are not mixed wastes and PCBs).

Therefore, no permits are required for the activities described in (a)-(d) above. Subject to paragraph 97, DOE agrees to seek and implement any federal, state or local permits, including RCRA or CHWA permits, for operations or processes required to implement activities regulated under this Agreement, other than those listed in (a)-(d) above. Notwithstanding the foregoing, this Agreement does not constitute an admission by any Party as to whether permits would be required if EPA and CDPHE do not issue concurrence CAD/RODs. In such a case, the provisions of Parts 15 (Dispute Resolution) and 18 (Reservation of Rights) apply.

17. When DOE proposes a response action regulated under CERCLA to be conducted that, in the absence of CERCLA section 121(e)(1) and the NCP, would require a federal or State permit, DOE shall include in the submittal:

    a. Identification of each permit which would otherwise be required.

    b. Identification of the standards, requirements, criteria, or limitations which would have had to have been met to obtain each such permit.

    c. Explanation of how the response action proposed will meet the standards, requirements, criteria, or limitations identified in subparagraph 17b immediately above.

18. Upon the request of DOE, EPA and CDPHE will provide their positions with respect to paragraphs 17b and 17c above in a timely manner.

19. This Part is not intended to relieve DOE from any applicable requirements for the shipment or movement of hazardous waste or hazardous substances off the Rocky Flats Environmental Technology Site. The shipment or movement of hazardous waste or hazardous substances off the Rocky Flats Environmental Technology Site shall also comply with the requirements of CERCLA § 121(d)(3), subject to the provisions of CERCLA § 121(d)(4). DOE shall obtain all permits and comply with applicable federal, State, or local laws for such shipments. DOE shall submit timely applications and requests for such permits and approvals. Disposal of hazardous substances off-site shall comply with DOE's Policy on Off-Site Transportation, Storage, and Disposal of Nonradioactive Hazardous Waste, dated June 24, 1986, and the EPA Off-Site Response Action Policy, dated May 6, 1985, 50 Fed. Reg. 45933 (November 5, 1985), as amended by EPA's November 13, 1987, "Revised Procedures for Planning and Implementing Off-Site Response Actions" and as subsequently amended.

20. DOE shall notify CDPHE and EPA in writing of any permits RFETS is required to obtain for off-site activities related to this Agreement as soon as it becomes aware of the requirement. Upon request, DOE shall provide CDPHE and EPA with copies of all such permit applications and other documents related to the permit process.

21. If a permit necessary for implementation of activities related to this Agreement is not issued or is issued or renewed in a manner that is materially inconsistent with the requirements of this Agreement, DOE shall notify CDPHE and EPA of its intention to modify the baseline and/or propose modifications to regulatory milestones to comply with the permit (or lack thereof). Notification by DOE of its intention to propose modifications shall be submitted within 10 business days of receipt by DOE of notification that: (1) a permit will not be issued; (2) a permit has been issued or reissued; (3) a final determination with respect to any appeal related to the issuance of a permit has been entered. Within 30 days from the date it submits its notice of intention to propose modifications, DOE shall submit to CDPHE and EPA its proposed modifications with an explanation of its reasons in support thereof.

22. CDPHE and EPA shall review any of DOE's proposed modifications submitted pursuant to the preceding paragraph. If DOE submits proposed modifications prior to a final determination of any appeal taken on a permit needed to implement this Agreement, CDPHE and EPA may elect to delay review of the proposed modifications until after such final determination is entered. If CDPHE and EPA elect to delay review, DOE shall continue implementation of this Agreement as provided in the following paragraph. If EPA and CDPHE fail to agree to a modification proposed by DOE within 30 days of such proposal, submitted pursuant to the preceding paragraph, DOE may invoke the Dispute Resolution procedures of Subpart 15E or 15B, as appropriate.

23. During any appeal of any permit required to implement this Agreement or during review of any of DOE's proposed modifications as provided in the preceding paragraph, DOE

shall continue to implement those portions of this Agreement which can be reasonably implemented pending final resolution of the permit issue(s).

24. Some of the activities regulated under this Agreement may also be subject to the oversight of the Defense Nuclear Facility Safety Board (DNFSB). To ensure coordination of the DNFSB's oversight role with the regulation of these activities under this Agreement, the Parties and the DNFSB have entered into a Memorandum of Understanding, a copy of which is found in Appendix 1.

PART 5 DEFINITIONS

25. If there is an inconsistency between CERCLA, RCRA, and CHWA with the following definitions, the Agreement's definition controls. If there is no definition in this Agreement, but there is an inconsistency between the statutory definitions for CERCLA, RCRA, and CHWA, including their related regulatory definitions, the definitions in CERCLA and the NCP shall control. The following definitions are used for the purposes of this Agreement:

a. Accelerated Actions means those expedited response actions approved as a Proposed Action Memorandum, Interim Measure/Interim Remedial Action, or Standard Operating Procedure.

b. Additional work means work required by EPA and/or CDPHE after milestone setting for the current fiscal year that is not already included in the baseline.

c. Administrative Record shall refer to the compilation of documents which establishes the basis of all remedial action decisions for each OU at the Site, as required by section 113(k)(1) of CERCLA.

d. Rocky Flats Cleanup Agreement, "this Agreement" or RFCA means the body of this Agreement (pages 1-127) and all Attachments, Amendments, approved documents, other approvals by the LRA or both EPA and the State, as appropriate, final written resolution

of any dispute, and amendments to this document, but does not include Appendices. All requirements in such Attachments, Amendments, approved documents, LRA approvals, work description documents, and amendments shall be incorporated into this Agreement. Approved documents, other approvals, final resolutions of dispute shall not be physically attached to this document. Appendices to this Agreement are related, but separate documents that are appended for convenience only. Appendices do not constitute parts of this Agreement.

e. Approval, in relation to documents, means State and/or EPA formal consent that a document delivered for review pursuant to this Agreement contains the requisite information at the appropriate level of detail to comply with this Agreement.

f. Atomic Energy Act or AEA means the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 et seq. and its implementing regulations.

g. Authorized Representative shall include a Party's contractors or agents acting within the scope of specifically defined authority.

h. Baseline describes the current scheduled scope of work for the Site presented in a manner that is resource loaded and integrated across all Site activities using standard industry project management techniques and practices. It will present the quantitative cost, schedule, and technical performance for a given activity and will be available for use as a standard against which to measure and control progress during the performance of the work that the baseline describes.

i. Buffer Zone means that area of RFETS designated on the map attached hereto as Attachment 2 and generally described as the roughly 6000 acres unoccupied by buildings or development that

surrounds the Industrial Area at the geographic center of RFETS and extends to its borders.

j. Building and equipment disposition standards means standards establishing levels of residual contamination that must be achieved to allow disposition of buildings and equipment. These standards may vary with the nature of the disposition, i.e., whether the buildings and equipment are proposed to be released for use by persons other than DOE, are to be placed in an on-site storage or disposal facility, or are to be closed in place.

k. CAPPCA means the Colorado Air Pollution Prevention and Control Act, § 25-7-101 et seq., C.R.S., and implementing regulations.

l. CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499, the Community Environmental Response Facilitation Act (CERFA), Pub. L. No. 102-26 and its implementing regulations, and the NCP and other implementing regulations.

m. CHWA Permit means a permit issued under CHWA for treatment, storage, or disposal of hazardous waste.

n. CDPHE means the Colorado Department of Public Health and Environment and/or any predecessor and successor agencies, their employees, and authorized representatives.

o. Colorado Hazardous Waste Act (CHWA) means sections 25-15-101 et seq., C.R.S. (1982 & Supp.) as amended, and its implementing regulations.

p. Community Relations Plan or CRP means that plan described in 40 CFR 300.430(c)(ii).

q. Corrective Action (CA) means the RCRA/CHWA term for the cleaning up of releases of hazardous waste or hazardous constituents.

r. Corrective Action Decision (CAD) means the CHWA permit decision by the State selecting a corrective measure alternative or alternatives to remediate environmental concerns at an OU. In selecting a corrective action decision, the State will consider health risks, environmental effects, and other pertinent factors.

s. Corrective Measures Study (CMS) means the RCRA/CHWA term for the study through which the owner/operator of a facility identifies and evaluates appropriate corrective measures and submits them to the regulatory agency. The CMS and the Feasibility Study are analogous documents and may be the same document.

t. Cost Savings means cost and productivity savings that result in excess funds being available after completion of particular activities within a fiscal year. Any such savings shall be calculated with reference to the RFETS Cost Baseline and RFETS's EM funding allocation, including any recisions. Cost savings do not include mere deferral of activities. Cost savings are evaluated periodically throughout the fiscal year.

u. Days means calendar days unless business days are specified. Any submittal or Written Statement of Dispute that, under the requirements of this Agreement, would be due on a Saturday, Sunday, State of Colorado, or federal holiday shall be due on the following business day.

v. Deactivation means the process of placing a building, portion of a building, structure, system, or component (as used in the rest of this paragraph, "building") in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance

program in a manner that is protective of workers, the public, and the environment. Actions during deactivation could include the removal of fuel, draining and/or de-energizing of nonessential systems, removal of stored radiological and hazardous materials and related actions. As the bridge between operations and decommissioning, based upon Decommissioning Operations Plans or the Decommissioning Program Plan, deactivation can accomplish operations-like activities such as final process runs, and also decontamination activities aimed at placing the building in a safe and stable condition. Deactivation does not include decontamination necessary for the dismantlement and demolition phase of decommissioning, i.e., removal of contamination remaining in fixed structures and equipment after deactivation. Deactivation does not include removal of contaminated systems, system components, or equipment except for the purpose of accountability of SNM and nuclear safety. It also does not include removal of contamination except as incidental to other deactivation or for the purposes of accountability of SNM and nuclear safety.

w. Decommissioning means, for those buildings, portions of buildings, structures, systems or components in which deactivation occurs, all activities that occur after the deactivation. It includes surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building, portion of a building, structure, system or component from service with adequate regard for the health and safety of workers and the public and protection of the environment. For those buildings, portions of buildings, structures, systems, or components in which no deactivation occurs, the term includes characterization as described in Attachment 9, surveillance, maintenance, decontamination and/or dismantlement for the purpose of retiring the building, portion of a building, structure, system or component from service with adequate regard for the health and safety of workers and the public and

protection of the environment. The ultimate goal of decommissioning is unrestricted release or, if unrestricted use is not feasible, restricted use of the buildings.

x. Decontamination means the removal or reduction of radioactive or hazardous contamination from facilities, equipment or soils by washing, heating, chemical or electrochemical action, mechanical cleaning or other techniques to achieve a cleaner stated objective or end condition.

y. Dismantlement means the demolition and removal of any building or structure or a part thereof during decommissioning.

z. DOE or U.S. DOE means the United States Department of Energy and/or any predecessor or successor agencies, their employees, and authorized representatives.

aa. Environmental Management or EM means the division within DOE responsible, inter alia, for cleanup and waste management at DOE's nuclear defense facilities, including the preparation and oversight of the budget for such activities and all successor divisions.

ab. EPA or U.S. EPA means the United States Environmental Protection Agency and any successor agencies, its employees, and authorized representatives.

ac. Feasibility Study (FS) means the CERCLA term for a study undertaken to develop and evaluate options for remedial action.

ad. Field modification means a modification to work triggered as a result of encountering unanticipated conditions in the field and which must be done immediately in the opinion of a Project Coordinator to avoid either an imminent threat to human health,

safety or the environment, or undue and unnecessary delay. Field modifications may also be made when opportunities are identified that allow the work to be conducted in a more cost-effective manner while not compromising safety or protection of public health or the environment.

ae. Fiscal Year (FY) denotes the current fiscal year. The federal fiscal year starts on October 1 and ends on September 30 of the following year. The federal fiscal year is designated by the calendar year in which it ends. For example, FY96 started on October 1, 1995 and ends on September 30, 1996. FY+1 means the federal budget year following the present FY. FY+2 means the federal budget year following FY+1. FY-1 means the federal budget year preceding the present FY.

af. Historical Release Report or HRR means that report required by CERCLA § 103(c) describing the known, suspected or likely releases of hazardous substances from RFETS. Originally compiled prior to the effective date of this Agreement, DOE updates the HRR annually.

ag. Implementation Guidance Document (IGD) means the guidance document that the Parties agree DOE will use in preparing work documents for activities regulated by the Agreement. The IGD contains information regarding the technologic approach to remedial/corrective actions and the activities regulated under this Agreement. The IGD provides guidance for what is to be included in specific decision documents, how to implement accelerated actions, RFI/RIs and CMS/FSs and the methodologies to assess human health and ecologic risk.

ah. Individual Hazardous Substance Site (IHSS) means specific locations where solid wastes, hazardous substances, pollutants, contaminants, hazardous wastes, or hazardous constituents may have been

disposed or released to the environment within the larger "Site" at any time, irrespective of whether the unit was intended for the management of these materials.

ai. Industrial Area means that area of RFETS designated on the map attached hereto as Attachment 2 and generally described as the roughly 350 acres at the geographic center of RFETS which is occupied by the 400 buildings, other structures, roads and utilities where the bulk of RFETS mission activities occurred between 1951 and 1989.

aj. Interim Measure (IM) means the RCRA/CHWA term for a short term action to respond to imminent threats, or other actions to abate or mitigate actual or potential releases of hazardous wastes or constituents.

ak. Interim Remedial Action (IRA) means the CERCLA term for an expedited response action performed in accordance with remedial action authorities to abate or mitigate an actual or potential threat to public health, welfare, or the environment from the release or threat of release of a hazardous substance at or from the Site.

al. Lead Regulatory Agency (LRA) is that regulatory agency (EPA or CDPHE) which is assigned approval responsibility with respect to actions under this Agreement at a particular Operable Unit pursuant to Part 8. In addition to its approval role, the LRA will function as the primary communication and correspondence point of contact. The LRA will coordinate technical reviews with the Support Regulatory Agency and consolidate comments, assuring technical and regulatory consistency, and assuring that all regulatory requirements are addressed.

am. Major modification means a modification to work that constitutes a significant departure from the approved decision document or the basis by which a

decision was previously made or approved, e.g., a change in a selected remedial technology, a technical impracticability determination, or a significant change to the performance of an SOP (e.g., a tank closure that results in closure in-place versus removal) that fundamentally alters the pre-approved procedure.

an. Minor modification means a modification that achieves a substantially equivalent level of protection of workers and the environment and does not constitute a significant departure from the approved decision document or the basis by which a decision was previously made or approved, but may alter techniques or procedures by which the work is completed, e.g., a change in an SOP that does not change the final result of the activity (i.e., alteration to a tank closure procedure that still results in a clean closure), or a change in operation or capacity of a treatment system that does not cause the system to exceed an effluent limit.

ao. Mixed Waste or Radioactive Mixed Waste means waste that contains both hazardous waste and radioactive materials classified as source, special nuclear, or by-product material subject to the AEA of 1954 (42 U.S.C 2011 et seq.)

ap. Natural Resource Trustee means a federal or State official who acts as a trustee on behalf of the public to oversee natural resources, and to recover Natural Resource Damages as appropriate. With respect to the Site, the following officials have been designated as Natural Resource Trustees:

-- Secretary of Energy (DOE)
-- Secretary of Interior (DOI)
-- Executive Director of the Colorado Department of Public Health and Environment (CDPHE)
-- Colorado Attorney General (AG)
-- The Deputy Director of the Colorado Department of Natural Resources (CDNR)

aq. No Action/No Further Action or NA/NFA means that remedial actions (or further remedial actions) are not presently warranted; however, NA/NFA decisions are subject to revisitation at the time of the CAD/ROD in accordance with Attachment 6, and are also subject to the CERCLA § 121(c) mandate for a five-year review of remedial actions that result in hazardous substances, pollutants, or contaminants remaining at the Site and paragraph 227 (Reservation of Rights).

ar. Operable Unit (OU) means a grouping of IHSSs into a single management unit as described in Attachment 1, and any additional groupings developed for the Site according to the procedures in Part 10 (Changes to Work) of this Agreement.

as. Proposed Action Memorandum or PAM means the decision document that describes an accelerated cleanup activity which DOE expects can be completed during a six-month period.

at. RCRA means the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et. seq., as amended by the Hazardous and Solid Waste Amendments of 1984, the Federal Facility Compliance Act of 1992, and implementing regulations.

au. RCRA Facilities Investigation (RFI) means the RCRA/CHWA term for an investigation conducted by the owner/operator of a facility to gather data sufficient to characterize the nature, extent, and rate of migration of contamination from releases identified at the facility. The RFI and the RI are analogous documents, and may be the same document.

av. Record of Decision (ROD) means the CERCLA decision by DOE and EPA, or by EPA alone in the event EPA disagrees with a remedy proposed by DOE, selecting the remedial action or actions to

remedy environmental and human health concerns at the Site.

aw. Regulatory Milestone or "milestone" means the date for which a particular event is established in accordance with this Agreement. Failure to meet the requirements of a regulatory milestone shall trigger liability for stipulated penalties.

ax. Remedial Activities means activities regulated under one or more of the following statutory authorities: RCRA or CHWA closure requirements for hazardous waste management units specified in this Agreement; RCRA or CHWA corrective action requirements; or CERCLA sections 104 or 106.

ay. Remedial Investigation (RI) means the CERCLA term for an investigation to collect data necessary to adequately characterize the Site, assess the risks to human health and the environment, and to support the development and evaluation of remedial alternatives.

az. Requirements of this Agreement means provisions of this Agreement that specify:

(1) actions DOE must perform to accomplish the activities regulated under this Agreement,
(2) dates by which it must perform such actions,
(3) standards which DOE must achieve through such actions; or
(4) the manner in which such actions must be reviewed, approved, performed and overseen to comply with this Agreement and applicable environmental laws.

Requirements of this Agreement also includes all federal and state applicable or relevant and appropriate requirements (ARARs) incorporated in any ROD or other decision document.

ba. Response Action means a "response action" under CERCLA or a corrective action or closure under RCRA or CHWA.

bb. Rocky Flats Environmental Technology Site ("RFETS") means the property owned by the United States Government, formerly known as the Rocky Flats Plant or Rocky Flats Site, and now known as the Rocky Flats Environmental Technology Site, including the Buffer Zone, as identified in the map in Attachment 2. RFETS does not include contaminated areas beyond the facility property boundary.

bc. Scoping or Scoping Phase means that period of time, from initial conceptual development of proposed work to DOE's formal request for approval to perform work on an activity, during which DOE consults with the regulators regarding the goals, methods, breadth and desired outcome for such activity.

bd. Site means all contaminated areas of the Rocky Flats Environmental Technology Site and all contiguous or nearby areas that are contaminated by hazardous substances, pollutants, or contaminants (as those terms are defined in section 101 of CERCLA) and/or any hazardous waste or hazardous constituents (as those terms are defined in section 1004 of RCRA or 6 CCR 1007-3, Part 260) from sources at RFETS.

be. Standard Operating Procedures means approved procedures applicable to a set of routine activities regulated under this Agreement that DOE may repeat without re-obtaining approval after the initial approval because of the substantially similar nature of the work to be done.

bf. State means the State of Colorado, its employees, and authorized representatives.

bg. Submittal means every document, report, schedule, deliverable, Work Description Document, or other

item to be submitted to EPA and CDPHE pursuant to this Agreement.

bh. Support Regulatory Agency (SRA) means the regulatory agency (EPA or CDPHE) that, for purposes of streamlining implementation of this Agreement, where applicable, shall defer exercise of its regulatory authority at one or more particular OUs until the completion of all planned accelerated actions. The SRA may, however, provide comments to the LRA regarding proposed documents and work.

bi. Treatment, Storage, or Disposal Unit (TSD Unit) means a hazardous waste treatment, storage, or disposal unit which is required to be permitted and/or closed pursuant to RCRA and CHWA requirements as determined in the baseline.

bj. TRU waste means waste that, without regard to source or form, is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100nCi/g at the time of assay.

bk. TRU-mixed waste means TRU waste mixed with hazardous waste.

bl. Work Description Documents means the detailed plans developed to implement work approved under this Agreement.

PART 6 LEGAL BASIS OF AGREEMENT

26. This Part constitutes a summary of the Findings of Facts and Conclusions of Law upon which CDPHE and EPA are proceeding with for purposes of this Agreement. The Findings of Fact and Conclusions of Law stated in this Agreement shall not be considered admissions by DOE. However, DOE agrees not to contest the Findings of Fact or Conclusions of Law stated in this Agreement related to EPA and State authority to enforce the requirements of this Agreement.

Subpart A. Findings of Fact

27. The U.S. acquired land and established the Rocky Flats Plant in 1951 by the U.S. Atomic Energy Commission (AEC) and began operation in 1952. The Plant's primary mission was the production of component parts for nuclear weapons. In February 1991, DOE introduced a plan to realign the Nation's nuclear weapons production program. As part of the realignment, the nuclear production functions of RFETS have been relocated to other sites (56 FR 55921). In addition, the Secretary of Energy announced in a February, 1992, Report to Congress that RFETS would no longer have a nuclear weapons mission. As a result of this realignment, RFETS' mission has changed.

28. RFETS consists of 6262 acres of federally owned land plus property beyond the boundaries that has become contaminated from sources within the boundaries of the federally-owned property. RFETS is located approximately 16 miles northwest of downtown Denver and is almost equidistant from the cities of Boulder, Golden, Westminster, and Arvada. In addition to these cities, several other communities are located near the Site, including Louisville, Lafayette, Superior, and Broomfield. Major plant structures are located within an area of 384 acres.

29. The 1994 population, within a 50-mile radius of Denver, consisted of approximately 2.2 million people. There are approximately 300,000 people living within 10 miles of RFETS. The surface water drainage from RFETS flows to the east and RFETS is located directly west of two drinking water reservoirs for the northern metropolitan area of Denver. The Great Western Reservoir services the City of Broomfield, and Standley Lake services the cities of Westminster, Thornton, and Northglenn. DOE has funded the construction of two major water management projects to isolate both the Great Western Reservoir and Standley Lake from any potential surface water contamination which might flow from RFETS. The Standley Lake Protection Project (i.e., Woman Creek Reservoir) was completed in early 1996 and will divert Woman Creek flows around Standley Lake.

The Great Western Reservoir Replacement Project will be completed in early 1997. When completed, it will provide an alternate water supply to the City of Broomfield, after which Great Western Reservoir should no longer be used as a drinking water source. Land uses adjacent to RFETS are agricultural to the west, agricultural with some industrial to the south, agricultural and very-low-density residential to the east, and agricultural and local government owned open space to the north.

30. Since establishment of the nuclear weapons production plant in 1951, materials defined as hazardous substances, pollutants, and contaminants by CERCLA, and materials defined as hazardous waste and hazardous constituents by RCRA and/or CHWA, have been produced and disposed or released at various locations at RFETS, including, but not limited to TSD Units. Certain hazardous substances, contaminants, pollutants, hazardous wastes, and hazardous constituents have been detected and remain in groundwater, sediments, surface water, and soils at the Site. Groundwater, soils, sediments, surface water, and air pathways provide routes for migration of hazardous substances, pollutants, contaminants, hazardous wastes, and hazardous constituents from RFETS into the environment.

31. The Management and Operating contractor prior to July 1975 was the Dow Chemical Company. Between July 1, 1975, and December 31, 1989, DOE contracted with Rockwell to perform management services and operate the Rocky Flats Plant in support of DOE's production activities. On January 1, 1990, the operating contractor became EG&G Rocky Flats, Inc. (EG&G). On July 1, 1995, EG&G ceased being the operating contractor, and Kaiser-Hill Co., LLC, became the first Integrating Management Contractor for RFETS.

32. Consistent with section 3010 of RCRA, 42 U.S.C. § 6930, DOE and Rockwell notified EPA of hazardous waste activity at the Rocky Flats Plant on or about August 18, 1980. In this notification, DOE and Rockwell identified themselves as a generator and as a treatment, storage, and/or disposal facility of hazardous waste at the Plant. DOE and Rockwell

also identified themselves as handling several hazardous wastes at the Plant.

33. The Site was proposed for inclusion on the National Priorities List (NPL) on October 15, 1984, pursuant to section 105 of CERCLA, 42 U.S.C. § 9605. The listing became final September 21, 1989.

34. On November 1, 1985, DOE and Rockwell filed RCRA and CHWA Part A and B permit applications with both EPA and CDPHE, identifying certain generated hazardous waste streams and waste management processes.

35. On December 4, 1985, CDPHE issued a Notice of Intent to deny DOE's Part B permit application on the grounds of incompleteness.

36. On July 31, 1986, DOE, CDPHE, and EPA entered into a Compliance Agreement (1986 Compliance Agreement) which defined roles and established milestones for major environmental operations and response action investigations for the Site. The 1986 Compliance Agreement established requirements for compliance with CERCLA. Through this action, the 1986 Compliance Agreement established a specific strategy which allowed for management of high priority past disposal areas and low priority areas at the Site.

37. Pursuant to the 1986 Compliance Agreement, DOE identified approximately 178 individual hazardous substance sites and RCRA/CHWA regulated closure sites.

38. The 1986 Compliance Agreement also established roles and requirements for compliance with RCRA and CHWA through compliance with interim requirements and submittal of required permit applications and closure plans. The major TSD units previously identified which may have impacted groundwater and soils include the Solar Evaporation Surface Impoundments, the Present Landfill, the West Spray Fields, and Outside Storage Areas.

39. Through the 27 specific tasks identified in the five schedules included in the 1986 Compliance Agreement, DOE and Rockwell identified over 2000 waste generation points.

40. Remedial Investigations have indicated that elevated levels of hazardous substances including uranium, plutonium, and other metals of concern have been released into the environment. In addition, contamination from chlorinated hydrocarbons has been detected in groundwater, soils, and sediment at the Site. These materials have toxic effects, including possible carcinogenic, mutagenic, and/or teratogenic effects on humans and other life forms.

41. The 1986 Compliance Agreement did not reflect the new requirements of SARA, including but not limited to the requirements governing federal facilities pursuant to section 120 of CERCLA. Since the 1986 Compliance Agreement was issued, EPA's and CDPHE's priorities for investigation of the Site have been clarified based on increased knowledge of the Site accrued from the ongoing investigation. The priorities placed greater emphasis on those OUs that, based on information available, were known to pose the greatest risk to humans and the environment through actual or potential contact with wastes or contaminated soils, air, or water. EPA and CDPHE established criteria reflecting priorities for addressing both human health and environmental issues. This necessitated the revision of the Agreement in 1991.

42. In 1989, FBI and EPA agents executed a search warrant to confirm alleged violations of federal environmental laws and regulations at the Rocky Flats Plant. Following the search, the Department of Justice indicted Rockwell, the management and operating contractor at the time of the search, for commission of environmental crimes at the Site. In 1992, Rockwell's plea of guilty for environmental crimes was accepted in district court, and Rockwell consequently agreed to pay a fine of $18.5 million.

43. In January 1991, DOE, EPA, and CDPHE signed the Rocky Flats Interagency Agreement (IAG). The IAG established a comprehensive plan for integrating environmental restoration

activities at the Site through CERCLA and RCRA corrective action. The IAG divided the remedial activities into 16 OUs, with each OU designated either a State lead, EPA lead, or joint lead. The IAG also established a schedule including 221 milestones to guide and enforce activities related to these 16 OUs.

44. During 1992 and into 1993, it became apparent that unrealized schedule and cost assumptions would make it impossible for DOE to fully comply with the IAG schedules. DOE began missing milestones in March 1993, and a series of milestones was projected to be missed. As such, in early 1994, DOE proposed an agreement to toll the stipulated penalties associated with the milestones missed and projected to be missed over a certain period. According to the terms of the Tolling Agreement, signed by the Parties on July 7, 1994, DOE paid cash penalties to EPA and the State, and conducted Supplemental Environmental Projects, for a total value of $2.8 million. The agreement tolled stipulated penalties until January 31, 1995. Subsequently, EPA and CDPHE agreed not to assess further stipulated penalties for violations occurring after January 31, 1995.

45. On September 30, 1991, CDPHE issued a CHWA permit for a number of hazardous waste management units at RFETS. Since then, the permit has been modified a number of times to add additional units.

46. On October 6, 1992, the Federal Facility Compliance Act of 1992, Pub. L. No. 102-386 ("the FFC Act"), became law. This legislation amended the waiver of sovereign immunity found in RCRA section 6001 to extend that waiver to include civil and administrative penalties for violations of federal and State hazardous waste laws. The Act made explicit that the waiver extends to administrative orders and to all aspects of hazardous waste management. The Act also mandated that DOE develop mixed waste treatment plans for each of its facilities subject to certain waiver and exemption provisions as specified in the act, for approval by the appropriate regulatory authority (in the case of Rocky Flats, CDPHE is the appropriate regulatory authority). Unless exempted or waived, the mixed waste treatment plan requirement applies

to those mixed wastes at RFETS which must be treated to meet RCRA section 3004(m). On October 3, 1995, DOE and CDPHE signed an Agreement and Order that complies with the FFC Act requirements.

47. In 1990, DOE informed the public and the regulators that an estimated 61 pounds of plutonium resided within the exhaust duct work of various production facilities at the Site.

48. In 1992, RFETS' mission changed from the production of nuclear weapons components to managing waste and materials, cleaning up and converting RFETS to beneficial use in a manner that is safe, environmentally and socially responsible, physically secure, and cost-effective.

49. A petition to list the Preble's Meadow Jumping Mouse (Zapus hudsonius preblei) as a threatened or endangered species was made to the U.S. Fish & Wildlife Service and the U.S. Department of the Interior by the Biodiversity Legal Foundation on August 9, 1994. The Preble's Meadow Jumping Mouse is thought to be one of the rarest small mammals in North America and is found in several of the riparian areas located within the RFETS Buffer Zone.

Subpart B. Conclusions of law.

50. Based on the Findings of Fact set forth in Subpart A (Findings of Fact) and the information available as of the date of execution of this Agreement, EPA and CDPHE have determined the following:

a. DOE is a "person" as defined in section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

b. The Site is a "facility" as defined in section 101(9) of CERCLA, 42 U.S.C- § 9601(9).

c. DOE is the "owner" of the Site within the meaning of section 101(20)(A) of CERCLA, 42 U.S.C. § 9601(20)(A).

d. Plutonium, carbon tetrachloride, trichloroethylene (TCE), tetrachloroethylene (PCE), and 1,1,1, trichloroethane (TCA), inter alia, are "hazardous substances" as defined by section 101(14) of CERCLA, 42 U.S.C. § 9601(14)(E). TCE, PCE and TCA are also hazardous constituents as defined by 6 CCR 1007-3, § 260.10.

e. Hazardous substances, including those described in the preceding paragraph, have been released into the environment at the Site as the term "release" is defined in section 101(22) of CERCLA, 42 U.S.C. section 9601(22).

f. The Site is subject to the requirements of CERCLA.

g. Pursuant to § 6001 of RCRA, 42 U.S.C. § 6961, DOE is subject to, and must comply with RCRA and CHWA.

h. DOE is a responsible Party subject to liability pursuant to 42 U.S.C. § 9607 of CERCLA, with respect to present and past releases at the Site.

i. RFETS includes certain hazardous waste treatment, storage, and disposal units authorized to operate under section 3005(e) of RCRA, 42 U.S.C. § 6925(e), and section 25-15-303(3) of CHWA, and is subject to the permit requirements of section 3005 of RCRA, and section 25-15-303 of CHWA.

j. Certain wastes and constituents at the Site are hazardous wastes or hazardous constituents as defined by section 1004(5) of RCRA, 42 U.S.C. § 6903(5), and 40 C.F.R., Part 261. There are also hazardous wastes or hazardous constituents at the Site within the meaning of section 25-15-101(9) of CHWA and 6 CCR 1007-3, Part 261.

k. The Site constitutes a facility within the meaning of section 120 of CERCLA, 42 U.S.C. § 9620, sections

3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925, and section 25-15-303 of CHWA.

l. DOE is the owner and co-operator, and Kaiser-Hill Co., LLC, Rocky Mountain Remediation Services, Safe Sites of Colorado, Inc., and DynCorp of Colorado are co-operators, of the RFETS hazardous waste management facility within the meaning of RCRA and CHWA.

m. There is, or has been, a release of hazardous waste and/or hazardous constituents into the environment from Solid Waste Management Units and disposal of hazardous waste within the meaning of section 3004(u) of RCRA, and CHWA.

n. The Submittals, actions, schedules, and other elements of work required or imposed by this Agreement are necessary to protect the public health, welfare, and the environment.

PART 7 CONSULTATION AND PROJECT COORDINATION

51. All Parties recognize that the successful implementation of this Agreement requires that each Party participate in the consultative process, as defined herein, in good faith. The Parties recognize that the consultative process represents a significant change from the manner in which the IAG was implemented. The Parties agree to utilize measures such as training programs, performance evaluation criteria, and Quality Action Teams to improve and ensure the success of the consultative process. The Parties also recognize that, as the Party responsible for project management, DOE bears a particular burden to initiate consultation with EPA and CDPHE to ensure the success of the consultative process.

52. "Consultation" and "the consultative process" mean the responsibility of one Party to meet and confer with another Party and any appropriate contractors in order to reach agreement among the Parties, to the extent possible, regarding a course of action. Consultation involves a

cooperative approach to problem solving at the staff level. Consultation includes the responsibility to raise any concerns or suggestions regarding the implementation of this Agreement as soon as the concern or suggestion is identified. Consultation means timely participation at the staff or management level, as appropriate, to reach consensus among the regulators and DOE so that there is a clear understanding of the actions or direction to be taken based upon the outcome of the consultative process.

53. Consultation, in the context of developing a written document, means that the Parties and any appropriate contractors shall meet to discuss the expectations regarding the document from its initial planning stages, through serial drafts, and up to the completion of the final document. Consultation also includes meeting informally to resolve disagreements, as appropriate, before invoking the dispute resolution process.

54. On March 31, 1995, the Parties all agreed to follow a set of "Principles for Effective Dialogue and Communication at Rocky Flats." These principles are attached hereto as Appendix 2.

55. Within 30 days of the effective date of this Agreement, the Parties shall jointly finalize a plan for training all appropriate staff for the effective implementation of this Agreement. The plan will include:

a. a description of how the training will be used to foster good faith constructive implementation of the RFCA;
b. time frames for conducting training;
c. different levels of training as appropriate to the job description;
d. use of RFETS onsite or third party professional instructors;
e. provisions for conducting needs assessments as necessary to determine the need for updating training materials and implementing new employee training; and

f. involvement of RFCA negotiators from each Party to participate in training.

56. Within ten days of the effective date of this Agreement, each Party shall provide a written description to the other Parties of its internal organization, including identification of key individuals, to accomplish project coordination as described in the following paragraph. Each Party shall designate one or more individuals to perform the functions of the Project Coordinator described in this Agreement. Each Party shall also specify one or more points of contact responsible for sending, receiving, and distributing correspondence.

57. All Parties acknowledge that the need for project coordination is essential for the successful implementation of this Agreement. Project coordination includes, but is not limited to:

a. internal consultation among individuals having subject matter expertise and/or regulatory/oversight responsibility;

b. in the event of internal disagreement about a proposal, internal resolution of the Party's position in a timely fashion;

c. clear identification of individuals with authority to:

(1) make decisions regarding disputes at the informal level;
(2) responsibility for decision-making (decision hierarchy);
(3) authority, consistent with its agency's directives regarding contractual matters, to modify, redirect, or approve changes to work being performed pursuant to this Agreement when necessary to complete a project or achieve project acceleration or cost savings; and

d. responsibility for ensuring that the consultative process is fully utilized, as necessary, to implement

this Agreement. This includes encouraging and cultivating as much informal discussion at the staff level as possible.

58. Consistent with Part 30 (Classified and Confidential Information), EPA and State Project Coordinators (and, except for paragraphs (e) and (f), their designees) shall have the authority to, among other things:

a. take samples, obtain duplicate, split samples or sub-samples of DOE samples,

b. ensure that work is performed properly and pursuant to EPA and State protocols, standards, regulations, and guidance, as well as pursuant to the Attachments and Work Description Documents incorporated into this Agreement;

c. observe all activities performed pursuant to this Agreement (including the taking of photographs consistent with security restrictions), and make such other reports on the progress of the work as the Project Coordinator deems appropriate;

d. review records, files, and documents relevant to this Agreement;

e. require field modifications to the work to be performed pursuant to this Agreement, or in techniques, procedures, or design utilized in carrying out this Agreement, which are necessary to the completion of the project ; and

f. set regulatory milestones in accordance with this Agreement.

59. Any Party may change its designated Project Coordinator by written notification to the other Parties.

60. Pursuant to this Agreement, in that portion of the Site in which each is the LRA, EPA and CDPHE have the authority to direct DOE to halt, conduct, or perform any tasks

required by this Agreement and any response action portions thereof when the LRA Project Coordinator determines that conditions may present an immediate risk to public health or welfare or the environment. If the LRA issues such verbal request, it shall follow up such request in writing within seven days.

PART 8 REGULATORY APPROACH

61. The following activities are regulated under this Agreement:

a. remedial activities for all IHSSs identified in Attachment 3;

b. decommissioning in accordance with this Agreement and the MOU between the Parties and the DNFSB found in Appendix 1;

c. compliance with 42 U.S.C. § 3969c(b)(5) requirements for mixed wastes generated by activities regulated under this Agreement that do not meet the treatment standards promulgated pursuant to 42 U.S.C. § 6924(m) and that are not proposed to be treated by treatment capacity developed pursuant to Compliance Order No. 95-10-03-01;

d. timely completion of the milestones specified in Attachment 8; and

e. closure of underground storage tanks in accordance with Attachment 13.

62. The Parties, at the time this Agreement becomes effective, have not agreed whether a substantial threat of release of plutonium exists such that this CERCLA section 120 agreement can contain enforceable plutonium-related milestones. The Parties agree that enforceable plutonium-related milestones may be included in this Agreement if at a later time it is determined that there is a substantial threat of release of plutonium, thereby giving rise to either CERCLA jurisdiction, or giving rise to the State's or EPA's jurisdiction under other state or federal environmental law. Notwithstanding the disagreement described above, the Parties have agreed upon a list of high-priority activities for plutonium and other special nuclear materials. DOE

commits to accomplish the activities on this list by the specified dates. This list is contained in Appendix 6.

63. While this Agreement regulates only those activities identified above, the Parties recognize that many activities occurring on the site are related, and that efficient use of tax dollars demands that management and regulation of all site activities be integrated. The Parties will ensure integrated management and regulation of activities both within and outside the scope of this Agreement, in part through the annual budget planning process described in Part 11. Decisions made in the course of the annual budget planning process, particularly those related to temporal prioritization of activities, may result in proposed changes to activities required by other enforceable permits, orders, or agreements that are not subject to regulation under this Agreement. CDPHE agrees to coordinate its decisions regarding these other permits, orders, etc., with decisions made in the budget planning process in Part 11.

64. In making regulatory decisions regarding activities regulated by this Agreement, CDPHE and EPA agree that each shall apply the statutory and regulatory requirements and respective agency guidance or policy positions in effect at the time a decision is made.

65. Activities that are not subject to regulation under this Agreement shall continue to be subject to any existing permits, orders, etc., including, but not limited to, the following:

a. CHWA permit No. CO7890010526
b. Hazardous Materials and Waste Management Division Settlement Agreement and Compliance Order on Consent No. 93-04-23-01 (mixed residues order)
c. Hazardous Materials and Waste Management Division Compliance Order No. 95-10-03-01 (Site Treatment Plan and Order pursuant to Federal Facility Compliance Act)
d. air quality operating permit (when issued)
e. NPDES permit No. CO-0001333

66. The Parties recognize that the activities regulated under this Agreement are subject to regulation under CERCLA, RCRA, and/or State environmental law, depending on the nature of the particular activity in question. Besides CHWA, the particular State environmental laws that may most frequently be applicable, depending on the activity, are the Colorado Air Pollution Prevention and Control Act, § 25-7-101 and the Colorado Petroleum Storage Tank Act, § 8-20.5-101. If Colorado receives delegation of the federal Clean Water Act program for RFETS, the Colorado Water Quality Control Act, § 25-8-101, C.R.S., may also be applicable to some cleanup actions. The activities that would be subject to the Colorado Petroleum Storage Tank Act are also subject to corrective action under CHWA. For those activities subject to both CHWA corrective action authority and the Petroleum Storage Tank Act, the State will defer taking action under the Petroleum Storage Tank Act and will instead rely on corrective action authority, consistent with the approach described in Attachment 13. The Parties have agreed to the regulatory approach described in this Part to minimize the potential for duplicative regulation, while assuring that the legal requirements of each statute are met. Nothing in this paragraph shall be construed as an ARARs determination.

67. To implement this regulatory approach, the Parties have divided the site into "the Industrial Area" and the "Buffer Zone," as shown in Attachment 2. CDPHE will be the Lead Regulatory Agency (LRA) for all activities regulated under this Agreement in the Industrial Area, and EPA will be the Lead Regulatory Agency for all activities regulated under this Agreement in the Buffer Zone, as well as offsite. Conversely, CDPHE will be the Support Regulatory Agency (SRA) for activities regulated under this Agreement in the Buffer Zone and offsite, and EPA will be the Support Regulatory Agency for activities regulated under this Agreement in the Industrial Area. Notwithstanding the foregoing, CDPHE shall be the LRA regarding any facility for the retrievable, monitored storage or disposal of remediation wastes, regardless of whether such a facility is located in the Industrial Area or the Buffer Zone identified in Attachment 2.

68. Prior to the final CAD/ROD, remedial work in the Buffer Zone and Offsite will be regulated by EPA as LRA pursuant to its CERCLA authority. Except as provided in the following three paragraphs, remedial work in the Industrial Area will be regulated by CDPHE as LRA pursuant to CHWA and other State environmental law that is applicable to the proposed activity, including, where appropriate, the Colorado Water Quality Control Act (if Colorado receives delegation of this program for RFETS), the Colorado Air Pollution Prevention and Control Act, and the Colorado Petroleum Storage Tank Act.

69. For purposes of implementing this Agreement, CDPHE shall carry out CERCLA authority to approve, disapprove, or modify and oversee portions of accelerated actions proposed for the Industrial Area that involve CERCLA hazardous substances that are not RCRA/CHWA hazardous constituents. CDPHE shall also carry out CERCLA authority to approve, disapprove, or modify and oversee proposed decommissioning activities in the Industrial Area. CDPHE shall also carry out authority to determine that activities or conditions in the Industrial Area constitute a release or substantial threat of release of hazardous substances to the environment. DOE may dispute those portions of State decisions regarding accelerated actions or decommissioning made under CERCLA as provided in Subpart 15B, except that if DOE appeals the SEC decision, such appeal shall be finally determined by the EPA Administrator instead of the Governor or his designee. DOE may dispute State determinations that conditions or activities in the Industrial Area constitute a release or substantial threat of release of hazardous substances to the environment in accordance with Subpart 15C, except that if DOE appeals the SEC decision, such appeal shall be finally determined by the EPA Administrator instead of the Governor or his designee. CDPHE agrees to follow EPA guidance in carrying out this CERCLA authority. This paragraph does not constitute any change to DOE's or EPA's status under CERCLA section 120(e) or Executive Order 12580, nor any limitation upon DOE's authority under the AEA.

70. Decommissioning activities shall be conducted as CERCLA removal actions, consistent with paragraph 95, the joint DOE-EPA May 22, 1995 policy regarding decommissioning of DOE facilities, and Attachment 9. Consistent with the approach described in this Part for regulating activities subject to this Agreement, CDPHE will regulate decommissioning activities in the Industrial Area under CERCLA, pursuant to the authority provided in the preceding paragraph. The Parties recognize that, at any given time, different parts of a given building may be in different stages of the operations/deactivation/decommissioning spectrum. The regulatory approach to decommissioning described in this paragraph shall be applied accordingly.

71. The Site will be phasing out activities that generate hazardous and mixed wastes, and has or will be terminating the use and operation of processes and equipment that, because such equipment is no longer being used, may contain solid wastes that may be hazardous or mixed wastes. The Parties agree that the removal and management of hazardous and mixed wastes that are contained within shut down equipment is regulated under the CHWA and is not regulated under this Agreement. However, such activities will be prioritized and coordinated with activities regulated under this Agreement, in part through the budget review process in Part 11. Some residual hazardous, mixed and solid wastes (e.g., scale, minimal amounts of sludges, and some liquids in piping) may remain in equipment after such initial removal of mixed, solid and hazardous waste inventories. The Parties agree that after such initial removal methods have been implemented, the final remediation of equipment containing residual hazardous or mixed wastes shall be regulated by CDPHE as a decommissioning activity. The residual wastes themselves shall be considered remediation wastes.

72. Except as provided in paragraphs 114 (Site-Wide documents) and 67, the LRA is responsible for primary review and sole approval of all decision documents and remedial work in the portion of the site where it is the LRA. The SRA may review draft documents and provide comments on them to

the LRA. However, the SRA shall defer exercising its own regulatory authority over activities regulated under this Agreement occurring in the portion of the site where it is the SRA until the LRA has rendered a final remedial decision, as described in paragraphs 84 and 85. The Parties intend that, when acting as the SRA, EPA and CDPHE shall not be involved in the day-to-day oversight of activities regulated under this Agreement.

73. The Parties intend that, in exercising its own statutory authority, the LRA shall make remedial/corrective action decisions that protect human health and the environment in accord with its statutory requirements. Thus, the LRA's decisions should allow the SRA to determine that no further remedial action beyond what has already been required by the LRA is necessary to protect human health and the environment in accord with the statutory requirements of the SRA. To this end, the LRA shall consider the comments of the SRA when making decisions, but shall guard against the mechanical imposition of additive or duplicative requirements at each step of the process. The Parties expect this approach to satisfy the substantive requirements of CERCLA and applicable State environmental laws.

74. To ensure consistency between decisions made by EPA and CDPHE, the Parties have agreed on a number of issues that are contained in the Vision, Appendices or Attachments to this Agreement as follows:

a. Assumptions regarding the future of RFETS, including land and water uses to be protected (the Preamble to this Agreement);
b. initial risk ranking of Individual Hazardous Substance Sites (the "Environmental Restoration Ranking," Attachment 4), and a process for updating and revising this ranking;
c. An Action Levels and Standards Framework, including action levels for contaminated soils and groundwater, and action levels and standards for surface water (Attachment 5);
d. criteria for deciding when no further remedial action is required (Attachment 6); and

e. Building and equipment disposition standards (Attachment 9).

75. The Action Levels and Standards Framework, Attachment 5, establishes action levels for ground water and soil as well as action levels and cleanup standards for surface water. Action levels and standards are requirements of this Agreement, but exceedance of an Action Level is not subject to penalties. The Framework action levels describe numeric levels of contamination in ground water, surface water, and soils which, when exceeded, trigger an evaluation, remedial action and/or management action. The Framework surface water standards are in-stream contaminant levels that, contingent on action by the Colorado Water Quality Control Commission to align stream classifications and standards with the Action Levels and Standards Framework, the regulators will require DOE to meet for activities undertaken prior to the final CAD/ROD, and which constitute the Parties' current joint recommendation for the CAD/ROD. (If the Colorado Water Quality Control Commission does not modify the existing stream standards, the Action Level Framework will be modified accordingly.) In-stream concentrations that exceed the Framework action levels at points of evaluation identified in the Framework will trigger the need for DOE to perform an evaluation and/or mitigating action. It is the Parties' intention to develop a Site-Wide Surface Water and Ground Water Management Plan that assures the Framework standards for radionuclides and non-radionuclides will not be exceeded at the point of compliance. Nevertheless, in-stream concentrations that exceed the Framework standards at points of compliance identified in the Framework will trigger mitigating action by DOE and penalty liability in accordance with paragraph 209. If mitigating action becomes necessary, DOE will obtain approval for such activities through the appropriate decision document and will incorporate such activities in the baseline.

76. The Parties intend DOE to develop, and the regulators to approve, decision documents that incorporate the Framework cleanup standards and action levels. While the Parties recognize that it would be premature for EPA to make an ARARs determination at this time, the Parties expect that the

Action Level Framework action levels and cleanup standards will inform EPA's ultimate decision. Similarly, the Parties recognize that the Framework cleanup standards are not State water quality standards, which only the Colorado Water Quality Control Commission has the authority to establish, although most are consistent with such standards. The Parties have agreed to involve affected downstream water users in developing the Surface Water and Ground Water Management Plan, and in coordinating petitions to the Colorado Water Quality Control Commission for changes to water quality standards, including for temporary modifications (see Appendix 5).

77. The Parties recognize that compliance with surface water cleanup standards at RFETS has implications associated with storm water management, pond operations, and public safety because of the need to maintain the integrity of the dams at RFETS. The Parties anticipate that, in the event of a dam breach or failure, there may be elevated levels of contaminants released into the surface waters at RFETS. The Parties, therefore, agree that management of the RFETS ponds to prevent a dam breach or failure may be necessary to assure dam safety.

78. The Parties have also agreed to develop a set of guidelines for reviewing documents and proposed work that will allow DOE to use the same basic approach regardless of whether a proposed document or proposed work relates to the Industrial Area or the Buffer Zone. These guidelines will be contained in the IGD, in Appendix 3. While these guidelines are not binding on DOE, CDPHE and EPA will use them in reviewing the adequacy of documents submitted and work proposed by DOE.

79. To expedite remedial work and maximize early risk reduction at the Site, the Parties intend to make extensive use of accelerated actions to remove, stabilize, and/or contain Individual Hazardous Substance Sites (IHSSs). Focussing on IHSSs rather than OUs will allow most remedial work to be reviewed and conducted through one of the accelerated review and approval processes described in Part 9, rather than the RI/FS process. The Parties have

agreed upon a risk ranking of the IHSSs, which is contained in Attachment 4. The ranking of IHSSs will be reviewed annually, and may be revised as appropriate. The Parties will consider the risk ranking and other factors to prioritize work for the baseline, in accordance with Part 11 (Budget and Work Planning).

80. The parties recognize that the facility described in this paragraph providing for retrievable, monitored storage of remediation wastes may be converted at a future date to a disposal facility. The parties also recognize that some remedial actions (e.g., in-place closures) may incorporate disposal as an initial proposal. The parties anticipate that consistent with the Preamble Objectives, retrievable, monitored storage of remediation wastes (except for TRU or TRU mixed wastes), with an option for conversion to disposal in-place in accordance with future decision-making, may be accomplished through use of a Corrective Action Management Unit (CAMU). The parties agree that the design criteria for the facility described in this paragraph shall be the same whether the facility is for the retrievable, monitored storage of remediation wastes or for the disposal of remediation wastes. Specifically, the facility described in this paragraph must ensure retrievability of wastes and protection of human health and the environment through a combination of requirements that include, but are not limited to: detection and monitoring/inspection requirements; operating and design requirements, including cap/liner system that meets the requirements as set forth in 6 CCR § 1007-3, Part 264, Subpart N; a ground water monitoring system; and requirements for responding to releases of wastes or constituents from the units. In addition, where necessary for protection of human health and environment, waste treatment will be required. However, the parties recognize that while storage and disposal facilities described in this paragraph will ensure retrievability of waste, the ease of retrievability may be greater for storage than for disposal. If DOE proposes a CAMU, it is the expectation of the parties, that if the application meets the appropriate substantive criteria, CDPHE will issue a CAMU designation for storage or disposal in a timely fashion, consistent with its general commitment to expedite regulatory approval of those

activities required to achieve the Preamble Objectives. If DOE proposes a storage CAMU, it may request that CDPHE make findings of fact as to whether the proposed facility also meets the requirements for a disposal CAMU that are in effect at the time of the request. CDPHE agrees to make such findings upon request. The parties also agree that a CAMU for remediation wastes and another RCRA/CHWA Subtitle C unit for storage or disposal of process wastes (except TRU and TRU mixed wastes) not regulated under this Agreement may be co-located. The review, approval and oversight of any unit for process wastes is also not regulated under this Agreement, but by CDPHE under the existing CHWA permit, as set forth in Appendix 8.

81. For purposes of this Agreement, wastes generated by activities regulated under this Agreement are remediation wastes. All such wastes, except for TRU and TRU mixed wastes, are suitable for storage or disposal in an approved on-site Corrective Action Management Unit, in accordance with the terms of any such approval.

82. Any proposal for a centralized facility for the retrievable, monitored storage or disposal of remediation wastes shall be subject to approval only by CDPHE as the LRA. Notwithstanding any other provision of this Agreement regarding the role of the SRA, EPA may participate fully in the review and consultative processes related to such a facility. In addition, EPA shall have the right to invoke the dispute resolution provisions of Part 15E regarding any CDPHE decision related to such a facility, within 15 days of the issuance of any such decision.

83. After all accelerated actions have been completed, CDPHE and EPA shall evaluate the Site conditions and render final remedial/corrective action decisions on an OU by OU basis. Notwithstanding the emphasis on accelerated actions and IHSS-based approach, the Parties recognize that the final remedial/corrective action decisions may require some additional work as specified in the CAD/ROD to ensure an adequate remedy.

84. Following implementation of all planned accelerated actions, for the Industrial Area OU, CDPHE will make a final corrective action decision for hazardous constituents pursuant to its CHWA regulatory authority, and DOE, consistent with its authority under CERCLA § 120, shall make a proposed remedial decision under CERCLA. CDPHE shall make a recommendation to EPA whether to concur with DOE's proposed remedial decision for radionuclides and other hazardous substances that are not hazardous constituents. EPA, consistent with CERCLA § 120, shall review DOE's proposed remedial decision and CDPHE's recommendation thereon, and shall then concur or non-concur with DOE's proposed remedy. EPA's decision regarding radionuclides and other hazardous substances that are not hazardous constituents shall incorporate CDPHE's recommendation, so long as EPA determines that the recommendation is consistent with CERCLA. EPA and DOE, consistent with CERCLA § 120, shall also review CDPHE's corrective action decision and shall issue a concurrence remedial action decision under CERCLA, so long as CDPHE's selected corrective action decision is consistent with CERCLA.

85. Following implementation of all planned accelerated actions, for those Ous in the Buffer Zone or offsite, EPA and DOE, consistent with CERCLA § 120, will make a final remedial decision pursuant to CERCLA. CDPHE shall review the final remedial decision and shall issue a concurrence corrective action decision under CHWA, so long as the final remedial action is consistent with CHWA and applicable State law.

PART 9 REVIEW AND APPROVAL OF DOCUMENTS AND WORK

Subpart A. General

86. The provisions of this Part establish the procedures that shall be used by the Parties to provide each other with appropriate notice, review, comment, and responses to comments regarding submitted documents. As of the effective date of this Agreement, all documents identified herein shall be prepared, distributed, reviewed, approved, or disapproved,

and subject to dispute resolution in accordance with this Part. The Parties shall implement the provisions of this Part in consultation with each other. Schedules for submittal of documents are contained in the baseline in Appendix 4. Nothing in this Part shall alter the review and approval process for CAD/RODs described in paragraphs 84 and 85.

87. DOE shall notify the designated Natural Resource Trustees, local elected officials, and the Citizens Advisory Board (CAB) of the issuance of any documents, the deadlines for submitting comments thereon, and a notation that comments submitted after the specified deadlines may not be considered. Upon request, DOE shall provide each Natural Resource Trustee and the CAB with a copy of any document. DOE shall place a copy of any document in the public reading rooms at the same time it forwards the document to CDPHE and EPA. If any of the State Natural Resource Trustees elect to comment on any documents, CDPHE will forward their comments to DOE and EPA. Federal Natural Resource Trustees and the CAB will forward their comments directly to DOE, EPA and CDPHE.

88. Except as provided in paragraph 114, the LRA shall be responsible for review and approval of all decision documents received pursuant to this Agreement. When drafting comments, the LRA shall consider the Parties' expectation that both regulators should endorse the same final remedial decision. The LRA shall rely on the IGD as the primary guidance in evaluating the adequacy of submitted documents.

89. The appropriate Project Coordinators from each Party shall meet monthly, except as otherwise agreed, to review and jointly evaluate the progress of work being performed on the documents and implementation thereof. The appropriate representatives shall discuss a document in an effort to reach a common understanding of expected content and purpose prior to preparing the draft document, during the LRA's review of the submitted document, and during DOE's preparation of the final document. During such discussions, the LRA and DOE Project Coordinators will agree on the estimated review time for the document, which the Parties

agree to minimize, consistent with the LRA's statutory responsibilities. If the Parties cannot agree on a review time, the LRA shall select the review time consistent with the standard described in the preceding sentence. In addition, staff level discussions shall be conducted throughout the document preparation and review process to avoid major revisions to draft documents.

90. Representatives of each Party shall make themselves readily available during the review and comment period for consultation and comments on documents. Oral comments made during such discussions need not be the subject of a written response by the DOE at the close of the review and comment period.

91. When submittal of a document is defined as a regulatory milestone, compliance with the regulatory milestone is defined as DOE's submittal, by the date specified in Attachment 8, of a document that is approved by the appropriate LRA. Documents disapproved shall not be defined as compliant with the regulatory milestones. If the draft document is disapproved and subsequently revised and approved prior to the defined regulatory milestone, then this shall be deemed compliant with the regulatory milestone.

92. Comments which significantly expand previously approved workscope may be considered good cause for regulatory milestone modifications. In that case, DOE shall formally notify the LRA within 30 days of receipt of comments and request appropriate changes to the affected milestones.

93. Documents subject to this Part and listed in paragraphs 113 and 114 shall be designated as decision documents. Such documents may or may not have an associated regulatory milestone. DOE may not invoke dispute resolution regarding comments submitted on draft decision documents. It may only invoke dispute resolution for decisions to disapprove the proposed final decision documents. All other non-decision documents, such as those listed in paragraph 116, are not subject to the review and approval provisions of this Part. Non-decision documents include input or feeder documents to a decision document, documents that act as

discrete portions of decision documents, and certain program-wide support and guidance documents. These documents do not have regulatory milestones associated with them; however, DOE recognizes that their submittal in a timely manner facilitates meeting regulatory milestones and ensuring expeditious cleanup of the Site. Through the consultative process, DOE will keep the regulators informed regarding the content of these documents and will endeavor to incorporate all of the comments made by the regulators to avoid subsequent conflict, disapprovals or the issuance of stop work orders. DOE's failure to resolve the regulator's concerns, as expressed in its comments on a non-decision document may result in subsequent disapproval of a related decision document.

94. DOE shall complete and transmit documents listed in this Part in accordance with the baseline in Appendix 4. Following receipt of comments on the draft document, DOE shall complete and transmit the proposed final documents in accordance with the baseline.

Subpart B. Document and Work Review and Approval Processes

95. All remedial work at the Site, including all non-time critical removal actions, shall be conducted either as an accelerated action for one or more IHSSs, a closure plan, or pursuant to a CAD/ROD for an OU. All remedial work shall be implemented considering the factors described in paragraph 138 (Budget and Work Planning). DOE shall not commence any activity subject to approval under this Part unless it has been approved by CDPHE or EPA or, in the case of a disapproval, until the dispute resolution process has been exhausted. DOE recognizes that if it proceeds with work that has been disapproved, it may be subjected to enforcement action by CDPHE or EPA. There are three types of accelerated actions:

a. Interim Measure/Interim Remedial Action (IM/IRA)
b. Proposed Action Memorandum (PAM)
c. Standard Operating Procedures (SOP)

IM/IRAs apply to interim remedial activities that are estimated to take more than six months from the time of commencement of physical remedial work to complete. PAMs apply to remedial activities that are estimated to take less than six months from time of commencement of physical remedial work to complete. SOPs apply to remedial activities that are routine and substantially similar in nature, for which standardized procedures can be developed. SOPs may incorporate "Alternative Operating Scenarios" as provided in the Air Quality Control Commission's regulations to implement CAPPCA requirements in lieu of individual construction permits from the APCD. Closure Plans apply to regulated hazardous waste management units. CAD/RODs apply to the final corrective/remedial decision made for an OU following implementation of all accelerated actions.

96. While hazardous waste management units not regulated under this Agreement must be closed under a closure plan, closure of permitted or interim status units that are regulated under this Agreement may be done either through a separate closure plan or through an accelerated action. Closure Plans shall follow the review process described in 6 CCR 1007-3, Part 100. The requirements for closure of interim status units that are regulated under this Agreement are set forth in Attachment 10 (closure activities). Compliance with applicable CHWA closure requirements when the closure is performed as an accelerated action, including any requirements for post-closure permits, will be addressed in the PAM, SOP or IM/IRA.

97. IM/IRAs, CAD/RODs, and PAMs approved prior to the effective date of this Agreement shall be implemented as requirements of this Agreement. Any ROD/CADs, IM/IRAs, or SOPs that have not already been approved prior to the effective date of this Agreement shall follow the document review process described in paragraphs 107 or 108 and 109-110, except as provided in paragraph 102. PAMs that have not already been approved prior to the effective date of this Agreement shall follow either the process set out in paragraph 102, or the process set out in paragraph 105, as appropriate. Accelerated actions, including those that are

done in lieu of closure plans, do not require separate CHWA permit modifications or permits. Instead, substantive CHWA requirements that are applicable to the proposed action, including any requirements for post-closure permits, will be addressed in the PAM, IM/IRA, or SOP.

98. If an accelerated action in the Industrial Area would trigger the requirement for a permit described in paragraph 102.a or 102.b, CDPHE commits that the procedural requirements for obtaining such permit shall not result in any additional time for approval of that activity than would otherwise be required under this Agreement.

99. To further streamline the work approval process, CDPHE agrees that DOE may apply for a single construction permit that could cover multiple activities which would otherwise require air construction permits. Such a permit application could incorporate "Alternative Operating Scenarios" in accord with state air quality regulations. Such permit application may, but need not, be made in conjunction with a specific proposed accelerated action. In such an application, DOE may develop a "worst case scenario" that projects emissions levels, numbers and types of pollutants, volumes of soil to be excavated that would constitute an upper bound defining the largest excavation project anticipated, and equipment needs. Once approved, DOE would not need additional air quality construction permits for subsequent activities that fall within the limits established in the alternative operating scenario.

100. The Parties recognize that, in the Industrial Area OU, activities regulated under this Agreement will require the coordination of activities between a number of State environmental agencies or departments, whether or not separate permits are required. CDPHE agrees absent circumstances beyond its control, to provide adequate coordination of, and timely response from, its various agencies and other State departments. CDPHE also agrees to provide DOE with guidance so that DOE can submit a single draft document that meets both the information requirements of applicable permits and the information needed for CDPHE to make a determination under CHWA.

All State-imposed conditions on the proposed action shall be contained in the PAM, IM/IRA, consolidated review process decision, or CAD/ROD.

101. CDPHE shall determine in the scoping phase of any proposed action in the Industrial Area whether a State permit will likely be required, consistent with the following two paragraphs. If, during the scoping phase of a proposed action, DOE provides CDPHE with adequate information to determine that a permit is required, but CDPHE fails to identify the need for a State permit until after the scoping phase of a proposed action, the appropriate review process described in one of the following two paragraphs shall still be followed. However, DOE shall be entitled to an extension of any affected regulatory milestone, and CDPHE shall, absent circumstances beyond its control, mitigate any delay from the failure to identify the need for the permit. If CDPHE fails to identify the need for a permit during the scoping phase due to DOE's failure to provide the necessary information, the appropriate review process described in one of the following two paragraphs shall still be followed. CDPHE shall still use its best efforts to mitigate any delay from the failure to identify the need for a permit, but DOE shall not be entitled to an automatic extension of any affected regulatory milestone.

102. If, during the scoping phase for any accelerated action proposed to be implemented in the Industrial Area, CDPHE determines that the proposed action will likely require either:

a. a minor source construction permit from the Air Pollution Control Division (APCD) or a minor modification to a construction permit from the APCD that does not trigger any major source requirements under the Prevention of Significant Deterioration program of Part C of the Federal Clean Air Act (see § 25-7-201, C.R.S.) or major non-attainment permit requirements under Part D of the Federal Clean Air Act (see § 25-7-301, C.R.S.); or modification of any operating permit from the APCD that is not a significant permit modification under Regulation 3 of

the Colorado Air Quality Control Commission; and/or

b. following delegation of the federal program to the State for RFETS, a discharge permit from the Water Quality Control Division,

the consolidated review process described in the following paragraph shall be used.

103. Following scoping, during which CDPHE shall work with DOE to ensure the adequacy and completeness of DOE's submittal of the relevant draft permit application/document (e.g., draft IM/IRA, PAM, or SOP), CDPHE shall issue a draft permit decision for public comment. The public comment period for the permit decision shall run for the same period of time as the public comment period for the decision document, and the two documents shall be packaged together. Following the public comment period, CDPHE shall issue a decision on the accelerated action and the necessary State environmental permits, if any. This decision shall be subject to dispute resolution by DOE under Part 15B. The final resolution of any dispute shall constitute approval of the action under the CHWA and of the relevant permit decision under the CAPPCA, and shall be considered final agency action for purposes of appeal.

104. If, during the scoping phase for any accelerated action proposed to be implemented in the Industrial Area, CDPHE determines that the proposed action will likely require a permit or modification to a permit from the APCD other than those described in the preceding subparagraph 102.a, DOE shall follow the appropriate substantive and procedural requirements of the Colorado Air Quality Control Commission in complying with the CAPPCA.

105. Remedial activities that are planned to be accomplished in less than six months may be approved under the PAM process described in this paragraph, unless CDPHE determines that an environmental permit would be required, as described above. Such remedial activities may be identified through the annual budget and work planning

process, or they may be identified during the fiscal year. Upon agreement of the LRA that such an action is necessary, DOE shall prepare a draft PAM in consultation with the LRA. The draft PAM shall contain a brief summary of data for the site; a description of the proposed action; an explanation of how waste management considerations will be addressed; an explanation of how the proposed action relates to any long-term remedial action objectives; proposed performance standards; all ARARs and action levels related to the proposed action; and an implementation schedule and completion date for the proposed action. DOE will issue the draft PAM to the LRA for its review and simultaneously make it available for a thirty-day public comment period. Within two weeks of the close of the public comment period, DOE shall incorporate public comments, as appropriate, prepare a Responsiveness Summary, and submit both the revised PAM and Responsiveness Summary to the LRA. The LRA shall have seven calendar days to approve or disapprove the revised PAM and Responsiveness Summary, but it may extend this period by an additional seven calendar days, based on good cause communicated to DOE in a timely fashion. If the LRA disapproves the revised PAM, it shall clearly state the changes that DOE must make to receive approval. DOE shall then have 14 days to incorporate the LRA's changes or invoke dispute resolution. If the LRA does not approve or disapprove the revised PAM within seven days (or 14 days, if it extends the time for a decision), the revised PAM is deemed approved as submitted.

106. DOE shall submit appropriate Air Pollution Emission Notices as part of the draft decision document for all work, regardless of whether it is to be performed in the Industrial Area or the Buffer Zone. This information shall be available for inspection at RFETS.

107. In responding to draft decision documents that are not Site-Wide documents, the LRA shall obtain comments and, where appropriate, consult with the SRA. Following such consultation with the SRA (if any) the LRA shall submit a single set of consistent, consolidated comments to DOE on or before the close of the comment period. The LRA agrees

to use its best efforts to provide a comprehensive set of comments on draft documents to DOE so as to avoid, to the extent possible, raising issues of first impression at a later stage. Comments shall be provided with adequate specificity so that DOE may respond to the comments and, if appropriate, make changes to draft documents. If the LRA takes more time than allotted during scoping to respond to a draft decision document, such a delay may constitute good cause for regulatory milestone modifications.

108. For Site-Wide documents, EPA and CDPHE shall attempt to reach concurrence and provide DOE with a single set of consistent, consolidated comments to DOE on or before the close of the comment period. EPA and CDPHE agree to use their best efforts to provide a comprehensive set of comments on draft documents to DOE so as to avoid, to the extent possible, raising issues of first impression at a later stage. Comments shall be provided with adequate specificity so that DOE may respond to the comments and, if appropriate, make changes to draft documents. If the regulators take more time than allotted during scoping to respond to a draft decision document, such delay may constitute good cause for regulatory milestone modifications.

109. Following the close of the review and comment period for a draft decision document (including any public comment), DOE shall prepare a proposed final decision document. In so doing, it shall give full consideration to all written comments submitted by the LRA (or, in the case of Site-Wide documents, EPA and CDPHE). DOE shall seek clarification of the intent and purpose of any comment from the LRA (or, in the case of Site-Wide documents, EPA and CDPHE) that DOE finds is unclear before preparing the proposed final decision document.

110. The LRA (or, in the case of Site-Wide documents, EPA and CDPHE) shall review the proposed final decision document and shall approve or disapprove it. If the proposed final decision document is approved, that document shall become final. If the LRA disapproves a document, it must clearly explain the necessary modifications or reasons for disapproval and delineate the actions that must be taken for

approval. If the proposed final decision document is disapproved, DOE shall revise and re-submit those portions of the document that require revision in compliance with the notice of disapproval, unless DOE invokes dispute resolution pursuant to Subpart 15B or 15E, as appropriate, within the period allowed for re-submittal. When dispute resolution is invoked on a proposed final document, work may be stopped in accordance with the procedures set forth in Part 18 (Work Stoppage).

111. The following documents have already been approved. Complete references to these documents are contained in Attachment 12. These documents are located in the public repositories specified in Attachment 7, and are incorporated by reference into this Agreement:

a. Quality Assurance Plan
b. Historical Release Report (HRR)
c. Existing ER Standard Operating Procedures
d. Community Relations Plan (CRP)
e. Treatability Study Workplan
f. Health and Safety Plan
g. Plan for Prevention of Contaminant Dispersion
h. Background Geochemical Characterization Report
i. Treatability Study Plan
j. previously approved PAMs, IM/IRAs, and CAD/RODs listed in Attachment 12

112. The following documents have been agreed to by the Parties and are attachments to this Agreement:

a. OU Consolidation Plan
b. Environmental Restoration Ranking
c. Action Levels and Standards Framework
d. Building and Equipment Disposition Standards
e. Criteria for No Action/No Further Action Decisions
f. RCRA Closure for Interim Status Units
g. UST Closure letter agreement

113. The following decision documents are subject to the review and approval of the appropriate LRA as provided in this

Part. DOE shall complete and transmit these documents as described in the baseline, or in accordance with a milestone.

a. RFI/RI Work Description Documents
b. RFI/RI Reports
c. CMS/FS Reports
d. IM/IRA Decision Documents
e. Closure Plans
f. Corrective/Remedial Design Plans
g. Corrective/Remedial Design Work Description Documents
h. Sampling and Analysis Plans
i. IM/IRA Implementation Documents
j. Closeout Reports
k. PAMs
l. Decommissioning Operations Plans for major facilities, such as Buildings 371, 771, 776/777, 707 and 991
m. Future SOPs for activities regulated under this Agreement that are likely to occur in only one OU
n. Treatability study reports for activities related to one OU

114. The following Site-Wide documents are subject to the review and approval of CDPHE and EPA. DOE shall complete and transmit the following Site-Wide documents as described in the baseline, or in accordance with a milestone:

a. the IGD and any updates thereto
b. CADs/RODs
c. Draft Permit Modifications/Proposed Plans
d. Updates to the CRP
e. Future Standard Operating Procedures for activities covered by this Agreement that are likely to occur in more than one OU
f. Treatability Study Reports for activities that are related to more than one OU
g. Integrated Monitoring Plan
h. Updates to the IHSS risk ranking
i. Sitewide Surface Water and Ground Water Management Plan

j. decision documents proposing treatment for remediation wastes from both the Industrial Area and the Buffer Zone
k. Decommissioning Program Plan
l. annual updates to the HRR

115. DOE shall complete and transmit the following non-decision documents in accordance with the baseline for the LRA's (or, in the case of Site-Wide documents, both EPA's and CDPHE's) review and comment. Technical memoranda and other non-decision documents that modify previously approved work shall be approved through the appropriate modification process in Part 10.

a. Baseline Risk Assessment Technical Memoranda
b. CMS/FS Technical Memoranda
c. RFI/RI Work Description Document Technical Memoranda
d. Background Study Plan for Surface Soils
e. Other support documents for any activity covered by this Agreement as deemed appropriate by the Parties
f. progress reports described in Part 21
g. Background Characterization Reports
h. Reconnaissance Level Characterization Reports

116. The following draft documents shall be subject to public comment:

a. Draft Permit Modifications/Proposed Plans
b. PAMs
c. IM/IRAs
d. Closure Plans
e. SOPs

The length of the public comment period shall be defined during scoping. Other documents listed in paragraphs 113 and 114 that are approved through the PAM or IM/IRA process, including, for example, SOPs, Decommissioning Operations Plans, and the Decommissioning Program Plan, shall go to public comment through the PAM or IM/IRA process.

117. DOE shall update quarterly the list of all approved documents, other approvals, and final resolutions of dispute contained in Attachment 12, and shall provide this list to the other Parties and place a copy in each of the Repositories.

PART 10 CHANGES TO WORK

118. The Parties intend that, using the consultative process, they can substantially streamline the processes for modifying or revising approved work or decision documents that may be necessary arising from planned or unforeseen circumstances during the course of implementation. This Part establishes change control procedures for SOPs, PAMs, IM/IRAs and CAD/RODs. The goal of the change control process is to keep previously approved elements of work at RFETS moving towards a timely, cost-effective completion while satisfying the underlying objective for which original approval was granted. For work being done under other types of decision documents, the Project Coordinators shall establish appropriate time frames and procedures consistent with the nature of the processes described below.

119. DOE shall evaluate baseline and regulatory milestone impacts associated with approved changes. If DOE finds the change will affect regulatory milestones, DOE shall identify proposed modifications to the regulatory milestones pursuant to Part 12 (Changes to Regulatory Milestones) and notify the other Parties of modifications to the baseline as provided below. If DOE finds that the change to work does not impact regulatory milestones, DOE shall, after consultation with the other Parties, modify the baseline. Upon agreement or the resolution of a dispute that a change to work is necessary, then DOE shall amend the relevant Work Description Document(s) to reflect the change.

120. If DOE desires to make a major modification to work being done pursuant to an SOP, DOE must go through the review and approval process for modifications to either a PAM or an IM/IRA, whichever is appropriate. To make a minor modification to work being done under an SOP, DOE's Project Coordinator shall submit written notice to the LRA's Project Coordinator, along with appropriate justification, not

less than seven days prior to when DOE desires to effect the modification. While there is no formal requirement that the LRA approve minor modifications, the LRA's Project Coordinator may issue a Stop Work Order within seven days of receipt of the notification of any such modification.

121. DOE must initiate a request to make a major modification to work being done pursuant to a PAM in writing, with adequate justification, to the LRA Project Coordinator not less than 14 days prior to when DOE desires to execute or begin to execute the planned changes. The LRA's Project Coordinator shall review the request and either approve, or deny with an explanation, within seven days after receipt of the request. To make a minor modification to work being done pursuant to a PAM, DOE shall submit written notice to the LRA, along with appropriate justification, not less than seven days prior to when DOE desires to effect the modification. While there is no formal requirement that the LRA approve minor modifications to a PAM, the LRA may issue a Stop Work Order within seven days of receipt of the notification of any such modification.

122. To initiate a major modification to work being done pursuant to an IM/IRA, DOE shall submit a request in writing with appropriate justification not less than 30 days prior to when DOE desires to execute or begin to execute the proposed changes. The LRA shall review such request and approve, or deny with explanation, the request in writing within 21 days after its receipt. To initiate a minor modification to work being done pursuant to an IM/IRA, DOE shall submit a written request to the LRA with appropriate justification not less than 21 days prior to when DOE desires to execute or begin to execute the proposed changes. The LRA shall review such request and approve or deny with an explanation the request in writing within seven days after its receipt.

123. To make a major modification to work being done pursuant to a CAD/ROD, DOE shall submit a written request, accompanied by appropriate justification, to the LRA not less than 90 days prior to when DOE desires to execute or begin to execute the changes. Concurrent with this submittal, DOE shall notice an opportunity for a 30 day public

comment period regarding the modification. The LRA shall review such request and the public comments and approve the modification, or deny it with a written explanation, within 30 days after the close of the public comment period.

124. If DOE desires to modify an SOP, it shall proceed through the document review process in paragraphs 107 or 108 and 109-110.

125. If DOE's Project Coordinator identifies the need to make a field modification for work being done under any type of decision document, she or he shall give verbal notice to the LRA's Project Coordinator within one day after making the modification, followed by a written justification within no more than seven days. While there is no formal requirement that the LRA approve field modifications, the LRA may discuss its concerns with DOE. If the agencies fail to reach agreement, the LRA's Project Coordinator may issue a Stop Work Order against further action on the modified work within seven days of receipt of the notification of any such modification based on a finding that the modification is resulting or will result in work being done that is (a) inadequate or defective, (b) likely to have a substantial adverse impact on other response action selection or implementation processes or (c) not within the parameters of a field modification, but rather is a minor or major modification.

126. DOE will be the primary Party responsible for initiating the change process and providing sufficient time and documentation to demonstrate to the LRA's reasonable satisfaction that the proposed modification(s) or revision(s) are necessary to accomplish the activity. The LRA will be responsible for internal consultation and for collecting, consolidating, and reconciling comments within the allotted time frames. During the time allotted for the LRA to respond to a proposed modification that requires approval, the DOE and LRA Project Coordinators should meet to resolve any potential barriers to approval. If agreement is reached, DOE will submit a revised proposed modification and will implement the same in accordance with the Agreement. If the LRA denies the modification, or approves

it only with conditions unacceptable to DOE, DOE may invoke dispute resolution.

127. As described above, the Parties intend to allow an accelerated change process for minor modifications, particularly given that, while DOE must always give the LRA advance notification of a minor modification, depending on the type of work or decision document being modified, advance approval from the LRA may not be required. If the LRA disputes a minor modification, the LRA shall discuss its concerns with DOE, but if no accommodation is reached, the LRA may issue a Stop Work Order against further action on the modification based on a finding that the modification is resulting or will result in work being done that is (a) inadequate or defective, (b) likely to have a substantial adverse impact on other response action selection or implementation processes, or (c) not within the parameters of a minor modification, but instead constitutes a major modification.

PART 11 BUDGET AND WORK PLANNING

Subpart A. Budget Planning and Milestone Setting

128. DOE shall use its best efforts and take all necessary steps to obtain timely funding to meet its obligations under this Agreement and shall include sufficient funds in its budget request to the President, as specified in Executive Order 12088, to support the activities to be conducted under the Agreement. DOE's compliance with the provisions of this Part shall constitute compliance with the above standard.

129. It is the intent of the Parties that the EM actions governed by this Agreement shall reflect the Parties' commitment to proactively pursue and implement productivity gains and cost savings and shall consider, but not be strictly driven by the budget targets provided by OMB or DOE-HQ. Specifically, the cost of projects governed by this Agreement, along with the overall constraints of the federal budget process, timing of financial decisions, and allocation of funds, shall be considered by all Parties when establishing the scope and schedule of EM projects. To the extent that it is consistent

with their statutory obligations, EPA and CDPHE intend to establish requirements for EM projects that can be accomplished within the EM funds appropriated to RFETS.

130. In accordance with the provisions of this Part, the Parties agree that DOE, in consultation with EPA and CDPHE, will maintain and revise the baselines of site activities; and EPA and CDPHE, in consultation with DOE, will set the regulatory milestones including completion dates for specific activities. This division of responsibility is intended to give DOE significant flexibility in managing EM projects to meet regulatory milestones. Consequently, changes within the baseline shall not necessarily constitute good cause for changes to regulatory milestone dates for completion of specific activities.

131. DOE shall perform activities on the baseline set forth in Appendix 4 and according to the Work Description Document(s) developed thereunder.

132. The baseline shall be depicted in sufficient detail to identify major planning targets and any regulatory milestones. In addition, a listing describing each of the regulatory milestones depicted on the baseline shall be provided. The level of detail to be provided will be equivalent to the information provided in the Cost Account Documents.

133. The time frames and terms specified in this Part are those in use beginning in the fall of 1995. If DOE's budget schedule or process changes, these paragraphs may be modified accordingly.

134. The Parties shall review the previously established baseline and regulatory milestones annually, and shall either re-establish or revise them.

135. DOE shall, by August 1, 1996, develop an integrated Site-Wide baseline that depicts activities necessary to achieve the end of the Intermediate Site Condition. The integrated Site-Wide baseline, from which milestones are selected, will be based on current assumptions, which may change as additional technical information is acquired, and as the

Parties gain experience in implementing the RFCA. The integrated Site-Wide baseline will be updated at least annually.

136. EPA and CDPHE shall establish no more than 12 milestones per fiscal year. Milestones shall be designed to:

a. provide accountability for key commitments;
b. ensure adequate progress at the Site;
c. provide adequate scope drivers; and
d. facilitate budget planning and execution.

137. Following the submittal of the integrated Site-Wide baseline described in paragraph 135, EPA and CDPHE may establish a few key outyear milestones (i.e., beyond FY+2) to provide long-term drivers for achieving the end of the Intermediate Site Condition. This means that in the annual budget and work planning process, the Parties shall evaluate the impact of changes to near-term (i.e., FY through FY+2) milestones on DOE's ability to meet the outyear milestones. However, the Parties recognize that good cause may exist for extending a near-term milestone, even though it may impact DOE's ability to meet an outyear milestone. Outyear milestones shall be established consistent with the framework provided in this Part. The Parties recognize that outyear milestones are inherently subject to greater uncertainty than near-term milestones. However, the Parties also recognize that the limitation on the number of annual milestones, and the fact that DOE controls the baseline, together provide DOE with substantial management flexibility in achieving both near-term and outyear milestones. Any extension to near-term milestones will not necessarily provide good cause to extend an outyear milestone. Outyear milestones shall not be extended unless DOE demonstrates that assumptions underlying the establishment of the outyear milestones have changed or cannot be met, such that achieving the outyear milestone is no longer feasible. Determinations regarding outyear milestones are subject to the provisions of paragraph 194.

138. The factors to be considered in establishing, reviewing and revising the baseline and regulatory milestones include, but are not limited to the following:

a. the Vision;
b. the Preamble;
c. the logical progression toward cleanup;
d. the reduction of short-term and long-term human health and environmental risk;
e. existing requirements of this Agreement;
f. the life-cycle cost of individual projects;
g. logistic, engineering, technical, and health and safety concerns related to proposed projects;
h. any impacts on related projects, including the costs and scheduling of such projects;
i. detrimental impacts of significant fluctuations in resource requirements from year to year;
j. DOE's management capabilities;
k. new or emerging technologies;
l. CDPHE's and EPA's oversight capabilities;
m. changing priorities as a result of new information;
n. the Surface Water and Ground Water Management Plan;
o. views expressed by local elected officials;
p. the views expressed by the public;
q. any consensus views expressed by the Rocky Flats Citizens Advisory Board;
r. the Congressional budget appropriation, OMB apportionment, and DOE Rocky Flats EM allotment for FY, as well as the Rocky Flats EM allotment of the President's Budget for FY+1 and associated outyear funding targets;
s. the completeness and accuracy of the scope, schedule, and costs for the tentative FY tasks;
t. the status of ongoing projects;
u. cost savings initiatives and productivity improvements; and
v. the IHSS risk ranking list.

139. The review and re-establishment or revision of the baseline and regulatory milestones for the upcoming FY and FY+1 shall occur as follows:

a. Between July and October of each year, the Parties shall:

(1) evaluate the current schedule, cost and funding status of all projects in progress in the just-ending fiscal year, particularly those activities or projects that are on the critical path to meeting regulatory milestones in the upcoming two fiscal years;

(2) share the results of this evaluation with local elected officials and the Rocky Flats Citizens Advisory Board (CAB);

(3) consult in developing, verifying and reviewing cost account documents and, as necessary, draft work packages for FY; and

(4) incorporate the most recent information available concerning project status and Congressional actions on the upcoming FY budget that may affect existing regulatory milestones and baselines.

b. Within 45 days after Congressional appropriation of the FY budget, DOE shall brief EPA, CDPHE and the CAB on the budget appropriation and tentative funding allocations for the new fiscal year at the Cost Account Document (CAD) level. If there is a delay in Congressional appropriations beyond the first of the new federal fiscal year, Rocky Flats Field Office (RFFO) shall inform EPA, CDPHE, and the CAB of any continuing resolutions, and of the impact of the delay on RFETS's ability to meet regulatory milestones and other requirements of this Agreement. EPA, CDPHE, and the CAB will review these actions and may recommend reallocation of available funds.

c. Within 10 days of receipt of the DOE allotments to RFETS, but no later than 60 days after the OMB apportionment of DOE's FY appropriation, the

Parties shall evaluate the schedule, cost, and funding status of all projects scheduled to be implemented during the FY and FY+1 in light of the factors set forth in paragraph 138 and in light of Subpart 11C. Any Party or the CAB may propose changes to the baselines or regulatory milestones for FY or FY+1. After the Parties have completed their evaluation of the baselines and regulatory milestones for FY and FY+1, EPA and CDPHE shall re-establish the regulatory milestones, or establish modified ones, as appropriate. DOE shall revise the baselines as necessary to ensure that the re-established or modified regulatory milestones are fully incorporated therein.

(1) If the RFETS EM allotment exceeds the projected cost for the scope of RFETS EM projects defined for FY, DOE shall recommend the implementation of additional scope or the acceleration of activities during the FY commensurate with the difference in projected costs. DOE may propose using part or all of the excess allotment for activities not covered by this Agreement.

(2) If the projected cost for the scope of RFETS EM projects defined for FY exceeds the RFETS EM allotment for the FY, the Parties shall attempt to agree on a revised scope or pace of RFETS EM activities that can be accomplished within the RFETS EM allotment. However, EPA and CDPHE retain full discretion to determine that the scope and pace of regulated activities that can be accomplished within the RFETS EM allotment is insufficient to protect human health or the environment, or is otherwise inconsistent with the exercise of their regulatory authorities. To the extent that the Parties are unable to agree on a revised scope or pace of EM activities and milestones regulated under this Agreement for FY, EPA

and CDPHE shall unilaterally establish milestones for FY. DOE may dispute the establishment of such milestones pursuant to Part 15D. Following any final decision that establishes regulatory milestones for FY that DOE believes cannot be met due to lack of funding, DOE shall make a good faith effort to comply with such milestones. A good faith effort may, but does not necessarily, include one or more of the following actions: rescoping or rescheduling the baseline consistent with the regulatory milestones, developing and implementing new productivity improvements or cost-saving measures, requesting re-allotments or reprogramming of appropriated funds, and seeking supplemental appropriations. If DOE subsequently fails to meet a regulatory milestone, it retains the right to assert the defenses described in paragraph 238 in response to any enforcement action by EPA or CDPHE.

(3) The Parties will use their best efforts to complete the processes described in this paragraph by the end of the first quarter of each fiscal year. To the extent that the Parties cannot reach consensus regarding either the baselines or regulatory milestones for FY and FY+1, EPA and CDPHE shall unilaterally establish the milestones, and those portions of the baselines or regulatory milestones for which the Parties cannot reach consensus shall be subject to the appropriate dispute resolution provisions of Subpart 15D. Existing regulatory milestones will remain binding pending resolution of the dispute.

140. The review and revision of the baseline and establishment of regulatory milestones for FY+2 shall occur as follows:

a. Within one week after RFFO receipt of EM planning and/or budget guidance for FY+2, RFFO shall provide a copy of such guidance to CDPHE, EPA, and the CAB. Within one week after receipt by RFFO of target level funding guidance, it shall provide a copy of such guidance to CDPHE, EPA, and the CAB. Within three weeks after receipt by RFFO of target level funding guidance, it shall provide a preliminary assessment of its impacts to CDPHE, EPA, and the CAB. RFFO shall also provide a copy of its initial contractor budget guidance to CDPHE, EPA, and the CAB within two weeks after its issuance.

b. Following any final determination of the baselines and regulatory milestones for FY and FY+1 (described in the preceding paragraph), DOE, in consultation with EPA, CDPHE, and the CAB, shall propose the tentative activities and the relative priorities of those activities to be performed in FY+2 pursuant to this Agreement. The tentative activities and relative priorities identified shall reflect the newly revised baselines for FY and FY+1 and evaluation of the factors described in paragraph 138. CDPHE and EPA shall approve or modify the tentative activities and such approval or modification shall not be subject to dispute resolution until after the conclusion of the steps described in the following sub-paragraph.

c. Within 60 days of identification of the tentative FY+2 activities, the Parties shall establish the FY+2 baselines and regulatory milestones, considering the factors set forth in paragraph 138. DOE shall use its best efforts to identify early on any constraints that its budgetary targets would impose on FY+2 activities. To the extent that the Parties cannot reach consensus on the FY+2 baselines and regulatory milestones, EPA and CDPHE shall unilaterally establish regulatory milestones for FY+2. The dispute resolution provisions of Subpart 15D may be applied to those portions of the baselines or

regulatory milestones for which the Parties cannot reach consensus. The regulatory milestones established by EPA and CDPHE shall be binding pending resolution of the dispute.

d. RFFO shall, in consultation with EPA and CDPHE, develop a proposed program (described in Cost Account Documents and other budget formulation documents) sufficient to support the FY+2 baseline and regulatory milestones identified pursuant to the preceding sub-paragraph. If necessary, RFFO will prepare additional funding scenarios consistent with the DOE-HQ funding guidance (the "target level funding case"). In the event the target level funding is insufficient to fund all tasks necessary to ensure budget year and outyear regulatory milestones are met, RFFO shall, in consultation with EPA and CDPHE, describe the resulting schedule impacts, including projections of any regulatory milestones that may be missed. RFFO shall include this description with the submittal of its proposed budget to DOE-HQ. If EPA and CDPHE disagree with RFFO's analysis of the impacts of the target level funding case on the schedules and regulatory milestones in this Agreement, they may individually or jointly prepare a description of those impacts. RFFO shall forward the Parties' descriptions to DOE-HQ with its own description of the impacts. If these issues are not subsequently resolved prior to DOE's submission of its budget request to OMB, DOE-HQ shall forward all Parties' descriptions of the schedule impacts to OMB with its budget submission.

e. At the conclusion of the process established by this paragraph and any related dispute resolution, the Parties will transmit to the CAB in writing the list of regulatory milestones established for FY+2, along with an explanation of how the Parties addressed any CAB recommendations regarding those milestones.

141. When milestones are established or re-established, DOE shall update Attachment 8 to include the newly established or-reestablished milestones.

142. DOE shall keep EPA, CDPHE, local elected officials, and the CAB adequately informed of budgetary matters that may affect implementation of the RFCA as specified below:

a. Within ten business days of submission of the President's budget to Congress, DOE shall submit to EPA, CDPHE, and the CAB a summary of the budget request forwarded to DOE-HQ by RFFO, and submit to EPA, CDPHE, and the CAB a summary of the Site-EM budget request forwarded by DOE-HQ to OMB associated with the President's budget.

b. Within 60 days after the President's submission of the FY+1 budget to Congress, RFFO shall brief EPA, CDPHE, and the CAB on those aspects of the President's budget request relating to this Agreement at the Cost Account Document level of detail, or at a lower level of detail if available. At this briefing, RFFO shall provide EPA, CDPHE, and the CAB with a written description of any differences between the funding levels identified in the Cost Account Documents that were prepared pursuant to the paragraph 140.d in the preceding fiscal year to support what was then the FY+2 baseline and regulatory milestones, and is now the FY+1 baseline and regulatory milestones, and the actual funding levels included in the President's budget request to Congress, along with an assessment of the impact such differences may have on DOE's ability to meet regulatory milestones or other requirements established under this Agreement.

c. DOE shall notify and discuss with EPA, CDPHE, and the CAB, prior to transmittal to OMB, any budget amendment, supplemental appropriation request, reprogramming request, and any analyses of any corresponding impacts upon the workscope and schedules and DOE's ability to meet regulatory

milestones or other requirements of this Agreement with and without the amendment, supplemental appropriation or reprogramming request.

Subpart B. Budget Execution

143. The activities described in this Subpart are directed at execution of the budget for the current FY.

144. DOE, CDPHE and EPA Project Coordinators shall meet periodically throughout the FY to monitor and discuss the status of projects scheduled during the year and cost savings initiatives and productivity improvements associated with those projects.

145. RFFO shall provide EPA and CDPHE with copies of the Site Program Execution Guidance at the same time it provides such guidance to its contractors.

146. RFFO shall consult with EPA and CDPHE in reviewing the work package summary documents prepared by its contractor.

147. Throughout the FY, DOE shall promptly notify EPA, CDPHE, local elected officials, and the CAB of any proposed site-specific or major programmatic action, if such action is likely to have an impact on DOE's ability to meet the baselines or regulatory milestones in this Agreement. DOE shall consider any comments CDPHE, EPA, local elected officials, or the CAB may provide in implementing the proposed action.

148. Within 30 days following the completion of DOE's annual midyear management review (approximately April-May of each year), RFFO shall brief EPA, CDPHE, and the CAB on any decisions that affect regulatory milestones under this Agreement.

149. DOE shall provide EPA, CDPHE, and the CAB with a copy of the reports specified in section 3153 of the Defense Authorization Act for fiscal year 1994 within ten business days of their submission to Congress.

150. Neither the process described in this Part, nor CDPHE's participation in it, constitutes a waiver by the State of its position that the Executive Branch is obligated to seek full funding for all activities required by this Agreement, and that DOE's obligation to comply with the requirements of this Agreement is not contingent on funding. In addition, acceptance of the process described in this Part, does not constitute a waiver by DOE that its obligations under this Agreement are subject to the availability of appropriated funds and the provisions of the Anti-Deficiency Act, 31 U.S.C. Sec. 1341.

Subpart C. Cost Savings Initiatives and Productivity Improvements

151. The Parties agree to consult during the Site budget planning and execution processes to identify and evaluate opportunities and incentives to improve productivity and reduce the costs associated with environmental management activities at the Site and, whenever reasonable, implement such measures. While the Parties recognize the high value of identifying and implementing cost savings measures and productivity improvements, the identification and implementation of such measures and improvements are not requirements of this Agreement. However, nothing in this Part shall preclude EPA or CDPHE from requiring actions within their statutory authority that may incidentally result in cost savings or productivity improvements.

152. The Parties recognize that efficiently, cost-effectively managing and conducting activities at RFETS is a key element to successfully achieving the Preamble objectives. To this end, standards, requirements and practices shall be regularly reviewed to determine that activities at RFETS are conducted in a manner that is sufficient to achieve compliance with requirements and to protect workers, the public, and the environment, and necessary to accomplish the Preamble objectives expeditiously and efficiently. To maximize the efficient use of all organizations' resources, the Parties shall conduct and participate in such reviews internally and in cooperation with the others regarding matters of shared interests. Each shall provide to the others

information about the nature, status, and implementation of its internal "necessary and sufficient" reviews. If cost savings are gained as a result of these reviews, that information shall also be provided to DOE for use in determining overall cost savings under this Part.

153. RFETS will have an approved cost baseline prior to the implementation of the following paragraphs concerning application of cost savings. By June 15, 1996, DOE in consultation with the regulators, shall review the proposed cost baseline submitted by its contractor and shall approve a final Site Cost Baseline by October 1, 1996. The Site Cost Baseline will be updated annually, subject to DOE approval.

154. A percentage of cost savings presumptively will be retained at RFETS for use in performing additional EM activities. The presumption of on-site retention of cost savings may be overcome if DOE headquarters determines that there is an imminent danger or significant threats to human health or the environment at another DOE site, and the application of the RFETS cost savings is necessary to abate such danger or threat. DOE headquarters agrees to consult with EPA and CDPHE prior to applying the presumptive share to another DOE facility. Determinations with respect to overcoming the presumption that cost and productivity savings will stay at RFETS lie within DOE's sole discretion, and shall not be subject to the dispute resolution provisions of this Agreement.

155. The percentage of cost savings to be retained at RFETS is 60% in the first year following the adoption of an approved cost baseline (FY 1997), 75% in the second year, and 90% in the third year and every year thereafter. To the extent that any cost savings are attributed to RFETS contractors, the percentages cited in this paragraph apply to the cost savings remaining after any contractual obligations have been paid to such contractors.

PART 12 CHANGES TO REGULATORY MILESTONES

156. A regulatory milestone that is established according to the provisions of this Agreement shall be changed upon receipt

of a timely request for change, provided good cause, as defined in this Part, exists for the requested change. Any request for change by any Party shall be submitted in writing and shall specify:

a. the regulatory milestone that is sought to be changed;
b. the length of the change sought;
c. the good cause(s) for the change; and
d. any related regulatory milestone that would be affected if the change were granted.

157. Good cause for a change includes the following:

a. An event of force majeure;
b. A delay caused by EPA or CDPHE's failure to meet any requirement of this Agreement;
c. A delay caused by the initiation of judicial action;
d. A delay caused, or which is likely to be caused, by the grant of a change in regard to another regulatory milestone;
e. A delay caused by a change to a planning assumption, as specified in the baseline, that results from either a request by CDPHE or the EPA, or is identified by DOE, but does not represent a failure of DOE or its contractors to properly manage the work;
f. A stop-work order by EPA or CDPHE;
g. a delay caused by the requirement to perform additional work under CERCLA §§ 104(a)(1)(A), 104(a)(1)(B), or 106(a); and
h. Anything else mutually agreed to by the Parties as constituting good cause.

158. Requests for a change for one or more regulatory milestones shall be submitted no less than 30 days prior to the date of the first regulatory milestone for which the change is sought, except for changes sought on the basis of a force majeure.

159. Absent agreement of the Parties with respect to the existence of good cause, DOE may seek and obtain a determination through the dispute resolution process that good cause exists.

160. Within 14 days of receipt of a request by DOE for a change of a regulatory milestone, the LRA, after consultation with the SRA, shall grant, grant in part, or deny the request. The SRA may dispute the LRA's decision, pursuant to the expedited dispute resolution provisions of Subpart 15E. DOE may dispute a denial or partial grant of a change request in accordance with Subpart 15B.

161. A timely request for a change, as defined in paragraph 158 shall toll any assessment of stipulated penalties or application for judicial enforcement of the affected regulatory milestone until a decision is reached on whether the requested change will be approved. If dispute resolution is invoked and the requested change is denied, stipulated penalties may be assessed and may accrue from the date of the original regulatory milestone. Following the grant of a change, an assessment of stipulated penalties or an application for judicial enforcement may be sought only to compel compliance with regulatory milestone, as most recently changed.

PART 13 FORCE MAJEURE

162. A force majeure means any event arising from factors beyond the control of a Party that could not be avoided or overcome by due diligence and that causes a delay in, or prevents the performance of, any obligation under this Agreement. Force majeure may arise by reason of events including, but not limited to:

a. acts of God, fire, war, insurrection, civil disturbance, or explosion;

b. unanticipated breakage or accident to machinery, equipment or lines of pipe despite reasonably diligent maintenance;

c. adverse weather conditions that could not reasonably be anticipated;

d. restraint by court order or order of public authority;

e. inability to obtain, consistent with statutory requirements and after exercise of reasonable diligence, any necessary authorizations, approvals, permits, or licenses due to action or inaction of any governmental agency or authority other than the DOE;

f. delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence; and

g. any strike or other labor dispute not within the control of the Parties affected thereby.

163. Force majeure shall not include increased costs or expenses of response actions, whether or not anticipated at the time such response actions were initiated.

164. DOE shall bear the burden of establishing that a delay was caused by an unforeseen or unexpected event or occurrence, that the event was beyond DOE's control, that the event could not have been avoided or overcome by due diligence, and that the event delayed or prevented performance by a date or in the manner required by this Agreement.

165. To assert a claim of force majeure, DOE shall provide verbal notification to the LRA, or, in cases that affect Site-Wide issues, both CDPHE and EPA within two business days after DOE becomes aware, or should have become aware of, the effect of the event on DOE's ability to perform the obligations of the Agreement creating the claim of force majeure, followed by written confirmation within an additional business day. Failure to assert a claim of force majeure within this time frame shall constitute a waiver of DOE's right to dispute any denial of an extension request or assessment of stipulated penalties on the basis of the event giving rise to the force majeure.

166. The LRA, or, for Site-Wide issues, both EPA and CDPHE shall accept, accept in part, or reject DOE's claim of force majeure within 14 days of receipt of the written notice of

claim. DOE may only dispute the LRA's decision on a claim of force majeure in the context of the LRA's decision on a change to a regulatory milestone. Nothing in the preceding sentence shall prevent DOE from raising force majeure as a defense to any action by the State or EPA to enforce a requirement of this Agreement.

PART 14 STOP WORK ORDERS

167. DOE, the LRA, or, in the case of a Site-Wide issue, the SRA, may issue a stop work order for work covered by this Agreement, whether or not the particular work at issue is already the subject of dispute resolution. The stop work order may be issued if the Party believes a particular task or portion of work (1) is inadequate or defective, (2) is likely to have a substantial adverse effect on other response action selection or implementation processes, or (3) is pursuant to Subparts 10B (Changes to Work) or 15F (disputes regarding overall direction of proposed work). The provisions of this Part shall not be invoked for any disagreement on the selection of remedial/corrective action. Issuance of a stop work order shall be made in writing by the DRC member of the requesting Party, sent to the DRC members of other Parties, as appropriate, and shall state the reason as to why the stop work order is required.

168. Work affected by the stop work order will immediately be discontinued for up to five business days pending determination by the DRC pursuant to Subpart 15B or 15E, as appropriate (LRA or Site-Wide). The DRC shall confer and meet as necessary during this period. If the DRC does not concur in the need for work to stop, work shall remain stopped pending immediate elevation to the SEC. Once the issue is referred to the SEC, the procedures of Subpart 15B shall apply, except that the LRA member of the SEC shall render its decision within five business days after receipt of notice from the DRC. To the extent practicable, prior notification shall be given to the other Parties that a stop work order is forthcoming.

169. If the Parties agree that the stop work order is necessary, the stop work order shall constitute a timely request for change

to a regulatory milestone, pursuant to Part 12 (Changes to Regulatory Milestones). DOE's time periods for performance of the work subject to the stop work order, as well as the time period for any other work dependent upon the work which was stopped, shall be extended pursuant to Part 12 of this Agreement for such period of time equivalent to the time in which work was stopped, or as agreed by the Parties.

170. Resumption of work following issuance of a stop work order will be authorized by the submittal of a written decision of the DRC or the SEC. The written decision can be of two types: 1) the DRC or SEC decision states that the stop work order is rescinded and that work can resume immediately; or 2) the DRC or SEC decision upholds the stop work order and states the conditions that must exist before the work can be resumed. In this instance the decision will identify the LRA that will make the determination that the conditions for work resumption have been satisfied only if the designation of LRA should change as a result of the work resumption decision. When the designated LRA determines that the conditions to resume work have been satisfied it will advise DOE, in writing, that the stop work order has been lifted and that DOE is authorized to proceed with the work.

171. Upon receipt of the written decision to resume work or when the LRA has determined that the conditions to resume work have been satisfied, DOE shall determine the magnitude of baseline and regulatory milestone changes resulting from the stop work order. DOE shall then request changes to the regulatory milestones pursuant to Part 12.

PART 15 RESOLUTION OF DISPUTES

Subpart A. General Provisions Regarding Dispute Resolution

172. If a dispute subject to dispute resolution under this Agreement arises, the appropriate procedures of this Part shall apply. The Parties recognize the value of speedily resolving ripe disputes. Thus, each Party's responsible staff level personnel are encouraged to raise disputed matters quickly for resolution in accordance with this Part.

Nevertheless, the Parties shall use their best efforts to informally resolve issues. The Parties agree to invoke dispute resolution only for significant issues; to utilize the dispute resolution process only in good faith; to use their best efforts to comply with the timeframes for dispute resolution established in this Part; and to expedite, to the extent possible, the dispute resolution process whenever it is used.

173. The time frames specified in this Part shall begin to run on the last date that a party to the dispute receives the notice of dispute in accordance with Part 22.

174. Subject to Part 18 (Reservation Of Rights) the Parties shall be bound by and abide by all terms and conditions of any final resolution of dispute obtained pursuant to this Part.

175. The pendency of any dispute under this Part shall not affect DOE's responsibility for timely performance of the work required by this Agreement, except for (1) an event of force majeure; (2) cases where the final LRA decision-maker concurs that, under the particular circumstances associated with the dispute, an extension is appropriate; or (3) when DOE has delivered a change request to CDPHE and EPA 120 days or more in advance of a regulatory milestone, and CDPHE or EPA action on the change request has been disputed. In the latter case, the time period for completion of the work shall be extended for a period of time usually not to exceed the time taken to resolve any good faith dispute beyond 120 days.

176. CDPHE or EPA may bring an administrative or judicial enforcement action for any violation of the requirements of this Agreement without first initiating dispute resolution. However, if a matter is already subject to dispute resolution, CDPHE and EPA agree to participate in good faith in the dispute resolution process prior to bringing any such enforcement action. DOE may not bring an administrative or judicial action challenging any action by CDPHE or EPA that is subject to dispute without first exhausting the appropriate dispute resolution process provided in this Part.

177. Within 21 days of the final resolution of any dispute under this Part, DOE shall incorporate the resolution and final determination into the appropriate plan, schedule, or procedure(s), and proceed to implement the activity according to the amended plan, schedule, or procedure(s). DOE shall notify the other Parties as to the action(s) taken to comply with the final resolution of a dispute. This time period may be extended as agreed by the Parties.

178. The Dispute Resolution Committee (DRC) is the first level of formal dispute resolution among all three Parties. CDPHE designated member of the DRC is the Hazardous Waste and Materials Management Division Director. DOE's designated member of the DRC is the Assistant Manager for Strategy, Integration, and Guidance, Rocky Flats Field Office. The EPA member of the DRC is the Region VIII Assistant Regional Administrator for Ecosystems Protection and Remediation. The Senior Executive Committee (SEC) is the second level of dispute resolution among all three Parties. The SEC will serve as the forum for resolving appeals from the DRC. CDPHE's representative on the SEC shall be the Director, Office of Environment. The EPA's representative on the SEC is the Region VIII Administrator. The DOE's representative on the SEC is the Manager, Rocky Flats Field Office. Written notice of any delegation of authority from a Party's designated DRC or SEC member shall be provided to the other Parties, pursuant to the procedures of Part 27 (Notification). It is the Parties' intention that the SEC members implement their responsibilities personally, to the extent practicable. The State-EPA Dispute Resolution Committee (SEDRC) and the State-EPA Senior Executive Committee (SESEC) shall have the same composition as the DRC and SEC, respectively, but the DOE member of the SEDRC and the SESEC shall not have a vote for purposes of determining consensus in the decisions of those bodies.

Subpart B. DOE Disputes Regarding Decisions by the Lead Regulatory Agency and Other Specified Disputes

179. DOE may invoke the dispute resolution provisions of this Subpart for the following decisions of the LRA:

a. disapproval of a proposed final document;
b. denial or partial grant of a change requested for a regulatory milestone;
c. those matters specified in paragraph 217 (Stipulated Penalties); or
d. stop work orders.

180. Upon agreement of all Parties, the dispute resolution provisions of this Subpart may be invoked to resolve disputes over the interpretation or implementation of this Agreement. In cases where the dispute concerns a Site-Wide matter, or where the Parties cannot agree whether EPA or CDPHE should be the LRA, the outcome of each level of dispute shall either be a consensus resolution or a joint statement of the differing positions.

181. The provisions of this Subpart may be invoked by any Party to resolve a dispute over a proposed amendment to this Agreement. In such a case, the outcome of each level of dispute shall either be a consensus resolution or a joint statement of the differing positions.

182. DOE may also invoke the dispute resolution provisions of this Subpart as specifically provided in this Agreement.

183. To invoke a dispute under this Subpart, the DOE Project Coordinator shall submit to the members of the DRC within 14 days of the disputed action a Written Notice of Dispute, setting forth in a clear and precise manner the particular issues in dispute, the nature of the dispute, the DOE's position with respect to the dispute, and the information relied upon to support its position. The DOE Project Coordinator shall develop the Written Notice of Dispute in consultation with the other Project Coordinators and shall include in the Written Notice of Dispute any positions and supporting information provided by the other Project Coordinators within the 14 day period. The DRC will serve as a forum for resolution of disputes for which agreement has not been reached by the Project Coordinators, unless the DRC, by unanimous consent, agrees to elevate the dispute immediately to the SEC for resolution.

184. For disputes raised by DOE, the DRC or SEC member representing the Support Regulatory Agency for the disputed issue may, with the consent of either DOE or the LRA, participate in dispute resolution on that disputed issue. The SRA's involvement (or lack thereof) in the dispute resolution process shall not constitute cause to delay the dispute resolution process.

185. If the DRC has not elevated the dispute to the SEC by unanimous consent, the DRC shall have 21 days from receipt of the Written Notice of Dispute to resolve the dispute unanimously and issue a written decision. If the DRC, after accepting the dispute for its review, is unable to resolve the dispute within this 21-day period, the LRA DRC member shall issue a written decision. This decision may be appealed to the SEC level by DOE upon notice to the other Parties within seven days of the decision by the LRA's DRC member. Upon such appeal, the written decision of the LRA's DRC member, along with the Written Notice of Dispute shall be forwarded along with any supporting information to the SEC for resolution. If the LRA DRC member determines that the dispute is frivolous, he or she shall include such determination in the written decision, together with an explanation of the reasons supporting the determination.

186. The SEC members shall as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached within 21 days, the LRA SEC member shall issue a written final decision, except as provided by either of the following two paragraphs.

187. Where EPA is the LRA, if, during the 21 day period for SEC resolution, the members of the SEC unanimously determine that the nature of the dispute is nationally significant, they may request that the dispute be elevated to the Administrator of EPA. Alternatively, if within 14 days of the Regional Administrator's decision, the Secretary of Energy makes a written determination that the dispute is nationally significant, or the Governor makes a written determination that the dispute is a matter of significant state

policy, either the Secretary or the Governor may elevate the dispute to the EPA Administrator in accordance with all applicable laws and procedures. Upon request and prior to resolving the dispute, the Administrator of EPA shall meet and confer with the Secretary of Energy and the Governor or his designee to discuss the issue(s) under dispute. Upon resolution, the Administrator shall provide DOE, the Governor, and CDPHE with a written decision within 21 days of the elevation of the dispute setting forth the final resolution of the dispute.

188. Where CDPHE is the LRA, the decision of the Director of the Office of Environment shall be considered final agency action for the purposes of judicial review under § 24-4-106, C.R.S. (1988), except as provided in this paragraph. If DOE objects to such decision or determination, DOE may appeal to the appropriate tribunal for review. If, during the 21-day period for SEC resolution, the members of the SEC unanimously determine that the nature of the dispute involves significant policy issues, they may request that the dispute be elevated to the Governor or his designee for resolution. Alternatively, if within 14 days of the decision of the Director of the Office of Environment, the Secretary of Energy or her designee makes a written determination that the dispute is nationally significant, or the Governor makes a written determination that the dispute is a matter of significant state policy, either the Secretary or her designee or the Governor or his designee may elevate the dispute to the Governor or his designee. Upon request and prior to resolving the dispute, the Governor or his designee shall meet and confer with the Secretary of DOE and the Regional Administrator to discuss the issue(s) under dispute. Upon resolution, the Governor or his designee shall provide DOE and EPA with a written decision within 21 days of the elevation of the dispute setting forth final resolution of the dispute. This decision shall constitute final agency action for purposes of judicial review under § 24-4-106, C.R.S. (1988). If DOE objects to such decision or determination, DOE may appeal to the appropriate tribunal for review.

189. DOE disputes of Site-Wide matters shall follow the provisions of this Subpart, except that both EPA and

CDPHE shall be deemed to be the LRA. If CDPHE and EPA members of the SEC are unable to reach agreement, the provisions of paragraphs 201-202 shall apply in lieu of the provisions of paragraphs 186-188.

Subpart C. Disputes Regarding Additional Work Required under CERCLA

190. DOE may invoke the dispute resolution provision of this Subpart where activities or circumstances at the Site give rise to a regulator determination that additional work is required because the jurisdictional elements described either in CERCLA §§ 104(a)(1)(A), (a)(1)(B), or 106(a) exist.

191. Disputes under this Subpart may be invoked only after the regulator notifies DOE of the additional requirements that it deems necessary. DOE will not dispute regulator information requests.

192. Disputes under this Subpart will be limited to the following issues:

a. whether the jurisdictional elements described either in CERCLA §§ 104(a)(1)(A), (a)(1)(B), or 106(a) exist;
b. whether the activity or circumstance giving rise to the jurisdictional elements described either in CERCLA §§ 104(a)(1)(A), (a)(1)(B), or 106(a) is adequately regulated by other federal or state laws; or
c. whether the additional work required by the regulator or proposed by DOE will mitigate or abate the circumstances giving rise to the jurisdictional elements described either in CERCLA §§ 104(a)(1)(A), (a)(1)(B), or 106(a).

193. Disputes under this Subpart shall follow the procedures set forth in Subpart B (Disputes Regarding Decisions by the Lead Regulatory Agency), except as provided in paragraph 69 (carrying out CERCLA authority).

Subpart D. Disputes Regarding Budget and Work Planning

194. After EPA and CDPHE re-establish the regulatory milestones for FY and FY+1, or establish regulatory milestones for FY+2 or beyond, if DOE disagrees with any part of their position, any Party may, upon determining that consensus is not likely to be reached, initiate dispute resolution by providing notice to the other Parties. Disputes regarding regulatory milestones for FY and FY+1 shall be raised during the consultative process described in paragraph 139.c. Disputes regarding regulatory milestones for FY+2 or beyond shall be raised during the consultative process described in paragraph 140.b. Within seven days of such notice, the Project Coordinators in consultation with the DRC shall prepare a Written Notice of Dispute regarding those portions of regulatory milestones for FY, FY+1, or FY+2 or beyond, as appropriate, for which the Parties were not able to reach a consensus. Upon completion of the Written Notice of Dispute, the DRC shall forward it along with any supporting information to the SEC. The SEC shall have 14 days to attempt to resolve the dispute. If it is unable to resolve the dispute in this time, EPA and CDPHE shall issue a written decision establishing the regulatory milestones for FY, FY+1, or FY+2 or beyond, as appropriate. DOE may, consistent with paragraphs 187 and 188, elevate any disputed aspects of this decision to the Administrator or the Governor or their designees for their resolution.

195. If EPA and CDPHE determine that they are unlikely to reach agreement among themselves regarding some or all revisions to the regulatory milestones for FY and FY+1, or establishment of regulatory milestones for FY+2 or beyond, either one may initiate State-EPA dispute resolution by providing notice to the other Parties, local elected officials, and to the Rocky Flats Citizens Advisory Board (CAB) Site-Wide Issues Committee. Disputes regarding regulatory milestones for FY and FY+1 shall be raised during the consultative process described in paragraph 139.c. Disputes regarding regulatory milestones for FY+2 or beyond shall be raised during the consultative process described in paragraph 140.b. Within seven days of such notice, CDPHE

and EPA Project Coordinators in consultation with the State-EPA Dispute Resolution Committee (SEDRC) shall prepare a Written Notice of Dispute regarding those portions of the regulatory milestones for FY and FY+1, or FY+2 or beyond, as appropriate, on which the two Parties were not able to reach agreement. Upon completion of the Written Notice of Dispute, the SEDRC shall forward it, along with any supporting information, to the SESEC and to the CAB Site-Wide Issues Committee. The SESEC shall attempt to resolve the dispute within 14 days of receipt of the notice. If the SESEC is unable to resolve the dispute within this time period, CDPHE and EPA members of the SESEC shall each prepare a proposed resolution of the dispute describing proposed regulatory milestones for FY, FY+1, or FY+2 or beyond, as appropriate. The SESEC shall submit the proposed resolutions of the dispute to the CAB Site-Wide Issues Committee no later than five days after the end of the 14 day period.

196. After receipt of these proposed resolutions, the CAB Site-Wide Issues Committee may make a recommendation to the CAB. The CAB may act upon this recommendation at its next meeting. Any recommendation approved by the CAB shall not be considered binding on CDPHE or EPA. CDPHE and EPA shall have five days from receipt of the CAB recommendation to reach agreement on regulatory milestones for FY, FY+1, or FY+2 or beyond. If they are unable to reach agreement, the existing regulatory milestones for FY and FY+1 shall continue in effect, and the existing FY+2 baseline shall be used to develop the FY+2 budget. Upon resolution of any dispute pursuant to this paragraph, the SESEC shall explain to the CAB in writing how the dispute was resolved, and how this result related to the CAB's recommendation.

Subpart E. EPA-State Disputes Regarding Site-Wide Issues

197. Resolution of disputes between CDPHE and EPA under this Agreement regarding Site-Wide issues shall be resolved as described in this Subpart. Site-Wide issues shall be defined as:

a. proposed plans/draft permit modifications
b. CADs/RODs
c. Updates to the Environmental Restoration Ranking
d. Updates to the IGD
e. Future Standard Operating Procedures for Activities Regulated under this Agreement that are related to more than one OU
f. Treatment Systems that will treat wastes from both the Industrial Area and the Buffer Zone
g. Treatability Study reports for activities that are related to more than one OU
h. Sitewide Surface Water and Ground Water Management Plan
i. Integrated Monitoring Plan
j. Updates to the Community Relations Plan
k. Updates to the HRR

EPA may also dispute CDPHE's decision regarding any retrievable, monitored waste storage or disposal facility described in paragraph 80, within 15 days of the issuance of any such decision.

198. If the Project Coordinator for either regulator determines that the regulators are not likely to reach consensus on a Site-Wide issue, he or she, in consultation with his or her agency's SEDRC representative, shall submit to the SEDRC a Written Statement of Dispute setting forth the nature of the dispute, the disputing party's position with respect to the dispute, and the information relied upon to support its position. Receipt of the Written Statement of Dispute, along with any supporting documents, by the SEDRC shall constitute formal elevation of the dispute in question to the SEDRC. At such time as the disputing party submits a statement of dispute to the SEDRC, a copy shall be sent to DOE.

199. Following elevation of a dispute to the SEDRC, the SEDRC shall have 21 days to reach a consensus resolution. CDPHE and EPA SEDRC representatives shall jointly sign a written statement of any consensus resolution and provide a copy to DOE. If the SEDRC is unable to reach a consensus resolution, CDPHE and EPA members shall forward

pertinent information and their respective recommendations to the SESEC for resolution.

200. The SESEC members shall, as appropriate, confer, meet, and exert their best efforts to resolve the dispute. The SESEC shall have 21 days to reach a consensus resolution. CDPHE and EPA SESEC representatives shall jointly sign a written statement of any consensus resolution and provide a copy to DOE.

201. If the SESEC does not reach a consensus resolution within 21 days, EPA or CDPHE may issue a written notice elevating the dispute to the Administrator of EPA and the Governor or his designee for resolution. The Administrator, the Governor, and the Secretary of Energy or their respective designees, shall, as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision.

202. If any State-EPA dispute is not resolved pursuant to this Part, such disputes shall be subject to Part 18 (Reservation of Rights).

Subpart F. Disputes Regarding Overall Direction of Proposed Work

203. This Subpart provides a mechanism to prevent expenditure of resources on proposed work that appears likely would ultimately be disapproved by the appropriate regulator.

204. If, during the scoping phase of any proposed work, (e.g., prior to preparation of a draft decision document) the Project Coordinators cannot concur with the overall direction of the proposed work, either Project Coordinator may invoke dispute resolution, and may issue a stop work order. Following the issuance of a stop work order under this Part, DOE performance of activities related to the proposed work that is the subject of the dispute may subject it to enforcement action by the LRA.

205. In attempting to resolve the dispute, the DRC or SEC should consider a number of options, including the possibility of

conducting limited work that could inform a subsequent decision on whether to proceed or terminate the disputed work.

206. Disputes invoked under this Subpart shall follow the procedures described in paragraphs 183-186, except as follows:

a. the Written Notice of Dispute shall be prepared by the LRA Project Coordinator in consultation with the other Project Coordinators; and

b. there shall be no appeal of a decision by the LRA's SEC representative, although the disputed matter may be raised in a dispute of a subsequent decision.

PART 16 ENFORCEABILITY

207. Notwithstanding the terms of this Part, any failure by DOE to meet any regulatory milestone contained in this Agreement may give rise to the assessment of stipulated penalties by EPA or CDPHE, in accordance with Part 17 (Stipulated Penalties).. The provisions of this Part shall apply consistent with the provisions of Part 17 (Stipulated Penalties).

208. The Parties agree that all Parties shall have the right to enforce the requirements of this Agreement.

209. All requirements of this Agreement shall be enforceable by any person, including the State, pursuant to sections 310(c) and 113(h)(4) of CERCLA, and any violation of such requirements of this Agreement will be subject to civil penalties under sections 109 and 310(c) of CERCLA. DOE agrees that the State or one of its agencies is a "person" within the meaning of section 310 of CERCLA.

210. Requirements of this Agreement that are requirements of RCRA and CHWA shall be enforceable by any person, including the State, pursuant to any rights existing under section 7002(a)(1)(A) of RCRA. DOE agrees that the State or one of its agencies is a "person" within the meaning of section 7002(a) of RCRA. Nothing in this paragraph shall

be construed as being in contravention of CERCLA § 113(h).

211. Requirements of this Agreement that relate to RCRA or CHWA may be enforced by CDPHE as requirements of a Compliance Order on Consent issued pursuant to § 25-15-308, C.R.S.

212. Requirements of State environmental permits issued for activities regulated under this Agreement may be enforced through the State's normal enforcement mechanisms.

213. In the event CDPHE determines that DOE's failure to meet any regulatory milestones under this Agreement was due to a lack of funding, it is CDPHE's intention not to seek or assess any penalties (stipulated or otherwise) for such violations, provided that, as provided in Part 11 (Budget and Work Planning):

a. DOE used its best efforts to obtain funding necessary to achieve the affected milestone(s);

b. the President's budget requested sufficient funding to comply with all legal requirements for the EM program(s) under which the work necessary to meet the affected milestone was to be funded;

c. DOE-HQ allotted the insufficient funding for the affected EM program(s) consistently with the approach described in the Final Report of the Federal Facility Environmental Restoration Dialogue Committee, or another approach deemed acceptable by CDPHE; and

d. DOE made a good faith effort to comply with the milestones, notwithstanding the lack of sufficient funding.

Nothing in this paragraph shall preclude CDPHE from taking other enforcement action seeking or imposing relief of an injunctive nature.

PART 17 STIPULATED PENALTIES

214. In the event that DOE fails to meet any regulatory milestone in accordance with the requirements of this Agreement, EPA and/or CDPHE may assess a stipulated penalty against DOE, pursuant to the provisions of this Part. If EPA and CDPHE both assess a stipulated penalty for the same violation, the combined assessments shall not exceed the amounts specified in the following paragraph. Stipulated penalties will accrue from the date of the missed milestone or the date the non-compliance occurs. In no event shall this Part give rise to a stipulated penalty for each missed regulatory milestone in excess of the statutory limits set forth in § 109 of CERCLA.

215. DOE's liability for stipulated penalties for missed regulatory milestones will accrue at the following rates:

a. $20,000 per week for each regulatory milestone designated as "first tier." First tier regulatory milestones shall be limited to no more than six per fiscal year, and shall reflect end-points for major projects.

b. $5,000 per week for each regulatory milestone designated as "second tier." Second tier regulatory milestones shall be limited to no more than six per fiscal year, and may reflect beginning points for multi-year projects or end-points in addition to those designated as "first tier" regulatory milestones.

216. Before final settlement of any assessment of stipulated penalties, the Parties will strive to reach agreement for preserving the use of penalty funds at the Site. Nevertheless, the regulators shall retain the ultimate authority for directing the disposition of the penalty funds.

217. Upon determining that DOE has failed to meet a regulatory milestone, the EPA, for any stipulated penalty assessed by the EPA, or CDPHE, for any stipulated penalty assessed by CDPHE, shall so notify DOE in writing of the failure within 4 weeks of the first date of non-compliance. If the failure in

question is not already subject to dispute resolution at the time such notice is received, DOE shall have 15 days after receipt of the notice to invoke the dispute resolution provisions of Subpart 15B on the questions of whether the failure did in fact occur, the number of days of violation, or, provided the conditions of Part 13, paragraph 165 are met, should be excused, in whole or in part, on the basis of force majeure. Within this same time frame, DOE may also submit any information for the regulators' consideration in assessing a penalty under this Part. Upon DOE's request, this information will be discussed at an informal conference prior to any assessment of the penalty. DOE shall not dispute the accrual rate for stipulated penalties assessed under this Part. EPA or CDPHE may exercise discretion regarding the amount of accrued stipulated penalties to be assessed within a specific period of violation. DOE shall not dispute EPA's or CDPHE's decision regarding the amount of the accrued penalty to be assessed. No assessment of a stipulated penalty shall be final until the conclusion of any dispute resolution procedures related to the assessment of the stipulated penalty. Stipulated penalties shall continue to accrue during any dispute resolution process, but DOE will not be obligated to pay until the dispute is resolved. DOE shall not be liable for the stipulated penalty assessed if the failure is determined, through the dispute resolution process, not to have occurred, or to be excused due to the occurrence of a force majeure.

218. Any stipulated penalty assessed by the EPA shall be payable to the Hazardous Substances Response Trust Fund from funds authorized and appropriated for that purpose. Any stipulated penalty assessed by CDPHE shall be payable to the General Fund of the State of Colorado. The Parties recognize that stipulated penalties assessed by CDPHE are done so under the State's RCRA authority and not pursuant to CERCLA.

219. DOE shall pay stipulated penalties assessed by CDPHE under this Part within 120 days, unless CDPHE agrees to a longer schedule. DOE shall request, for stipulated penalties assessed by the EPA, specific authorization and appropriation to pay such penalty in its budget submittal for

FY+1, unless DOE has already submitted its final budget for that budget year to OMB, in which case DOE shall request such specific authorization and appropriation in its FY+2 budget submittal.

220. Nothing in this Part shall preclude the EPA or CDPHE from pursuing any other sanction that may be available to them for DOE's failure to meet any regulatory milestone in accordance with the requirements of this Agreement in lieu of assessing stipulated penalties. Nor shall anything in this Part preclude EPA or CDPHE from seeking or imposing any injunctive relief that may be available to them to compel DOE to remedy any failure to meet any regulatory milestone in accordance with the requirements of this Agreement. Assessment of a stipulated penalty by EPA and CDPHE shall preclude EPA and CDPHE from seeking to also impose a statutory penalty for failure to meet the same regulatory milestone. The EPA and CDPHE agree to not seek sanctions against DOE outside of this Agreement for those matters which are subject to a dispute under this Agreement, during the pendency of the dispute resolution process. Assessment of a stipulated penalty by CDPHE under this Part shall preclude CDPHE from seeking to impose additional penalties against DOE for failure to meet the same regulatory milestone under both this Agreement and a CHWA permit. Assessment of a stipulated penalty by CDPHE under this Part shall not preclude CDPHE from seeking to impose penalties against DOE's contractors for failure to meet the same regulatory milestone under the CHWA permit; provided, however, that in such a case, if the contractor seeks reimbursement of the penalty assessed against it as an allowable cost and the DOE contracting officer allows the request, the penalty assessment against the contractor shall be vacated.

221. Nothing in this Part shall preclude EPA or the State from taking any enforcement action available to either of them for any violation of a requirement of this Agreement other than a regulatory milestone.

222. The annual reports required by § 120(e)(5) of CERCLA, shall include, with respect to each final assessment of a

stipulated penalty against DOE under this Agreement, each of the following:

a. the facility responsible for the failure;
b. a statement of the facts and circumstances giving rise to their failure;
c. a statement of any administrative or other action taken at the relevant facility, or a statement of why such measures were determined to be inappropriate;
d. a statement of any additional action taken by or at the facility to prevent recurrence of the same type of failure; and
e. the total dollar amount of the stipulated penalty for the particular failure.

223. Nothing in this Agreement shall be construed to render any officer or employee of DOE personally liable for the payment of any stipulated penalty assessed pursuant to this Part.

PART 18 RESERVATION OF RIGHTS

224. If the Parties are unable to resolve any dispute arising under this Agreement after utilizing the appropriate dispute resolution procedures, then each regulatory agency reserves its rights to impose its requirements directly on DOE, to defend the basis for those requirements, and to challenge the other regulatory agency's conflicting requirements.

225. The Parties each reserve any rights they may have to seek judicial review of a proposed decision or action taken with respect to any response actions at any given unit on the grounds that such proposed decision or action conflicts with its respective laws governing protection of human health and/or the environment. The Parties agree to utilize the dispute resolution procedures contained in Subpart 15E prior to seeking such judicial review. It is the understanding of the Parties that this reservation is intended to provide for challenges where the adequacy of protection of human health and the environment or the means of achieving such protection is at issue. Notwithstanding the foregoing, the

SRA may not challenge a decision by the LRA (except on Site-Wide matters).

226. Nothing in this Agreement shall be interpreted to affect EPA's authority under CERCLA to impose requirements necessary to protect public health and the environment. Where CDPHE is the LRA, the EPA DRC member shall consult with the CDPHE DRC member prior to EPA's exercise of this authority..

227. The Parties have determined that the activities to be performed under this Agreement are in the public interest. Except as provided in paragraph 231, EPA and CDPHE agree that compliance with this Agreement shall stand in lieu of any administrative and judicial remedies against DOE or its present or future contractors that are available to EPA and CDPHE regarding the currently known releases or threatened releases of hazardous substances, hazardous wastes, pollutants, hazardous constituents, or contaminants at the Site that are the subject of the activities being performed by DOE under this Agreement. However, nothing in this Agreement shall preclude EPA or the State from exercising any administrative or judicial remedies available to them under the following circumstances:

a. In the event or upon the discovery of a violation of, or noncompliance with, any provision of RCRA or CHWA, including any discharge or release of hazardous waste or hazardous constituents that is not addressed in the baseline or subsequent Work Description Documents.

b. Upon discovery of new information regarding hazardous substances or hazardous waste management including, but not limited to, information regarding releases of hazardous waste, hazardous constituents, or hazardous substances that are not addressed in the baseline or subsequent Work Description Documents.

c. Upon CDPHE's or EPA's determination that such action is necessary to abate an imminent and

substantial endangerment to the public health, welfare, or the environment.

228. For matters within the scope of this Agreement, CDPHE and EPA reserve the right to bring any enforcement action against other potentially responsible parties, including contractors, subcontractors and/or operators, if DOE fails to comply with this Agreement. For matters outside this Agreement, and any actions related to response costs, EPA and the State reserve the right to bring any enforcement action against other potentially responsible parties, including DOE's contractors, subcontractors and/or operators, regardless of DOE's compliance with this Agreement.

229. This Agreement shall not be construed to limit in any way any rights that may be available by law to the public or any citizen to obtain information about the work under this Agreement or to sue or intervene in any action to enforce State or federal law.

230. Except as provided in paragraph 227, DOE is not released from any liability or obligation which it may have pursuant to any provisions of State and federal law, nor does DOE waive any rights it may have under such law to defend any enforcement actions against it.

231. DOE is not released from any claim for damages for injury to, destruction of, or loss of natural resources pursuant to section 107 of CERCLA.

232. EPA and the State reserve all rights to take any legal or response action for any matter not specifically part of the work covered by this Agreement.

233. Nothing in this Agreement shall be interpreted to affect EPA's responsibility for oversight of CDPHE's exercise of its authorized RCRA authorities. In carrying out any such oversight, EPA shall follow the statutory and regulatory procedures, EPA policies, any State-EPA MOU describing how EPA shall exercise its RCRA oversight responsibilities, and the provisions of this Agreement.

234. Nothing in this Agreement shall be construed to affect any criminal investigations or criminal liability of any person(s) for activities at the Site.

235. Notwithstanding this Part or any other part of this Agreement, the State reserves any rights it may have to seek judicial review of a Site-Wide or final remedial action in accordance with sections 113, 121 and 310 of CERCLA, 42 U.S.C. §§ 9613, 9621 and 9659, but agrees to exhaust the dispute resolution process in Part 15 prior to seeking judicial review.

236. The State also reserves any rights it may have to seek judicial review of any ARAR determination made at the time of final remedy selection for an OU in accordance with sections 121 and 310 of CERCLA.

237. The Parties reserve their rights to challenge any decision affecting final remedy selection at any OU under all applicable laws.

238. The Parties agree that in any administrative or judicial proceeding seeking to enforce the requirements of this Agreement and Colorado Compliance Order on Consent, the DOE may raise as a defense that any failure or delay was caused by the unavailability of appropriated funds. In particular, nothing herein shall be construed as precluding DOE from arguing either that the unavailability of appropriated funds constitutes a force majeure, or that no provisions of this Agreement or Order shall be interpreted to require the obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. §§ 1301 or 1341, or the Atomic Energy Act, 42 U.S.C. § 2201. While the State disagrees that an Anti-Deficiency Act defense, or any other defense based on lack of funding exists, the Parties do agree and stipulate that it is premature at this time to raise and adjudicate the existence of such a defense.

239. Consistent with paragraph 26, in the event of any administrative or judicial action by the State or EPA, all Parties reserve all rights, claims, and defenses available under the law.

PART 19 AMENDMENT OF AGREEMENT

240. Except as provided in paragraph 275 (termination by State) the body of this Agreement (i.e., pages 1-127) may only be amended by mutual agreement of the Parties. Such amendments shall be in writing and shall have as their effective date the date on which they are signed by all Parties, unless otherwise agreed, and shall be incorporated into this Agreement by reference. Any amendment that any Party considers significant shall upon request of such Party be submitted for public comment. Any dispute as to the need for the proposed amendment shall be resolved pursuant to Part 15 (Resolution of Disputes) of this Agreement. Should the Parties determine that an amendment to this Agreement is necessary, and the amendment would affect a State environmental permit for the Site, CDPHE shall initiate appropriate permit modification procedures for that permit in accordance with its regulations.

241. Notwithstanding paragraph 240, approval of, or changes to, any Attachment or any document required to be submitted and approved pursuant to Part 9 (Review and Approval of Documents and Work) do not constitute amendments to this Agreement under this Part.

PART 20 PERIODIC REVIEW

242. The EPA and CDPHE will, pursuant to CERCLA section 121(c), review any remedial action associated with any final ROD that results in any hazardous substances, pollutants, or contaminants remaining on-site, no less often than every five years after the initiation of such final remedial action to assure that human health and the environment are being protected by the remedial action being implemented. If upon such review EPA finds that further remedial action by DOE is warranted to assure the protection of human health and the environment, DOE shall implement remedial actions necessary to abate any danger or threat of a release of a hazardous substance which is consistent with sections 104 and 106 of CERCLA. The Parties agree that Part 24, Amendment of Agreement, shall not be construed as a limitation on the requirement for further remedial actions

which might be required as a result of the five-year review mandated by CERCLA section 121(c). Part 10, (Changes to Work), shall be used to incorporate any requirement for further remedial actions.

243. Any dispute by DOE or CDPHE of the determination under paragraph 242 shall be resolved under Subpart 15C.

244. The Parties recognize that, even with the efforts in this Agreement to streamline and coordinate regulatory processes, implementation of this Agreement still involves multiple regulators and the coordination of many environmental laws and regulations. The success of this Agreement will depend, in large measure, on the good faith implementation of the consultative approach described in Part 7. The Parties agree to abide by the "Principles for Effective Dialogue and Communication at Rocky Flats," Appendix 2 of this Agreement. Consistent with these Principles, the Parties will endeavor to be reasonable and flexible in interpreting and applying applicable State and Federal environmental requirements.

245. The Parties shall assess the implementation of this Agreement every two years with the first assessment being conducted no later than the second anniversary date of the execution of this Agreement. In this assessment, the Parties shall conduct a review of the substantive and procedural requirements of this Agreement, including but not limited to the regulatory approach set forth in Part 8, to determine what measures each Party will take to ensure effective implementation of this Agreement. Such measures may include reallocation of resources, internal reorganization, revised procedures for consultation or internal coordination, and additional training of appropriate staff.

246. Any Party may propose an amendment to this Agreement pursuant to Part 19 when that Party believes its concerns regarding the effective implementation of this Agreement have not been adequately addressed through measures of the sort described in the preceding paragraph. The Party proposing an amendment to this Agreement under this Part

shall provide a written analysis setting forth the basis for the proposed amendment to the other Parties.

247. If any Party rejects a proposed amendment under this Part, such rejection shall be subject to Part 15, including paragraphs 187-188 for any disputes that are nationally significant.

248. Amendments negotiated and approved by the Parties under this Part shall follow Part 19 for subsequent incorporation into the Agreement and, if necessary, applicable permits required by State environmental laws.

249. Pending the outcome of such negotiations and any dispute associated with negotiations under this Part, all portions of the Agreement shall remain effective, including Part 8, all regulatory milestones and all other requirements of this Agreement.

PART 21 REPORTING

250. The Parties' Project Coordinators will meet at least monthly to discuss the implementation of this Agreement. The purpose of these meetings will be to identify accomplishments, work in progress and anticipated work, potential changes to the baseline, implementation difficulties, compliance issues, opportunities for streamlining, and other matters of importance to the successful implementation of this Agreement. Each Party will provide the others with agenda issues at least two business days in advance of the meeting.

251. Quarterly, DOE will provide EPA and CDPHE with a Progress Report that describes the progress toward implementation of the activities covered by this Agreement. It is the Parties' intention, insofar as possible, to use existing reports and databases to fulfill this reporting requirement. Upon request, DOE will provide EPA and/or CDPHE with copies (or portions thereof) of the EM Progress Tracking System or equivalent report on a monthly basis.

PART 22 NOTIFICATION

252. Any report, document, or submittal provided to EPA and CDPHE pursuant to a schedule identified in or developed under this Agreement shall be hand delivered, sent certified mail, return receipt requested, or delivered by any other method that verifies receipt by the intended recipient. Such reports, documents, or submittals shall be delivered to the addresses listed in Attachment 11. Documents sent to DOE shall be sent to the address listed in Attachment 11. Documents must be sent in a manner designed to be received by the date due to the designated addresses unless otherwise specified by the Parties.

253. Unless otherwise requested, all routine correspondence may be sent via regular mail.

PART 23 SAMPLING AND DATA/DOCUMENT AVAILABILITY

254. It is the goal of the Parties to develop and maintain an effective and efficient monitoring system for RFETS. This system includes both the monitoring programs conducted by DOE, CDPHE and the cities of Broomfield and Westminster, and data management systems. The monitoring system shall provide information for operating and remediating the Site, assuring public safety, and informing the public about discharges and emissions from RFETS. The system will minimize duplicative efforts. The long range goal is to integrate all environmental and natural resource monitoring.

255. In consultation with CDPHE and EPA, DOE shall establish an Integrated Monitoring Plan (IMP) that effectively collects and reports the data required to ensure the protection of human health and the environment consistent with the Preamble, compliance with this Agreement, laws and regulation, and the effective management of the Site's resources. The IMP will be jointly evaluated for adequacy on an annual basis, based on previous monitoring results, changed conditions, planned activities and public input. Changes to the IMP will be made with the approval of EPA and CDPHE. Disagreements regarding any modifications to

the IMP will be subject to the dispute resolution process described in Part 15.

256. All Parties shall make available to each other and the public results of sampling, tests, or other data with respect to the implementation of this Agreement as specified in the IMP or appropriate sampling and analysis plan. If quality assurance is not completed within the time frames specified in the IMP or appropriate sampling and analysis plan, raw data or results shall be submitted upon the request of EPA or CDPHE. In addition, quality assured data or results shall be submitted as soon as they become available.

257. Consistent with Part 30 (Classified and Confidential Information), DOE shall permit EPA, CDPHE, or their authorized representatives to inspect and copy, at reasonable times, all records, files, photographs, documents, and other writing, including sampling and monitoring data, pertaining to work undertaken pursuant to this Agreement.

258. By the end of FY 1996, the Parties will establish a mutually agreed-upon mechanism to exchange verified and validated monitoring data between the Parties and the cities of Westminster and Broomfield in a timely and efficient manner.

PART 24 RETENTION OF RECORDS

259. Consistent with the NCP, RCRA, CHWA, and DOE records retention schedules, whichever is longer, DOE shall preserve all its records and documents in its possession or in the possession of its employees, agents, contractors or subcontractors which relate in any way to the presence of hazardous substances, pollutants, and contaminants at the Site for the duration of this Agreement or for a term consistent with the NCP, RCRA, and CHWA and the DOE records retention schedules then in effect at the termination of this Agreement. DOE retention schedules are developed in accordance with the National Archives and Records Administration records management handbook, Disposition of Federal Records (NSN 7610-01-055-8704). All Site records and documents so retained shall be proposed for

permanent retention in accordance with 36 CFR 1228.28(b). DOE shall make all such records or documents available to CDPHE and the EPA upon request.

PART 25 ACCESS

260. Without limitation on any authority conferred on EPA or CDPHE by statute, regulation, or other court order or agreement, EPA, CDPHE, and/or their authorized representatives, with proper safety and security clearances, shall have authority to enter the Site at all reasonable times, with or without advance notification for the purposes of, among other things:

a. Inspecting records, operating logs, contracts, and other documents directly related to implementation of this Agreement.

b. Reviewing the progress of DOE or its contractors in implementing this Agreement.

c. Conducting such tests as the EPA or State Project Coordinator deems necessary.

d. Verifying the data submitted to EPA and/or CDPHE by DOE.

Nothing in this paragraph shall be construed as a waiver of the attorney-client privilege.

261. DOE shall honor all requests for such access by EPA or CDPHE, conditioned only upon presentation of proper credentials and conformance with Site security and safety requirements. The latter may include dosimetry devices, training on Site safety features (such as alarms, barriers, and postings), and advance fittings for clothing and respiratory equipment as ordinarily required. Escorts to restricted areas shall be assigned expeditiously by the appropriate Assistant Manager, RFFO.

262. To the extent that this Agreement compels access to property not owned by DOE (Third Party Property), DOE shall, to

the extent of its authority including CERCLA § 104, and taking all appropriate administrative and judicial actions, obtain access to Third Party Property for the Parties, their agents and their contractors. DOE shall use its best efforts with the Third Party Property owner to enter into a limited non-exclusive license to allow the parties, their agents and their contractors to enter upon the Third Party Property to perform work required under this Agreement. DOE shall also use its best efforts to ensure that the non-exclusive license runs with the land, and binds and inures to the benefit of the parties, their successors and their assigns.

263. If DOE is unable to obtain a non-exclusive license that runs with the land, DOE may enter into any other type of agreement that grants access to the Third Party Property for the parties, their agents and their contractors. Any access agreement that does not run with the land must provide for (1) the continuation of any work required under this Agreement in the event the Third Party Property owner transfers an interest in or otherwise encumbers the Third Party Property; and (2) a thirty day written notice, sent by certified mail, to the EPA, CDPHE and DOE prior to the Third Party Property owner's transferring an interest in or otherwise encumbering the Third Party Property. DOE shall not enter into any license or access agreement that provides conditional access to the EPA or CDPHE without EPA's and CDPHE's prior consent. The EPA's or CDPHE's refusal to approve a conditional license or access agreement shall constitute a denial of access to the Third Party Property.

264. If, after having taken reasonable steps to do so, DOE is unable to obtain a non-exclusive license or other access agreement from a Third Party Property owner, the EPA shall assist DOE in obtaining access to the Third Party Property. If necessary, DOE shall also request that the Department of Justice (DOJ) seek a court order to obtain access to the Third Party Property for the Parties, their agents and their contractors. EPA's assistance shall include the EPA's support in requesting that DOJ seek a court order to gain access to the Third Party Property.

265. In the event that the parties agree that they have failed to obtain access to Third Party Property, notwithstanding their pursuit of all reasonable means as described in the preceding paragraphs of this Part, DOE shall submit appropriate changes to approved work under this Agreement within 15 days of such agreement.

PART 26 TRANSFER OF REAL PROPERTY

266. No lease or conveyance of title, easement, or other interest in the real property at RFETS on which any containment system, treatment system, monitoring system, or other response action(s) is installed or implemented pursuant to this Agreement shall be consummated by DOE without provision for continued maintenance of any such system or other response action(s). At least 30 days prior to any conveyance, DOE shall notify EPA and CDPHE of the provisions made for the continued operation and maintenance of any response action(s) or system installed or implemented pursuant to this Agreement. DOE shall also comply with the provisions of section 120(h) of CERCLA regarding any conveyance of title at RFETS and any applicable law or regulation governing the disposal of real property owned by the United States.

267. DOE's current mission for RFETS presents the possibility that title to portions or all of RFETS may be conveyed to other Parties. DOE shall comply with the provisions of the Community Environmental Response Facilitation Act (CERFA), 42 U.S.C § 9620(h)(4) and applicable law regarding any lease. DOE shall perform the required assessments in order to identify all uncontaminated real property on the Site. The results of these assessments shall be provided to the Regional Administrator of EPA Region VIII by DOE for the Regional Administrator's review and concurrence, and to the public. Upon the sale or other transfer of property identified as uncontaminated, DOE shall record in any related documents any covenants required by CERFA.

268. Decision documents shall require institutional controls as necessary to protect human health and the environment. Any

transfer of real property shall be subject to any such institutional controls.

PART 27 PARTICIPATION BY LOCAL ELECTED OFFICIALS AND THE PUBLIC/ADMINISTRATIVE RECORD

269. As required by the IAG, DOE developed and implemented a Community Relations Plan (CRP) which responded to the need for an interactive relationship with all interested community elements in the Rocky Flats area. The plan was based on community meetings and other relevant information including public comments received on the IAG. The Plan addressed activities and elements of work being undertaken by DOE. DOE agreed to develop and implement the CRP in a manner consistent with sections 113(k) and 117 of CERCLA, 42 U.S.C. §§ 9313(k) and 9617, relevant community relations provisions of the NCP, EPA policy and guidance (including but not limited to EPA OSWER Directive 2903.03C, Community Relations in Superfund: A Handbook, January, 1992, and any modifications thereto), DOE policy and guidance, State statutes, regulations, and guidance identified in the CRP. All Parties recognize the need to review and revise the CRP in light of DOE's new mission and the finalization of this Agreement. Therefore, DOE shall develop, in consultation with CDPHE and EPA, a revised CRP, to be titled the "Rocky Flats Site-Wide Integrated Public Involvement Plan." This plan will adhere to the following principles and guidelines:

a. ongoing consultation with local elected officials;
b. public involvement will be integrated to assure consistency with RFETS' long-term vision, mission and budget;
c. public involvement at RFETS will be tied clearly to the decision-making process;
d. public involvement at RFETS will meet state and federal legal requirements;
e. public involvement will be pursued for input to big picture, public policy issues even if there is no legal driver;

f. the public involvement approach will recognize the needs for participation by various and diverse community groups and people with varying levels of knowledge and understanding of RFETS issues;

g. public involvement achievements, and the integrated Public Involvement Plan, will be reviewed at least annually by DOE in consultation with the relevant agencies and by stakeholder groups for applicability to and viability under current circumstances at RFETS; and

h. public involvement will include activities which are informational and/or educational in nature in accordance with the needs of the decision-makers and the stakeholders.

270. Except in case of an emergency or the need for the public to receive information immediately, any Party issuing a formal press release to the media regarding any of the work required by this Agreement shall advise the other Parties of the nature of the press release at least two business days before the issuance of such press release and of any subsequent changes prior to release. In the case of an emergency or the need for the public to obtain the information immediately, the Parties shall provide such notice as soon a practicable.

271. DOE established and is maintaining Administrative Record files for CERCLA response actions at or near the Site in accordance with section 113(k) of CERCLA. The Administrative Record file and resultant Administrative Record shall be established and maintained in accordance with EPA policy and guidelines. Any future changes to these policies and guidelines affecting DOE's maintenance of the Administrative Record file shall be discussed by the Parties and an agreement will be reached on how best to accommodate those changes. DOE shall maintain the master copy of the Administrative Record file at or near the Rocky Flats Site. The Administrative Record file and final Administrative Records shall be established and maintained by DOE after EPA and State approval. There are four Information Repository locations for the public to view information copies of the Administrative Record files. The

repository copies of the Administrative Record files may be supplied in microfilm, electronic format, optical format, or any other format or media which will allow access to a reasonable facsimile of the original documents. Each repository will also house equipment to facilitate the viewing and reproducing documents contained in the Administrative Record files. These repositories are listed in Attachment 7. At least one copy of the Administrative Record shall be accessible to the public at times other than normal business hours.

272. The Administrative Record files shall be established and maintained for each OU and for sitewide activities. The Administrative Record for sitewide activities, including copies maintained at the four identified repositories, shall be updated by DOE at least annually. The Administrative Record associated with a specific OU or accelerated actions at a specific OU shall be updated at least annually. An index of documents in the complete Administrative Record files will accompany each update to the Administrative Record files. Documentation on issues giving rise to decisions from dispute resolution procedures of Part 15, and decisions themselves, shall be included in the Administrative Record files.

273. EPA, after consultation with CDPHE when necessary, shall make the final determination of whether a document is appropriate for inclusion in an Administrative Record. EPA and CDPHE shall participate in compiling the Administrative Records by submitting documents to DOE as EPA and CDPHE deem appropriate. DOE shall include these documents in the Administrative Record files. Every Administrative Record file will be reviewed by DOE, EPA, and CDPHE before the file is closed at the signing of the appropriate decision document.

PART 28 DURATION/TERMINATION

274. Within 60 days after the Federal Register notice that removes the Site from the NPL, all Parties shall commence negotiations for appropriate modification of this Agreement which considers among other things the continuing

requirements of any CAD/RODs being implemented at the site at that time.

275. CDPHE may, in its sole discretion, terminate this Agreement upon 60 days' written notice to the other Parties. Termination of the Agreement by CDPHE shall be effective on the 60th day after such notice, unless CDPHE agrees otherwise in writing before such date. Once termination is effective pursuant to this paragraph, this Agreement shall have no further force or effect, except that the regulatory milestones and any decisions made by EPA that have become requirements of this Agreement shall remain enforceable as requirements of a CERCLA § 120 Interagency Agreement between EPA and DOE.

PART 29 SEVERABILITY

276. If any provision of this Agreement is ruled invalid, illegal, unconstitutional, or unenforceable, the remainder of the Agreement shall not be affected by such ruling.

PART 30 CLASSIFIED AND CONFIDENTIAL INFORMATION

277. Notwithstanding any provision of this Agreement, all requirements of the AEA of 1954, as amended, and all Executive Orders concerning the handling of unclassified controlled nuclear information, restricted data, and national security information, including "need to know" requirements, shall be applicable to any access to information or facilities covered under the provisions of this Agreement. EPA and CDPHE reserve their right to seek to otherwise obtain access to such information or facilities if it is denied, in accordance with applicable law.

278. Any Party may assert on its own behalf, or on behalf of a contractor, subcontractor, or consultant, a confidentiality claim or privilege covering all or any part of the information requested by this Agreement, pursuant to 42 U.S.C. § 9604 and State law. Except as provided in the preceding paragraph, analytical data shall not be claimed as confidential. Parties are not required to provide legally

privileged information. At the time any information is furnished which is claimed to be confidential, all Parties shall afford it the maximum protection allowed by law. If no claim of confidentiality accompanies the information, it may be made available to the public without further notice.

PART 31 RECOVERY OF STATE COSTS

279. DOE agrees to reimburse CDPHE for:

a. all non-discriminatory state environmental fees or assessments; and

b. CERCLA administrative or oversight activities incurred which specifically relate to the implementation of this Agreement at the Site, to the extent such costs are reasonable, not inconsistent with the NCP, and are not covered by permit fees and other assessments, or by any other agreement between the Parties.

280. The amount and schedule of payment of these costs will be negotiated based on anticipated needs and in consideration of DOE's multi-year funding cycles. CDPHE reserves all rights it has to recover any other past and future costs in connection with CERCLA activities conducted at the Site. CDPHE shall annually provide DOE a written estimate of projected costs to be incurred in implementing this Agreement for the upcoming two fiscal years, no later than the end of the first quarter of each fiscal year. DOE and CDPHE may choose to enter into a grant or other mechanism to provide for payment of CDPHE's costs relating to the implementation of this Agreement, including any fees or other assessments that would otherwise be imposed under 6 CCR 1007-3, Part 100.3, 5 CCR 1001 (air quality), or (after delegation of the federal program for Rocky Flats) 5 CCR 1002 (water quality).

281. Unless DOE and CDPHE have entered into a grant or other mechanism as provided in the preceding paragraph, DOE agrees to pay CDPHE, in full, and no later than 30 days after receipt of invoice, all document review fees and annual waste fees as required by 6 CCR 1007-3, Part 100.3,

consistent with section 6001 of RCRA; 5 CCR 1001 (air quality fees); and 5 CCR 1002 (water quality fees). DOE may contest charges in accordance with the dispute resolution procedures of Part 15B.

PART 32 OTHER CLAIMS

282. Nothing in this Agreement shall constitute or be construed as a bar or release from any claim, cause of action, or demand in law or equity by or against any person, firm, partnership, or corporation, including any DOE or predecessor agency contractor, subcontractor, and/or operator, either past or present, for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Rocky Flats Site.

283. This Agreement does not constitute any decision on pre-authorization of funds under section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

284. Neither EPA nor CDPHE shall be held as a party to any contract entered into by DOE to implement the requirements of this Agreement.

PART 33 PUBLIC COMMENT/EFFECTIVE DATE

285. This Agreement will be presented for a 60-day public review and comment period. The Parties will respond to public comments received during the public comment period in a separate document to be entitled "Responsiveness Summary for Rocky Flats Federal Facility Agreement and Consent Order."

286. The effective date of this Agreement shall be the date on which the last Party signs this Agreement following the public comment period.

PART 34 APPROVAL OF DRAFT AGREEMENT FOR PUBLIC COMMENT

The undersigned approve release of this draft Agreement for public comment:

Gail S. Schoettler, Lieutenant Governor
State of Colorado

Thomas P. Looby, Director
Office of Environment,
Colorado Department of Public Health and Environment

Thomas P. Grumbly, Acting Under Secretary
Department of Energy

Mark N. Silverman, Manager
Rocky Flats Environmental Technology Site

Steven A. Herman, Assistant Administrator
Environmental Protection Agency

Jack W. McGraw, Deputy Regional Administrator
Region 8, Environmental Protection Agency

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ATTACHMENTS

ATTACHMENT 1

Working Group Recommendation
for Consolidation of Operable Units
at Rocky Flats Environmental Technology Site

Working Group Recommendation for Consolidation of Operable Units at Rocky Flats Environmental Technology Site

DOE, Kaiser-Hill, RMRS, CDPHE and EPA staffs developed the following proposal for Operable Unit (OU) consolidation during recent working sessions. These working sessions resulted in a recommendation to minimize the number of OUs for remediation and closure at the site. This replaces the earlier proposal dated September 28, 1995 which was modified to incorporate the Site Conceptual Vision (dated November 8, 1995) and other strategies, as well as to delineate the lead regulatory agency by area for the site.

The primary benefit of consolidating OUs is the reduced process and administrative requirements. Coordinating the regulatory jurisdictional boundaries with the OU consolidation boundaries also eases the administrative management of the OUs. The resulting cost savings can be applied to environmental remediation or other higher priority tasks at RFETS. In addition, less time and resources will be spent generating and reviewing documents, and more time and resources can be spent on risk reduction. Consolidation will also facilitate a more integrated approach to sitewide planning which will include sitewide prioritized remediation.

In the consolidation process, the working group identified the logical stopping point for each OU. Stopping points were selected to maximize the utilization of work completed to date. The working group recommends continuation of the closure process for those OUs which are nearing completion (OUs 1 and 3). In addition, the IM/IRA for OU 7 will continue and a proposed plan will be submitted based on the Presumptive Remedy currently being executed. This approach will accelerate closure and reduce costs. The following table summarizes the recommended stopping points for each OU.

Current OUs	**Consolidation/Stopping Point for Work in Progress**
OUs 1 and 3	Closure using the ROD process
OU 7	Submit IM/IRA and Proposed Plan concurrently
OU 2, OU 5 and OU 6	Complete RFI/RI Report
OU 4	Continue IM/IRA for Solar Ponds
OUs 8, 9, 10, 12, 13 and 14	Data summaries completed
OUs 11, 15 and 16	Already closed by RODs

Contaminant types and distribution, impact on surrounding areas, future potential for contamination, future land uses, and water management requirements were considered in addition to stopping points for each OU in developing the consolidation strategy. Based on these considerations the existing operable units are proposed to be consolidated in the following manner:

Proposed OUs	Consisting of	Lead Regulatory Agency
OU 1	Current OU 1 IHSSs	EPA
OU 3	Current OU 3 IHSSs	EPA
OU 7	Current OU 7 IHSSs	EPA
Industrial Area OU	All IHSSs from OUs 4, 8, 9, 12, 13, 14, the Original Landfill (OU 5-IHSSs 115 and 196), the Triangle Area, Old Outfall and Sludge Dispersal Area (OU 6-IHSSs 165,143, and 141) and all OU 10 IHSSs except those in the PU&D yard (IHSSs 170, 174a and 174b).	CDPHE
Buffer Zone OU	All IHSSs from OU 2, the PU&D yard from OU 10, and all IHSSs from OU 5 and OU 6 except those listed above.	EPA

CDPHE will be the lead regulatory agency for the Industrial Area OU and the EPA will be the lead regulatory agency for the Buffer Zone OU. Enclosed is a map showing the new OUs and the lead regulatory agency for each area.

Groundwater at the site will be managed in an integrated fashion. The working group does not recommend that a separate operable unit be created for groundwater as closure is not anticipated in the near-term and the added resource costs of creating an OU do not outweigh the benefits.

Working Group concurrence signatures:

W. Carl Spreng 12/7/95
CDPHE date

William C. Frame 12/7/95
EPA date

Ravi Ratra 12/7/95
DOE RFFO date

Chris S Dayton 12/7/95
Kaiser-Hill date

John E. Fa 12/7/95
RMRS date

ATTACHMENT 2

SITE MAP

ATTACHMENT 3

RFETS IHSS LIST

RFETS IHSS LIST

IHSS Number and Name	Comments
101 Solar Ponds	
102 Oil Sludge Pit	
103 Chemical Burial	
104 Liquid Dumping	
105.1 W Out-of-Service Fuel Tank	
105.2 E Out-of-Service Fuel Tank	
106 Outfall	
107 Hillside Oil Leak	
108 Trench T-1	
109 Ryan's Pit	
110 Trench T-3	
111.1 Trench T-4	
111.2 Trench T-5	
111.3 SE Trenches T-6	
111.4 SE Trenches T-7	
111.5 SE Trenches T-8	
111.6 SE Trenches T-9	
111.7 SE Trenches T-10	
111.8 Trench T-11	
112 903 Pad	
113 Mound Area	
114-Present Landfill (includes IHSS 203)	
115 Original Landfill	
116.1 Bldg 447, W. Loading Dock	
116.2 Bldg 444, S. Loading Dock	
117.1 North Site/Scrap Metal	
117.2 Middle Site Chemical Storage	
117.3 S Chemical Storage Site	
118.1 Solvent Spills West of Building 730	
118.2 Solvent Spills North End of Bldg. 707	
119.1 - OU 1- Solvent Spill Site	
119.2 Solvent Spill Site	
120.1 North Fiberglassing area	
120.2 West Fiberglassing Area	
121 OPWL Underground Concrete Tanks	
121 Tank T-29	
121 Tank T-40	
122 Valve Vault w. of 707	Same as 150.5 & 123.2
123.1 Valve Vault #7	
123.2 Valve Vault w. of 707	Same as 150.5
124.1 Holding Tank #68	
124.2 Holding Tank #66	
124.3 Process Waste Tank T-14	
125 Tank #66	
126.1 Westernmost Out of Service Tank	
126.2 Easternmost Out of Service Tank	
127 Low level Rad waste leak	
128 Oil Burn Pit #1	
129 - Oil leak (tanks outside steam plant)	
130 800 Area Rad Site #1	
131 Rad Site #1 - 700 Area	
132 Rad Site #4 700 Area	
133.1 Ash Pit #1	
133.2 Ash Pit #2	

RFETS IHSS LIST

IHSS Number and Name	Comments
133.3 Ash Pit #3	
133.4 Ash Pit #4	
133.5 Incinerator	
133.6 Concrete Wash Pad	
134(N) Lithium Metal Destruction Site	
134(S) Lithium Metal Destruction Site	
135 Bldg 335 Cooling Tower	
136.1 Cooling Tower Pond W. of 444	
136.2 Cooling Tower Pond East of B444	
137 Bldg 712/713 Cooling Tower Blowdown	
138 Bldg 779 Cooling Tower Blowdown	
139.1 KOH, NaOH condensate tanks spill	
139.2 Hydrofluoric Acid Tank spills	
140 Hazardous Disposal Site	
141 Sludge Dispersal Area	
142.1 Pond A-1	
142.12 Walnut and Indiana Pond	
142.2 Pond A-2	
142.3 Pond A-3	
142.4 Pond A-4	
142.5 Pond B-1	
142.6 Pond B-2	
142.7 Pond B-3	
142.8 Pond B-4	
142.9 Pond B-5	
142.10 Pond C-1	
142.11 Pond C-2	
143 771 Outfall	
144 Sewer line overflow	
145 Sanitary Waste Line Leak	
146.1 Process Waste Tank #31	
146.2 Process Waste Tank #32	
146.3 Process Waste Tank #34W	
146.4 Process Waste Tank #34E	
146.5 Process Waste Tank #30	
146.6 Process Waste Tank #33	
147.1 MAAS Area	
147.2 Bldg 881 Conversion Activity	
148 Waste Leaks	
149.1 OPWL to SEPS	
149.2 OPWL to SEPS	
150.1 Rad Site N. of 771	
150.2 Rad Site W. of 771/776	
150.3 Rad Site Between B771 & B774	
150.4 Rad Site NW of B750	
150.5 Valve Vault w. of 707 Same as 123.2	
150.6 Loading Dock	
150.7 Rad Site S. of 779	
150.8 Rad Site S. of 776	
151 Fuel Oil Leak	
152 Fuel Oil Tank 221 Spills	
153 Oil Burn Pit	
154 Pallet Burn Site	
155 903 Pad Lip Area	

RFETS IHSS LIST

IHSS Number and Name	Comments
156.1 Radioactive Site	
156.2 Soil Disposal Area	
157.1 Rad Site North-Central Ave Ditch	
157.2 Rad Site south	
158 Rad Site - B551	
159 Rad Site B559	
160 Rad Site Bldg 444 Parking Lot	
161 Rad Site #2 - W. of 664	
162 Rad Site #2 - 700 Area	
163.1 Rad Site 700 North B774	
163.2 Americium Slab	
164.1 Rad Site #2 - 800 Area	
164.2 Rad Site #2, 800 Area, Bldg 886 Spill	
164.3 Rad Site #2 800 Area, 887 Pad	
165 Triangle Area	
166.1 Landfill Trench A	
166.2 Landfill Trench B	
166.3 Landfill Trench C	
167.1 N Landfill Spray Area	
167.2 Landfill Pond Spray Area	
167.3 Landfill South Spray Area	
168 West Spray Field	Closed
169 Hydrogen Peroxide Spill	
170 PU & D Storage Yard	
171 Fire Training	
172 Central Avenue Waste Spill	
173 Bldg 991 South Loading Dock	
174.1 (174a) PU&D Storage Areas	
174.2 (174b) PU & D Storage Yard; Dumpster	
175 S&W B.980 Container Storage Facility	
176 S&W Yard	
177-Building 885 Drum Storage Area	
178 B881 Drum Storage, Rm. 165	Closed
179 B865 Drum Storage, Rm. 145	Closed
180 B883 Drum Storage, Rm. 104	Closed
181 Building 334 Cargo Container Area	
182 444/453 Drum Storage Area	
183 Gas Detoxification Site	
184 Bldg 991 Steam Cleaning Area	
185 Solvent Spill	Closed
186 Valve Vault 11, 12 and 13	
187 Sulfuric Acid Spill; B443	
188 Acid Leak Southeast of Bldg. 374	
189 Nitric Acid Tanks	
190 Caustic Leak	
191 Hydrogen Peroxide Leak	
192 Antifreeze Discharge	Closed
193 Steam Condensate Leak	Closed
194 Steam Condensate Leak	Closed
195 Nickel Carbonyl Disposal	Closed
196 Backwash Pond	

RFETS IHSS LIST

IHSS Number and Name	Comments
197 Scrap Metal Storage	
199 Offsite Land Surface	
200 Great Western Reservoir	
201 Standley Lake	
202 Mower Reservoir	
203 Inactive Hazardous Waste Storage Area	
204 Original Uranium Chip Roaster	Closed
205 Sump #3 Acid Site, SE B460	
206 Inactive D-386 HW Tank B374	
207 Inactive B444 Acid Dumpsters	
208 Inactive 444/447 Waste Stor.	
209 Surface Disturbances SE of B 881	
210 Bldg 980 Cargo Container	
211 B881 Drum Storage #26-R211	Closed
213 904 Pad; Pondcrete Storage	
214 750-Pad pondcrete/saltcrete storage	
215 Abandoned sump near 774	
216.1 East Spray Field - OU 6	
216.2 East Spray Field - OU 2	
216.3 East Spray Field - OU 2	
217 B881 Cyanide Treatment - #32	Closed

ATTACHMENT 4

ENVIRONMENTAL RESTORATION RANKING

ENVIRONMENTAL RESTORATION RANKING

prepared by
ROCKY MOUNTAIN REMEDIATION SERVICES

ENVIRONMENTAL RESTORATION/
WASTE MANAGEMENT

SITEWIDE ACTIONS

under contract to

KAISER HILL/
U.S. DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

September 27, 1995

Approved by:
Program Manager

Alan M. Parker — 9/27/95
Alan Parker

Concurrence:
Sitewide Actions Manager

John E. Law — 9/27/95
John E. Law

Team Lead:

Annette L. Primrose — 9/27/95
Annette L. Primrose

September 27, 1995

Working Group Recommendation for
Prioritization of Candidate Sites for Environmental Restoration at Rocky Flats
Environmental Technology Site

The following is the proposed list of prioritized ER sites as developed by the working group comprised of DOE, EPA, CDPHE, Kaiser-Hill, L.L.C. and RMRS, L.L.C. professionals. Also included is a brief description of the methodology used by the group to create this list. This document will be used as an aid in planning and prioritizing remedial actions at RFETS. The sequence of remediation activities at Rocky Flats will generally follow this prioritization. Funding, data sufficiency, resource availability and integration with other remedial and site activities will also influence remediation sequence.

The list will change on an annual basis and as new data is developed. There are a number of locations on the list which will require further investigation. Further working sessions will be held in October to jointly develop a prioritized investigation list.

EPA, Bill Fraser

CDPHE, Melani Arai

DOE RFFO, Ravi Batra

Kaiser-Hill, Ann Siebeh

DOE RFFO, Roger Merrick

RMRS, John Law

ENVIRONMENTAL RESTORATION RANKING

A prioritized list of Environmental Restoration (ER) sites was developed to select the top priority sites for remediation. This prioritization will accelerate the cleanup process, which will more quickly reduce risks to human health and the environment. The prioritization of cleanup targets should also result in a reduction of costs associated with cleanup by allowing better planning, and more efficient utilization of resources.

A previous ER risk prioritization system ("Process for Determining the Remediation Category Of IHSSs", prepared for EG&G Rocky Flats by ICF Kaiser Engineers, March 1994) was extensively revised to include risk and cost data. The methodology for generating this prioritized list is provided below, and was developed by a working group composed of EPA, CDPHE, DOE RFFO, Kaiser-Hill, and RMRS staff. The methodology was implemented by RMRS staff and resulted in a prioritized list of ER sites, as well as identifying and ranking sites that require more information.

The list will be updated annually, or as significant new information becomes available. With the consensus of all parties, the priority of any ER site can be changed prior to updating the list, if additional information clearly indicates a need. The list should continue to be evaluated as data become available, and should also be verified by field checks and other processes to corroborate these rankings.

METHODOLOGY

General

The ER prioritization was completed using two separate evaluations:

- A screening level risk assessment including PPRG ratios, mobility and potential for further release
- Evaluation of secondary criteria including safety, waste, cost and schedule estimates.

To generate a screening level risk evaluation, analytical data were compared against background values and the appropriate specific programmatic preliminary remediation goals (PPRGs). The ratio of the analytical value to the PPRG is an estimate of associated risk, with a ratio of 100 in a given media approximating a risk of 10^{-4}. These PPRG scores were combined with the mobility and potential for further release scores to calculate the final risk score.

Mobility and potential for further release are important factors in the calculation of the prioritization because a mobile chemical near surface water, near a building, or on a steep slope is far more likely to be transported offsite or impact human health than an immobile contaminant located away from these areas. Continued environmental degradation and increasing risk to the environment and/or human health is caused by continued release of contaminants.

Data evaluation

More than 800 megabytes of RFEDS analytical data for three media were evaluated; surface soils, subsurface soils, and groundwater. The analytical data were extracted, then

compiled into data sets by media and analytical suite. The analytical data by media were compared against the chemical-specific background data, and chemical-specific PPRGs. PPRGS are risk based numbers derived using specific exposure scenarios. The specific exposure scenario basis on which the PPRGs were derived are shown below by media:

Media and Location	PPRG Set Used for Comparison
Sitewide groundwater	Open-space surface water
Sitewide subsurface soil	Construction worker subsurface soil
Industrial Area surface soil	Office worker soil
Buffer Zone surface soil	Open-space soil/sediment

Sitewide groundwater data for 1990 to 1995 were screened against background values presented in the 1993 Background Geochemical Characterization Report. There is no exposure pathway to groundwater under the current land use guidance. Groundwater data were assessed against surface water PPRGs to represent the most conservative risk by assuming that groundwater directly contacts a receptor as it daylights to surface water. Degradation was not taken into account and modeling was not performed to determine if this exposure were likely.

All subsurface soil data available for all years were used. These were compared against subsurface soil background values and PPRGs for the construction worker as the most likely receptor.

All surface soil data for all years was used. These were compared against surface soil background values. Two sets of PPRGs were used for this comparison, depending on the sample location, and the most likely exposure pathway for that location. Within the fence surrounding the Industrial Area, the surface soil data were compared to office worker PPRGs. Outside of the fence in the Buffer Zone, the surface soil data were compared to open-space PPRGs.

Assignment to Environmental Restoration Sites

All exceedances of PPRGs were tabulated for groundwater, subsurface soils, and surface soils at each unique sampling location. These sampling locations were plotted on maps using available survey information. Where no survey data were available, approximate locations were calculated using work plan maps. Using this approach, 96% of the sample locations exceeding PPRGs were plotted on maps.

The sample locations that exceeded PPRGs were assigned to areas, IHSSs or groups of IHSSs based on the media and location of the exceedance, and the chemical nature of the analytes. The following describes this process by media:

- Groundwater - The locations of all wells where a chemical concentration exceeded a PPRG were plotted on a sitewide map. Groundwater level maps were examined to ascertain groundwater flow directions. Upgradient IHSSs or groups of IHSSs were associated with each PPRG exceedance in groundwater. All known groundwater plumes were associated with the most probable source area IHSS or group of IHSSs.

- Subsurface Soils - The locations of all borings where a chemical concentration exceeded a PPRG were plotted on a sitewide map. Many of the borings were drilled to characterize known contaminant sources and so were already within an IHSS. Where a

boring was not immediately within an IHSS, it was assumed that (1) the boring was drilled to characterize an adjacent IHSS or (2) the boring was associated with the construction of a monitoring well. For borings drilled to install monitoring wells, it was assumed that any PPRG exceedances were the result of chemical movement through groundwater. In these cases, PPRG exceedances were associated with upgradient IHSSs.

- Surface Soils - The spatial extent of PPRG exceedances were plotted and examined to ascertain whether these exceedances could be assigned to an IHSS or area. Any PPRG exceedances within an IHSS were assigned to that IHSS. Exceedances outside an IHSS were compared with common air dispersion patterns and assigned to the most likely IHSS.

Screening Level Risk Evaluation

All PPRG exceedances were tabulated by IHSS. The maximum ratio for each analyte per media per area, IHSS or group of IHSSs was tabulated. A risk score was calculated for each media within each site by adding maximum ratios per media, then summing groundwater, subsurface soils, and surface soils scores. All of the individual media scores, and the total score per site, were tabulated on spreadsheets. Only the highest PPRG ratio is used for each chemical in each environmental media per location. This is a conservative approach that allows sites to be judged on a more uniform basis than if averages or median values were used.

Since several of the PPRG ratios are very large, using these ratios directly tends to bias the ranking results. Therefore, the total chemical scores were graded using the following table to bring the PPRG score more in line with the mobility and potential for further release scores.

Total Chemical Score	PPRG Score
>501	10
251-500	9
101-250	8
76-100	7
51-75	6
31-50	5
21-30	4
11-20	3
6-10	2
1-5	1

Mobility

This score takes into account the mobility of chemicals in the environment as well as the proximity of contamination to:

- steep slopes, as slope failure or erosion could move contaminants into drainages and potentially offsite,
- surface water which could potentially transport contaminants offsite, and

- buildings, as workers could be contaminated and spread contamination by walking through areas.

Mobility factors were assigned on a scale of 1 to 3. When the mobility factor was between two scores, the highest score was used.

1 - Contaminants that are immobile in the environment and are not close to buildings, surface water, and/or steep slopes. Unless radionuclides and metals were near buildings, near surface water, or on or near a steep slope, these were given the mobility score of one. Where engineered structures are in place that prevent the spread of contaminants, such as contamination beneath pavement, a mobility factor of one was used.
2 - Contaminants that are semi-mobile in the environment and are near surface water, or buildings. Includes semi-volatiles organics, pesticides and PCBs especially within the Industrial Area.
3 - Contaminants that are mobile in the environment and/or are close to surface water, steep slopes, and/or building received this score.

Potential for Further Release

This factor takes into account the potential for additional release of contaminants into the environment and includes cross media movement of contaminants within the environment. Sites were assigned a value of 1 to 3 based on the following criteria:

1 - Assigned to a site when contaminants were not present as free product, very high concentrations, and/or show no cross contamination of environmental media.
2 - Any sites where free product may be present in the ground and/or where there is a potential for cross contamination.
3 - Sites where there is indication or certainty that free product exists in the ground, where significant levels of contamination exist, and/or where cross contamination of environmental media is present.

Total Risk Score and Ranking

The total score for the phase I, screening level risk evaluation portion of the ER prioritization was calculated by multiplying the total PPRG score times the mobility and potential for further release factors. As a formal risk assessment is a more precise evaluation of the same data, where risk assessment data exist, they were used to rank sites. However, the scores calculated by the above methodology are shown. Where insufficient data currently exist to rank sites, these sites were roughly ranked using process knowledge and placed on the ranking above known low-risk sites. As data become available, the ranking for these sites will be updated. After the total list was ranked, the top 20 sites were evaluated for the secondary criteria.

SECONDARY CRITERIA EVALUATION

The most likely potential remediation technology was selected for the top 20 sites, in order to evaluate these for the following criteria:

- Worker Safety
- Waste Disposal/Treatment issues
- Reduction of toxicity, mobility and/or volume
- Rough order of magnitude costs
- Rough order of magnitude project durations
- Environmental risk due to remediation activities

These criteria were used to further prioritize the to 20 sites for remediation.

The attached list is the result of the screening level risk assessment score and the secondary evaluations.

PROFESSIONAL JUDGMENT

Professional judgment was applied in the following instances:

- Where the mobility factor for a site was primarily calculated based on building proximity, and if the site was paved, the mobility factor was reduced.

- If engineered controls are currently in-place to prevent further spread of contaminants, mobility and potential for further release factors were set at one.

- The Solar Ponds groundwater score was calculated without using data from an upgradient well which shows the effects of an upgradient plume. This well was used to calculate the groundwater score for IHSS 118.1.

- The Old Landfill has analytical data indicating the presence of radiological anomalies at the surface. These hotspots will be dealt with under the final remedy for this site.

- Hot spots - Where analytical and process knowledge indicated that a high value was of localized extent, these values were eliminated from site evaluation, and were assigned to a localized extent list. These sites will need to be evaluated to ensure that this is the case. Most of the localized extent sites are PCB sites, including a PCB site in IHSS 150.6.

- Radium - Radium 226 and 228 analyses were not used for calculation of the PPRG ratios for this prioritization. This was done for the following reasons:
  - Radium 226 and 228 are not listed for historical usage at RFETS in either the Historical Release Report (DOE, 1992) or the Rocky Flats Toxicologic Review and Dose Reconstruction, Task 3/4 Report (ChemRisk, 1992).
  - The decay chains and half-lifes of decay products make it highly unlikely that significant amounts of radium 226 or 228 would have accumulated by radioactive decay of radionuclides known to have been used at RFETS.

- The soils and groundwater in the foothills to the west of RFETS are known to have high levels of both uranium (total) and radium 226.
- The background amount for radium 226 in surface soil has a PPRG ratio of 48. Therefore, any surface soil analytical result above background would skew the prioritization score to a higher result. This is not justified given the information on usage and local occurrence.

FURTHER WORK

Fact Sheets for the top 20 ranked IHSSs and sites will be provided by November 3, 1995. These fact sheets will provide information about the IHSSs and sites, as well as provide more information for the factors evaluated during the secondary evaluation process.

ATTACHMENT 5

Action Levels and Standards Framework for
Surface Water, Ground Water, and Soils

RFCA
Attachment 5
March 14, 1996

Rocky Flats Environmental Technology Site

Action Levels and Standards Framework for Surface Water, Ground Water, and Soils

Table of Contents Page 5-1

RFCA
Attachment 5
March 14, 1996

1.0 General Background

1.1 Goal of Action Levels and Standards Framework

On October 10 and 11, 1995, a "Workout Session" was convened between DOE, EPA, CDPHE, DNFSB, and Kaiser-Hill to resolve, or develop a path to resolve, all outstanding issues associated with the new Rocky Flats Cleanup Agreement (RFCA). Several of the significant Workout Session outcomes included agreement on the Objectives presented in the RFCA Preamble and agreement that the environmental cleanup of the site will now be implemented through an integrated and streamlined regulatory approach. In addition, the approximate areal extent of four future conceptual land uses was developed. These include capped areas underlain by either waste disposal cells or contaminated materials closed in-place, an industrial use area, a restricted open space area, another restricted open space area with low levels of plutonium contamination in surface soils, and an unrestricted open space area that, while it would be managed as open space, actually could be available for any use. The revised map delineating these areas is now attached to this document as Figure 1.

As a result of the 1995 Workout Session, a working group consisting of DOE, EPA, CDPHE, and Kaiser-Hill teams was formed to develop a consensus proposal for the appropriate cleanup standards that should apply to RFETS. This Action Levels and Standards Framework presents the final recommendation of the working group and is summarized in Summary Tables 1 and 2. It has been developed in a manner generally consistent with the Preamble Objectives. In some cases, the working group found it necessary to more precisely define aspects of the Objectives so that applicability of action levels and required mitigating actions could be completely defined. The goal of the Action Levels and Standards Framework is to:

a. provide a basis for future decision-making,
b. define the common expectations of all parties, and
c. incorporate land- and water-use controls into site cleanup.

This document describes the parties' commitments and recommendations for both action levels and standards. Action levels are numeric levels that, when exceeded, trigger an evaluation, remedial action, and/or management action. Action levels will not necessarily be the same as cleanup levels which must be achieved for a remedial action to be complete. A standard is an enforceable narrative and/or numeric restriction established by regulation and applied so as to protect one or more existing or potential future uses. Within this framework, standards are associated with surface water use classifications and applied at points of compliance. Standards are not being directly applied to ground water or soils. Closure performance standards apply to RCRA units and are explained in the RFCA.

Protection of all surface water uses with respect to fulfillment of the Intermediate and Long-Term Site conditions will be a basis for making soil and ground water remediation and management decisions. Actions will be designed to prevent adverse impacts to ecological resources and ground water consistent with the Action Levels and Standards Framework. Because the Action Levels and Standards Framework does not address the inherent value of ground water, any residual effects on ground water not addressed through this Framework will be addressed under a Natural Resources Damage Assessment (NRDA).

Much of this Framework is based on Maximum Contaminant Levels or MCLs. MCLs have been established for many chemical contaminants and represent the maximum permissible level of a contaminant in drinking water.

1.2 Programmatic Assumptions

The working group developed this framework using the following inter-related programmatic or site-wide assumptions:

1. The framework must be consistent with the RFCA Preamble.
2. Implementation of the framework must protect human health and the environment.
3. Implementation of the framework must protect surface water uses and quality.

1.3 Action Prioritization and Implementation

Remedial decisions will be supportive of Intermediate and Long-Term Site conditions. Actions required as a result of exceedances of the standards or action levels described in this document will be prioritized on the Environmental Restoration (ER) Ranking. The ER Ranking will, in turn, be considered in the Budget and Work Planning Process (RFCA, Part 15). These interim remedial decisions may be implemented by means of an accelerated action (PAM or IM/IRA) or addressed as necessary in the ROD for the affected area. Actions will be developed in an integrated manner with other actions being taken and will be consistent with best management practices.

1.4 Outside Factors

Several factors outside the control of the Working Group. Foremost among these factors is the Water Quality Control Commission (WQCC). The WQCC determines water quality standards throughout Colorado. The consensus position presented herein recommends several changes to existing use designations and standards for water at RFETS (see Table 6). There is no guarantee that the WQCC will make the changes this document recommends.

Another factor that could affect the positions presented in this document is public response to the Revised Vision, the RFCA, and this Framework. Specifically, the response of the local

municipalities including Westminster, Broomfield, Thornton, and Northglenn, will be extremely important in finalizing these recommendations for standards and action levels.

SUMMARY ACTION LEVELS AND STANDARDS FRAMEWORK

SURFACE WATER - During Active Remediation (Near-Term Site Condition)

Surface Water		Action Levels (with temporary modifications, as appro.)		Action	Point of Eval.	Standards (with temporary modifications, as appro.)		Action	Point of Compliance
	Segment 4					**Non-Rads:** -Rec 2 -Agricultural -Aquatic Life Warm 2 -Water Supply (nitrate = 100 ppm)	**Rads:** -Pu = 0.15 pCi/l -Am = 0.15 pCi/l -All other rads: existing stds	Notification, source eval, mitigation if appro.	Terminal Pond Outfalls
	Segment 5	Non-Rads: organics = MCLs inorganics/metals = -Rec 2 -Agricultural -Aquatic Life Warm 2 -Water Supply (nitrate = 100 ppm)	**Rads:** -Pu = 0.15 pCi/l -Am = 0.15 pCi/l -All other rads: existing stds	Notification, source eval, mitigation if appro.	Within ponds and in main stream channels, at existing monitoring stations				

SURFACE WATER - After Active Remediation (Intermediate and Long-Term Site Condition)

Surface Water		Action Levels (1)		Action	Point of Eval.	Standards (2)		Action	Point of Compliance
	Segment 4					**Non-Rads:** -Rec 2 -Agricultural -Aquatic Life Warm 2 -Water Supply	**Rads:** -Pu = 0.15 pCi/l -Am = 0.15 pCi/l -All other rads: existing stds	Notification, source eval, mitigation if appro.	Terminal Pond Outfalls unless ponds gone; if ponds gone, TBD
	Segment 5					**Non-Rads:** -Rec 2 -Agricultural -Aquatic Life Warm 2 -Water Supply	**Rads:** -Pu = 0.15 pCi/l -Am = 0.15 pCi/l -All other rads: existing stds	Notification, source eval, mitigation if appro.	Terminal Pond Outfalls unless ponds gone; if ponds gone, TBD

(1) After active remediation, the concept of action levels in surface water no longer be necessary. All action levels will either be discontinued (MCLs) and/or convert to enforceable standards.

(2) Standards for Segment 4 and Segment 5 become identical when the period of active remediation is concluded.

SUMMARY ACTION LEVELS AND STANDARDS FRAMEWORK

OTHER MEDIA - During Active Remediation (Near-Term Site Condition)

Other Media	Tier I				Tier II			
	Action Level	Action	Cleanup Level	Point of Compliance	Action Level	Action	Cleanup Level	Point of Measurement
Ground Water	100 X MCLs[1] and protection of surf wtr and eco resources	Remedial or management action (accelerated)	Protective of surf wtr and eco resources	None; applies across RFETS	MCL[1]	Plume evaluation, plume mgmt if necessary	Protection of surf wtr and eco resources	In designated Tier II gnd wtr monitoring wells
Subsurface Soil	Protective of 100 X MCLs[1] in ground water	Source removal (accelerated)	Protective of 100 X MCLs[1] in ground water	None; applies across RFETS	Protection of surf wtr and eco resources.	Source eval, remediation/mgmt if appro.	Protection of surf wtr and eco resources.	Actual or predicted exceedances in surface water of surface water action levels or standards.
Surface Soil	10^{-4} carcinogenic risk for use scenarios OR 15 mrem/yr dose	Remediation (accelerated)	Protective of human health for use scenarios	None; applies across RFETS	10^{-4} carcinogenic risk and protection of surf wtr and eco resources.	Source eval, remediation/mgmt if appro.	Protection of human health, surf wtr, and eco resources	Human health: none; applies across RFETS. surf wtr: actual or predicted exceedances in surf wtr of surf wtr action levels or standards.

(1) For chemicals w/out an MCL, domestic use 10-6 "Programmatic Preliminary Remediation Goals" (PPRGs) will be used. The reason for this is that the PPRG is the closest to MCL derivation.

OTHER MEDIA - After Active Remediation (Intermediate and Long-Term Site Condition)

The Action Level and Standards Framework will continue in effect until the need for land and water use control is mitigated. When the Intermediate Site Condition is achieved, on-going monitoring and maintenance of RFETS will continue. Should monitoring identify some off-normal contaminant migration event, decisions about any necessary remediation will be made consistent with the Action Levels and Standards Framework.

2.0 SURFACE WATER

2.1 Some of the surface water quality standards and action levels proposed in this section differ from the existing state water quality standards (see Table 6). It will be necessary, therefore, to petition the Water Quality Control Commission (WQCC) for these changes. Petitions must provide sufficient rationale and justification to document that all water uses presented in the Vision will be protected, and will be supported by all parties. Once these changes to the water quality standards have been made, EPA will issue a new NPDES permit within six months of WQCC action. Local municipalities will be involved and consulted in surface water decisions.

Surface water exists in Areas 2, 3 and 4 on Figure 1, as well as immediately off-site. The standards, action levels and points of compliance presented below are based on the following refinement of the areas (this assumes current pond water-transfer configurations):

A. Area 2 (restricted open space) will include all surface water down to, and including, the terminal ponds (Ponds A-4 and B-5) in Walnut Creek. For Woman Creek, only Pond C-2 is in Area 2. Therefore, the surface water in Area 2 is consistent with Segment 5 of Big Dry Creek.

B. Areas 3 and 4 (restricted open space (Pu) and unrestricted open space) will include the streams from the terminal ponds to the plant boundary in Walnut Creek and all of Woman Creek except Pond C-2. The surface water in Areas 3 and 4 is part of Segment 4a/4b of Big Dry Creek.

2.2 Numeric Levels During Active Remediation (Near-Term Site Condition)
During the period of active remediation, the Table 1 values will apply as standards in Segment 4a/4b of Big Dry Creek and as action levels in Segment 5. This surface water framework reflects the current classifications set by the WQCC. Any future changes to the classifications made by the WQCC will be incorporated into this document.

A. Non-radionuclides

1. The numeric values that will apply throughout both stream segments are based on surface water use classifications consistent with the uses described in the RFCA Preamble:

   Water Supply
   Aquatic Life - Warm 2
   Recreation 2
   Agricultural

2. Numeric values will be derived from the following:

   a) Metals - the lower of either the Aquatic Life values listed in Table III of

the Basic Standards and Methodologies for Surface Water or the Segment Specific Water Quality standards apply.

b) Inorganics - Segment-Specific Water Quality standards apply, except for nitrate which will equal 100 mg/L (agricultural use value).

c) Any contamination in surface water resulting from releases from a unit at RFETS subject to RCRA interim status requirements will be addressed through this Action Levels and Standards Framework and through remedial actions rather than through RCRA closure (see Attachment 10 to RFCA, RCRA Closure for Interim Status Units). This would include surface water containing nitrates that has been impacted by the Solar Ponds ground water plume. Addressing the nitrates through this Framework will allow these waters to be managed in a more cost-effective and flexible manner. The parties recognize that changes in the management of nitrates may cause the surface water to more routinely approach the current 10 mg/L standard at the point of compliance unless and until the WQCC changes the nitrate standard to 100 mg/L.

d) Organic Chemicals:

1 - In Segment 4a/4b, water quality standards will apply in accordance with the use classifications identified in 2.2.A.1 above.

2 - In Segment 5, the organic chemical MCLs will apply (Table 1). Therefore, the underlying Segment 5 organic standards will not apply during the period of active remediation.

3. Temporary modifications to the numeric values during active remediation may be developed through subsequent working group efforts.

a) The basis for proposing the temporary modifications may include one or more of the following:

1 - A determination of ambient conditions in a manner similar to the existing Segment 5 temporary modifications;

2 - A mass-balance equation that calculates maximum influent concentrations in Segment 5 that will be protective of numeric values at Segment 4a/4b points of compliance without allowing treatment within waters of the State;

3 - Some other methodology agreed to by all parties.

b) These temporary modifications should be developed together with other stakeholders (i.e., the local municipalities that are impacted by surface water from the Site).

2.2 B. Radionuclides

1. Numeric values for plutonium and americium are risk-based (10^{-6} increased carcinogenic risks to human health from direct exposure including consumption). This is not consistent with the rest of the Framework which considers reasonably expected uses during active remediation. Drinking water supply is not expected for RFETS surface water during the period of active remediation.
2. The numeric values are:
   0.15 pCi/L for plutonium
   0.15 pCi/L for americium
3. If necessary, higher event-related and/or seasonal (limited duration) values for each drainage will be developed for plutonium and americium through subsequent working group efforts by June 1, 1996. The working group efforts will be focused on a statistical evaluation of existing baseflow and event data as well as on-site water management with the goal of minimizing off-site migration of plutonium and americium in surface water. Higher values should be developed together with other stakeholders (i.e., the local municipalities that are impacted by surface water from the Site). The working group will develop a process to actuate these higher numeric values. In addition, the Pond Operations Plan, which includes specific responses for identified circumstances and preserves dam safety, will guide specific decisions for the release of water.
4. Numeric values for other radionuclides will be the site-specific standards found in Table 2 of 5 CCR 1002-8, §3.8.0. The parties will re-examine these values based upon conditions in the basins and will propose alternative values if appropriate.

C. Points of Compliance/Action Level Measuring Points

1. In Segment 4a/4b, points of compliance will be placed at the existing sampling locations for the outfalls of the terminal ponds (Ponds A-4, B-5, and C-2) in both Walnut Creek and Woman Creek. Since all of Woman Creek is within Segment 4b and because of the complex water transfer configurations, additional points of compliance may need to be established by the parties.
2. In Segment 5, exceedance of action levels will be measured in the ponds and upstream in the main stream channel at existing gaging/sampling stations or at additional sampling sites in the main stream channel as necessary.
3. Compliance will be measured using a 30-day moving average for those

contaminants for which this is appropriate. When necessary to protect a particular use, acute and chronic levels will be measured differently as described in current sampling and analysis plans.

2.3 Standards After Active Remediation (Intermediate and Long-Term Site Condition)

When the Intermediate Site Condition is achieved following completion of active remediation, the surface water must be of sufficient quality to support any surface water use classification in both Segments 4a/4b and 5. Any temporary modifications will be removed. Points of compliance will be at the outfalls of the terminal ponds. However, all final remedies must be designed to protect surface water for any use as measured at the nearest and/or most directly impacted surface water in Segments 4a/4b and 5. Interim remedies will be consistent with this as a goal. If the terminal ponds are removed, new monitoring and compliance points will be designated and will consider groundwater in stream alluvium.

2.4 Action Determinations

A. When contaminant concentrations exceed the Table 1 standards at a point of compliance, source evaluation and mitigating action will be required. Specific remedial actions will be determined on a case-by-case basis, but must be designed such that surface water will meet applicable standards at the points of compliance. In the case of standards exceedances at a point of compliance, DOE will inform the CDPHE and EPA of such exceedances within 15 days of gaining knowledge of the exceedances. In addition, DOE will, within 30 days of gaining knowledge of the exceedances, submit to CDPHE and EPA a plan and schedule for source evaluation for the exceedance, including a preliminary plan and schedule for mitigating action. Final plans and schedules for mitigating actions will be developed and implemented by DOE, in consultation with CDPHE and EPA, following completion of the source evaluation. Nothing in this paragraph, however, shall preclude DOE from undertaking timely mitigation once a source has been identified. Once an initial notification, source evaluation, and mitigating action have been triggered for a particular exceedance, additional exceedances from the same source would not require separate notifications or additional source evaluations or mitigation.

B. During active remediation, when contaminant concentrations in Segment 5 exceed the Table 1 action levels, source evaluation will be required. If mitigating action is appropriate, the specific actions will be determined on a case-by-case basis, but must be designed such that surface water will meet applicable standards at the points of compliance. In the case of action level exceedances in Segment 5, DOE will inform the CDPHE and EPA of such exceedances within 15 days of gaining knowledge of

the exceedances. In addition, DOE will, within 30 days of gaining knowledge of the exceedances, submit to CDPHE and EPA a plan and schedule for source evaluation for the exceedance, including a preliminary plan and schedule for mitigating action. Final plans and schedules for mitigating actions will be developed and implemented by DOE, in consultation with CDPHE and EPA, following completion of the source evaluation. Nothing in this paragraph, however, shall preclude DOE from undertaking timely mitigation once a source has been identified. Once an initial notification, source evaluation, and mitigating action (if appropriate) have been triggered for a particular exceedance, additional exceedances from the same source would not require separate notifications or additional source evaluations or mitigation.

C. Exceedances of water quality standards at a point of compliance may be subject to civil penalties under sections 109 and 310(c) of CERCLA. In addition, failure of DOE to notify CDPHE and EPA of such exceedances, or to undertake source evaluations or mitigating actions as described in paragraph 2.4.A, above, shall be enforceable consistent with the terms of Part 16 of the RFCA.

D. Exceedances of action levels in Segment 5 shall not be subject to civil penalties. However, failure of DOE to notify CDPHE and EPA of such exceedances, or to undertake source evaluations or mitigating actions (if appropriate) as described in paragraph 2.4.B, above, shall be enforceable consistent with the terms of Part 16 of the RFCA.

2.5 Surface Water Monitoring

A. Surface water monitoring will continue as currently established unless subsequent changes are agreed to by all parties.

B. All parties will receive quarterly surface water monitoring reports which will highlight any exceedances of surface water standards or action levels and any significant changes to surface water flow conditions.

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3.0 GROUND WATER

3.1 Action levels for ground water must be protective of surface water standards and quality as well as the ecologic resources. Domestic use of ground water at RFETS will be prevented through institutional controls. Since no other human exposure to on-site ground water is foreseen, ground water action levels are based only on surface water protection. This framework for ground water action levels assumes that all contaminated ground water emerges to surface water before leaving the site.

3.2 Action Levels: The strategy for ground water is intended to prevent contamination of surface water. This protectiveness can be achieved by applying Maximum Contaminant Levels (MCLs) as ground water action levels. Where an MCL for a particular contaminant is lacking, the residential ground water ingestion-based PPRG value will apply.

A. Tier I - Near-Source Action Levels for Accelerated Actions:

1. Action levels = 100 x MCLs (see Table 2).
2. Applies in areas of high ground water contaminant concentrations.
3. Designed to identify high concentration ground water "sources" that should be addressed through an accelerated action.

B. Tier II - Surface Water Protection Action Levels:

1. Action levels = MCLs (see Table 2).
2. Designed to prevent surface water from exceeding surface water standards/action levels by triggering ground water management actions when necessary.
3. Situations where ground water is contaminating or could contaminate surface water at levels above surface water standards/action levels will trigger a Tier II action.
4. Tier II Action Levels are to be measured in designated wells:
   a) Tier II wells have been selected by all parties from the existing monitoring network where practical. New wells have been proposed where apparent gaps exist. Designated Tier II wells are listed in Table 3.
   b) Tier II wells are either currently uncontaminated or contaminated at levels less than MCLs. In general, Tier II wells are located between the downgradient edge of each plume and the surface water towards which the plume is most directly migrating.

c) If the proposed new wells are shown to be contaminated or if additional plume information dictates, new or alternate wells will need to be chosen.

3.3 Action Determinations

A. Tier I

1. If Tier 1 action levels are exceeded, an evaluation is required to determine if remedial or management action is necessary to prevent surface water from exceeding standards. If this evaluation determines that action is necessary, the type and location of the action will be delineated and implemented as an accelerated action. This evaluation may include a trend analysis based on existing data. Accelerated action priority will be given to plumes showing no significant decreasing trend in ground water contaminant concentrations over 2 years.
2. Additional ground water that does not exceed the Tier I action levels may still need to be remediated or managed through accelerated actions or RODs to protect surface water quality or ecological resources and/or prevent action level exceedances at Tier II wells (e.g., lower-level, but fast-moving contamination). The plume areas to be remediated and the cleanup levels or management techniques utilized will be determined on a case-by-case basis.

B. Tier II

1. If concentrations in a Tier II well exceed MCLs during a regular sampling event, monthly sampling in that well will be required. Three consecutive monthly samples showing contaminant concentrations greater than MCLs will trigger an evaluation. This will require a ground water remedial action, if modelling, which considers mass balancing and flux calculations and multiple source contributions, predicts that surface water action levels will be exceeded in surface water. These actions will be determined on a case-by-case basis and will be designed to treat, contain, manage, or mitigate the contaminant plume. Such actions will be incorporated into the ER Ranking in which they will be given weight according to measured or predicted impacts to surface water.
2. Ground water contaminated at levels above ground water action levels currently exists at several locations. Each of these situations will be addressed according to appropriate decision documents.
3. Any contamination in ground water resulting from releases from a unit at RFETS subject to RCRA interim status requirements will be addressed through this Action Levels and Standards Framework and through remedial actions rather than through RCRA closure (see Attachment 10 to RFCA, RCRA Closure

for Interim Status Units). This would include ground water containing nitrates from the Solar Ponds plume. Addressing the nitrates through this Framework will allow these waters to be managed in a more cost-effective and flexible manner.

C. Other Considerations

1. Efficient, cost-effective, and feasible actions that are taken to remediate or manage contaminated ground water may not necessarily be taken at the leading edge of plumes, but rather at a location within the plume. Factors contributing to this situation could include technical impracticability at the plume edge, topographic or ecologic problems at the plume edge, etc. This situation may result in a portion of a plume that will not be remediated or managed. This plume portion may cause exceedance of MCLs at Tier II wells or exceedance of surface water standards/action levels. When an up-gradient ground water action is taken that results in this situation, DOE and its subcontractor may request relief from the ground water and/or surface water standards. CDPHE and EPA will evaluate the request and may grant temporary relief or alternate concentration limits for a specific area. Soil or subsurface soil source removals will not be considered as the sole justification for alternate concentration limits. In addition, alternate concentration limits will be determined such that surface water use classifications are not jeopardized and surface water quality does not exceed standards at points of compliance.
2. Ground water plumes that can be shown to be stationary and do not therefore present a risk to surface water, regardless of their contaminant levels, will not require remediation or management. They will require continued monitoring to demonstrate that they remain stationary.

3.4 Ground Water Monitoring Network

A. The ground water monitoring network will continue to operate as recently modified unless subsequent changes are agreed to by all parties. Analyte suites, sampling frequency, and specific monitoring locations will be evaluated annually to adjust to changing hydrologic conditions including plume migration.

B. All groundwater monitoring data as well as changes in hydrologic conditions and exceedances of groundwater standards will be reported quarterly and summarized annually to all parties.

C. If quarterly reporting shows that previously uncontaminated wells are contaminated

above ground water standards, the sampling frequency will be increased to monthly. Three consecutive monthly samples showing exceedances will trigger an evaluation to determine if a remedial or management action is necessary.

D. All ground water plumes that exceed ground water standards must continue to be monitored until the need for institutional controls is mitigated.

E. All ground water remedies, as well as some soil remedies, will require ground water performance monitoring. The amount, frequency, and location of any performance monitoring will be based on the type of remedy implemented and will be determined on a case-by-case basis within decision documents.

3.5 Ground Water Classifications

A. Three classifications currently apply to ground water at RFETS:
   1. Domestic Use Quality
   2. Agricultural Use Quality
   3. Surface Water Protection

B. Because ground water use in all areas of the Site will be prevented, the domestic use and agricultural use classifications can be removed. Surface water protection standards for ground water are understood to be the applicable surface water standards.

4.0 SUBSURFACE SOIL

4.1 Subsurface soil is defined as soils deeper than six inches below the ground surface. Action levels for subsurface soil are protective of:

A. human exposure appropriate for the land uses delineated on Figure 1,
B. surface water standards via ground water transport, and
C. ecological resources.

4.2 Action Levels: The subsurface soil action levels have been calculated using a two-tier approach.

A. Tier I:

1. All subsurface soils capable of leaching contaminants to groundwater at concentrations greater than or equal to 100 x MCLs. Where an MCL for a particular contaminant is lacking, the residential ground water ingestion-based PPRG value will apply.
2. Contaminant-specific Tier I action levels for volatile organic contaminants have been determined using a soil/water partitioning equation and a dilution factor from EPA's Draft Soil Screening Guidance (1994). These derived values and the parameters used to derive them are listed in Table 4. The subsurface media characteristics for these calculations are based on site-specific data or conservative values where representative site values cannot be determined. Where subsurface characteristics in a particular area within RFETS differ significantly from those chosen as representative of the entire site, those alternate values should be used.
3. Table 4 also includes certain inorganic contaminants that may be of concern at RFETS. Contaminant-specific Tier I action levels for these targeted inorganic contaminants have not yet been included in Table 4, but are currently under development in a manner consistent with the action levels in 4.2.A.1 above. Table 4 will be updated to include these action levels as soon as they are developed.

B. Tier II:

Additional subsurface soil may need to be remediated or managed to protect surface water quality via ground water transport or ecological resources. Subsurface soil presenting unacceptable ecological risks ($HI \geq 1$) identified using the approved methodology will be evaluated for remediation or management.

4.3 Action Determinations

A. Tier I: When contaminant levels in subsurface soil exceed Tier I action levels, subsurface soil source removals will be triggered. These removals will be accomplished through accelerated actions.

B. Tier II: When an action is necessary to protect surface water or ecological resources, a process to identify, evaluate, and implement efficient, cost-effective, and feasible remediation or management actions will be triggered.

1. Actions will be developed in an integrated manner with other actions being taken.
2. Actions will be consistent with best management practices.
3. Actions may be accomplished by means of an interim or final action.
4. Remediation and/or management actions will be implemented to protect ecological resources where those actions can be implemented without damaging other ecological resources.

C. Appropriate remedial or management actions will be determined through this evaluation process on a case-by-case basis, and may include the removal, treatment, disposal, or in-place stabilization of contaminated subsurface soils.

D. Single geographically isolated data points of subsurface soil contamination above the Tier I or Tier II action levels will be evaluated for potential source magnitude. These single points will not necessarily trigger a source removal, remedial, or management action, depending on the source evaluation.

5.0 SURFACE SOIL

5.1 Surface soil will be defined as the upper six inches of soil. Action levels for surface soil are protective of:

A. human exposure appropriate for the land uses delineated on Figure 1,
B. surface water quality via runoff, and
C. ecological resources.

5.2 Action Levels: The surface soil action levels have been calculated using a two-tier approach based on protection of appropriate human exposure.

A. Tier I:

1. Action levels for non-radionuclides are human-health risk-based (carcinogenic risk equal to 10^{-4}) for the appropriate land-use receptor. Table 5 presents the calculated action levels for these exposure scenarios:

a) Industrial Use Area (Area 1 on Fig. 1): Action levels are based on Office Worker exposure as defined in the finalized PPRG document.
b) Restricted Open Space Area (Area 2 and 4 on Fig. 1): Action levels are based on Open Space Recreational User exposure as defined in the finalized PPRG document.

2. Action levels for radionuclides will be the more conservative of:

a) Radiation dose limit of 15 mrem per year for the appropriate land use receptor, or
b) Human-health risk (carcinogenic risk equal to 10^{-4}) to the appropriate land-use receptor as described in Section 5.2.A.1 above. The calculated values associated with these exposure scenarios are listed in Table 5.
c) The parties commit to expeditiously convene a working group to determine the derivation and application of the 15 mrem per year level as well as the derivation and potential application of the 75 mrem per year level.

B. Tier II:

1. Action levels for radionuclides and non-radionuclides are human-health risk-based (carcinogenic risk of 10^{-6} and/or a hazard index of 1) for the appropriate land-use receptor. Table 5 presents the calculated action levels for these exposure scenarios:

a) Industrial Use Area (Area 1 on Fig. 1): Action levels are based on Office Worker exposure as defined in the finalized PPRG document.
b) Restricted Open Space Area (Area 2 and 4 on Figure 1): Action levels are based on Open Space Recreational User exposure as defined in the finalized PPRG document.

2. Additional surface soil may need to be remediated or managed to protect surface water quality via runoff or ecological resources. The amount of soil and the protective remediation levels and/or management technique will be determined on a case-by-case basis. Subsurface soil presenting unacceptable ecological risks (a hazard index greater than or equal to 1) identified using the approved methodology will be evaluated for remediation or management.

5.3 Action Determinations:

A. Tier I: When contaminant levels in surface soil exceed Tier I action levels a process to identify, evaluate and implement efficient, cost-effective, and feasible remediation or management actions will be triggered. Appropriate remedial or management actions will be determined through this process on a case-by-case basis, and may include the removal, treatment, disposal, or in-place stabilization of contaminated surface soils.

B. Tier II: When contaminant levels in surface soil exceed Tier II action levels, they will be managed. Management may include, but is not limited to, "hotspot" removal, capping, or designating land uses that preclude unacceptable exposure. In addition, if aggregate risks at any source area exceed 10E-4, remedial action will be required.

1. Actions will be developed in an integrated manner with other actions being taken.
2. Actions will be consistent with best management practices.
3. Actions may be accomplished by means of an interim or final action.
4. Remediation and/or management actions will be implemented to protect ecological resources where those actions can be implemented without damaging other ecological resources.

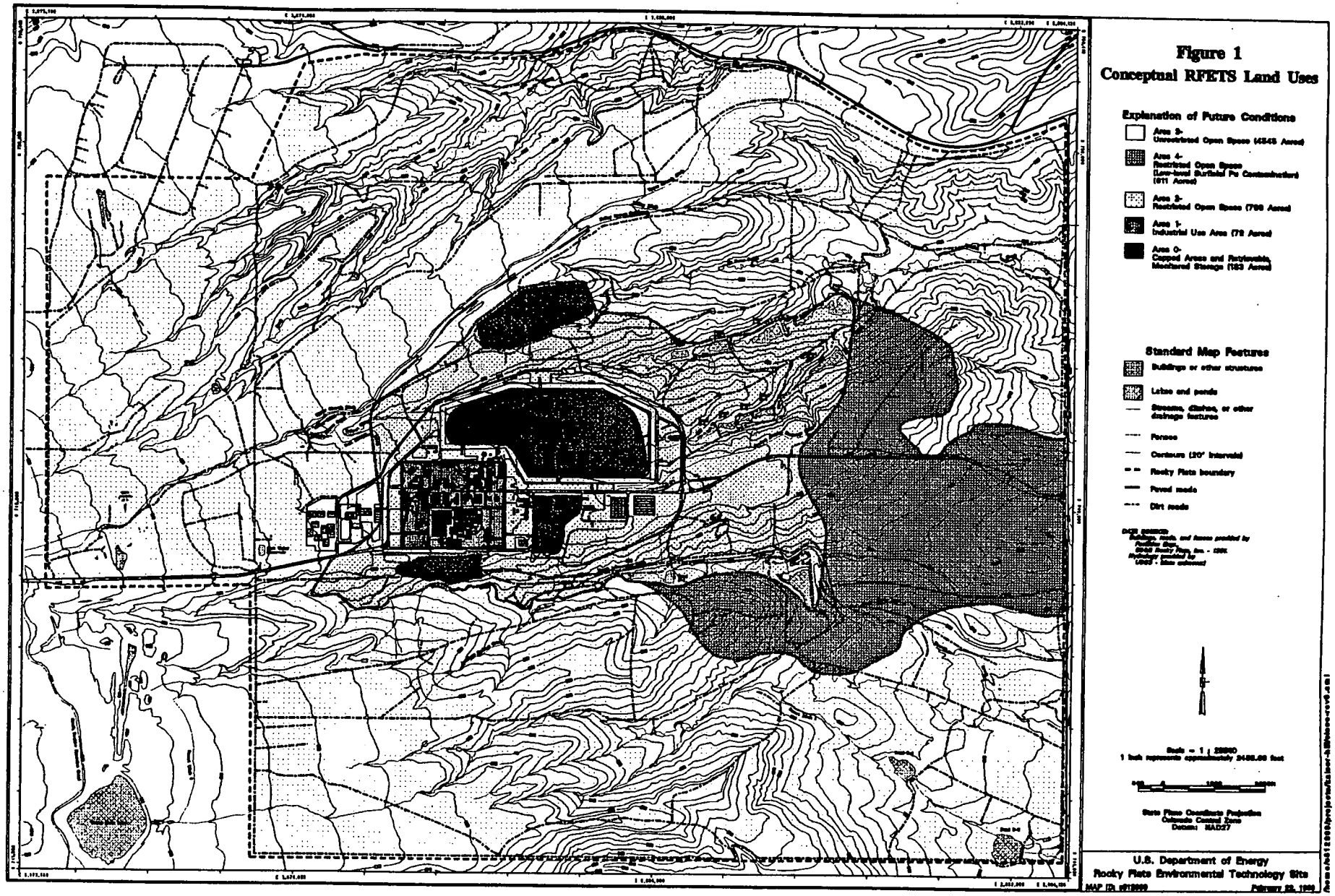
Figure 1
Conceptual RFETS Land Uses
Explanation of Future Conditions
Area 5-
Unrestricted Open Space (4545 Acres)
Area 4-
Restricted Open Space
(Low-level Surficial Pu Contamination)
(811 Acres)
Area 3-
Restricted Open Space (799 Acres)
Area 1-
Industrial Use Area (78 Acres)
Area 0-
Capped Areas and Retrievable
Monitored Storage (163 Acres)
Standard Map Features
Buildings or other structures
Lakes and ponds
Streams, ditches, or other
drainage features
Fences
Contours (20' Interval)
Rocky Flats boundary
Paved roads
Dirt roads
U.S. Department of Energy
Rocky Flats Environmental Technology Site

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Table1 - Surface Water Action Levels & Standards

Analyte	CAS No.	Segment 4a & 4b Standards (mg/L)	Basis for Standard	Segment 5 Action Levels (mg/L)	Basis for Action Level	PQLs (a) (mg/L)
Acenaphthene(V)	83-32-9	5.20E-01	AL	2.19E+00	PPRG	1.00E-02
Acenaphthylene(V)	208-96-8	2.80E-06	W+F	2.80E-06	SEG 4	1.00E-02
Acetone(V)	67-64-1	--		3.65E+00	PPRG	
Acrolein	107028	2.10E-02	AL	2.10E-02	SEG 4	1.00E-02
Acrylonitrile	107131	5.80E-05	W+F	5.80E-05	SEG 4	5.00E-03
Alachlor	15972608	2.00E-03	WS	2.00E-03	MCL	2.00E-03
Aldicarb	116063	1.00E-02	WS	1.00E-02	SEG 4	1.00E-02
Aldicarb sulfone	1646884	1.00E-03	WS	1.00E-03	SEG 4	3.00E-03
Aldicarb sulfoxide	1646873	4.00E-03	WS	4.00E-03	SEG 4	3.00E-03
Aldrin	309-00-2	1.30E-07	W+F	5.00E-06	PPRG	1.00E-04
Aluminum, dissolved	7429-90-5	8.70E-02	BS	8.70E-02	BS	
Ammonia, unionized	7664417	(b)	(b)	(b)	(b)	
Anthracene(V)	120-12-7	2.80E-06	W+F	1.09E+01	PPRG	1.00E-03
Antimony, total recoverable	7440-36-0	1.40E-02	BS	1.40E-02	BS	
Aroclor-1016	12674-11-2	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1221	11104-28-2	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1232	11141-16-5	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1242	53469-21-9	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1248	12672-29-6	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1254	11097-69-1	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Aroclor-1260	11096-82-5	4.40E-08	W+F	5.00E-04	MCL	1.00E-03
Arsenic, total recoverable	7440-38-2	5.00E-02	SS	5.00E-02	SS	
Atrazine	1912249	3.00E-03	WS	3.00E-03	MCL	1.00E-03
Barium, total recoverable	7440-39-3	1.00E+00	BS	1.00E+00	BS	
Benzene(V)	71-43-2	1.00E-03	BS	5.00E-03	MCL	1.00E-03
Benzidine	92875	1.20E-07	W+F	1.20E-07	SEG 4	7.00E-03
alpha-BHC	319-84-6	3.90E-06	W+F	1.35E-05	PPRG	5.00E-05
beta-BHC	319-85-7	1.40E-05	W+F	4.72E-05	PPRG	5.00E-05
gamma-BHC (Lindane)	58-89-9	1.90E-05	W+F	2.00E-04	MCL	5.00E-05
Benzo(a)anthracene	56-55-3	2.80E-06	SS	1.16E-04	PPRG	1.00E-02
Benzo(a)pyrene	50-32-8	2.80E-06	SS	2.00E-04	MCL	2.00E-04
Benzo(b)fluoranthene	205-99-2	2.80E-06	SS	2.80E-06	SEG 4	1.00E-02
Benzo(g,h,i)perylene	191-24-2	2.80E-06	SS	2.80E-06	SEG 4	1.00E-02
Benzo(k)fluoranthene	207-08-9	2.80E-06	SS	2.80E-06	SEG 4	1.00E-02
Beryllium, total recoverable	7440-41-7	4.00E-03	SS	4.00E-03	SS	
bis(2-Chloroethoxy)methane(V)	111-91-1	4.00E-03				
bis(2-Chloroethyl)ether(V)	111-44-4	3.00E-05	SS	1.65E-05	PPRG	1.00E-03
bis(2-Chloroisopropyl)ether(V)	108-60-1	1.40E-03	W+F	4.22E-04	PPRG	1.00E-02
bis(Chloromethyl)ether	107302	3.70E-09	SS	3.70E-09	SEG 4	
bis(2-Ethylhexyl)phthalate	117-81-7	1.80E-03	W+F	6.00E-03	MCL	1.00E-02
Boron, total	7440428	7.50E-01	SS	7.50E-01	SS	
Bromodichloromethane(V)	75-27-4	1.00E-01	BS (c)	1.00E-01	SEG 4	1.00E-03
Bromoform(V)	75-25-2	1.00E-01	BS (c)	1.00E-01	SEG 4	1.00E-03
Bromomethane(V)	74-83-9	4.80E-02		1.09E-02	PPRG	1.00E-03
2-Butanone(V)	78-93-3	--		2.47E+00	PPRG	
Butylbenzylphthalate	85-68-7	3.00E+00	W+F	3.00E+00	SEG 4	1.00E-02
Cadmium, dissolved	7440-43-9	1.50E-03	SS	1.50E-03	SS	
Carbofuran	1563662	3.60E-02	WS	4.00E-02	MCL	7.00E-03
Carbon disulfide(V)	75-15-0	--		2.76E-02	PPRG	
Carbon tetrachloride(V)	56-23-5	2.50E-04	W+F	5.00E-03	MCL	1.00E-03
Chlordane	5103-71-9	5.80E-07	W+F	2.00E-03	MCL	1.00E-03
Chloride	16887-00-6	2.50E+02	SS	2.50E+02	SEG 4	

Table1 - Surface Water Action Levels & Standards

Analyte	CAS No.	Segment 4a & 4b Standards (mg/L)	Basis for Standard	Segment 5 Action Levels (mg/L)	Basis for Action Level	PQLs (a) (mg/L)
Chlorobenzene(V)	108-90-7	1.00E-01	W+F	1.00E-01	MCL	5.00E-03
Chloroethane(V)	75-00-3	–		2.78E+01	PPRG	
Chloroform(V)	67-66-3	1.00E-01	BS (c)	1.00E-01	SEG 4	1.00E-03
Chloromethane(V)	74-87-3	5.70E-03	W+F	2.32E-03	PPRG	
4-Chloro-3-methylphenol	59-50-7	3.00E-04	AL	3.00E-04	SEG 4	5.00E-02
2-Chloronaphthalene(V)	91-58-7	6.20E-04	AL	2.92E+00	PPRG	
2-Chlorophenol(V)	95-57-8	2.00E-03	AL	1.82E-01	PPRG	5.00E-02
Chloropyrifos	2921882	4.10E-05	AL	4.10E-05	SEG 4	1.00E-03
Chromium III, Total Recoverable	7440-47-3	5.00E-02	SS	5.00E-02	SS	
Chromium VI, dissolved	7440-47-3	1.10E-02	SS	1.10E-02	SS	
Chrysene	218-01-9	2.80E-06	W+F	1.16E-02	PPRG	1.00E-02
Copper, dissolved	7440-50-8	1.60E-02	SS	1.60E-02	SS	
Cyanide	57-12-5	5.00E-03	SS	5.00E-03	SS	
4,4-DDD	72-54-8	8.30E-07	W+F	3.54E-04	PPRG	1.00E-04
4,4-DDE	72-55-9	5.90E-07	W+F	2.50E-04	PPRG	1.00E-04
4,4-DDT	50-29-3	5.90E-07	W+F	2.50E-04	PPRG	1.00E-04
Dalapon	75-99-0	2.00E-01	WS	2.00E-01	MCL	1.30E-02
Demeton	8065483	1.00E-04	AL	1.00E-04	SEG 4	
Dibenzo(a,h)anthracene	53-70-3	2.80E-06	W+F	1.16E-05	PPRG	1.00E-02
Dibromochloromethane	124-48-1	1.00E-01	BS (c)	1.01E-03	PPRG	1.00E-03
1,2-Dibromo-3-chloropropane	96-12-8	2.00E-04	WS	2.00E-04	MCL	5.00E-05
Di-n-butylphthalate	84-74-0	2.70E-03	W+F	3.65E+00	PPRG	1.00E-02
2,4-D	94-75-7	7.00E-02	WS	7.00E-02	MCL	1.00E-03
1,2-Dichlorobenzene(V)	95-50-1	6.20E-01	W+F, WS	6.00E-01	MCL	1.00E-03
1,3-Dichlorobenzene(V)	541-73-1	4.00E-01	W+F	6.00E-01	MCL	1.00E-03
1,4-Dichlorobenzene(V)	106-46-7	7.50E-02	W+F, WS	7.50E-02	MCL	1.00E-03
3,3-Dichlorobenzidine	91-94-1	3.90E-05	W+F	1.89E-04	PPRG	1.00E-02
1,1-Dichloroethane(V)	107-06-2	–		1.01E+00	PPRG	1.00E-03
1,2-Dichloroethane(V)	107-06-2	4.00E-04	W+F	5.00E-03	MCL	1.00E-03
1,1-Dichloroethene(V)	540-59-0	5.70E-05	W+F	7.00E-03	MCL	1.00E-03
1,2-Dichloroethene (total)(V)	540-59-0	7.00E-03	WS	7.00E-02	MCL	1.00E-03
2,4-Dichlorophenol	120-83-2	2.10E-02	W+F	1.10E-01	PPRG	5.00E-02
1,2-Dichloropropane(V)	78-87-5	5.60E-04	W+F	5.00E-03	MCL	1.00E-03
cis-1,3-Dichloropropene(V)	1006-01-5	–		1.27E-04	PPRG	1.00E-03
trans-1,3-Dichloropropene(V)	10061-02-6	–		1.27E-04	PPRG	1.00E-03
1,3-Dichloropropylene	542756	1.00E-02	W+F	1.00E-02	SEG 4	
Dieldrin	60-57-1	1.40E-07	W+F	5.31E-06	PPRG	1.00E-04
Di(2-ethylhexyl)adipate	103231	4.00E-01	WS	4.00E-01	MCL	6.00E-03
Di(2-ethylhexyl)phthalate	117817	6.00E-03	WS	6.00E-03	MCL	6.00E-03
Diethylphthalate	84-66-2	2.30E+01	W+F	2.92E+01	PPRG	1.00E-02
Diisopropyl methyl phosphonate	1445756	8.00E-03	WS	8.00E-03	SEG 4	1.00E-03
2,4-Dimethylphenol(V)	105-67-9	5.40E-01	W+F	7.30E-01	PPRG	5.00E-02
Dimethylphthalate	131-11-3	3.13E+02	W+F	3.65E+02	PPRG	1.00E-02
4,6-Dinitro-2-methylphenol(V)	534-52-1	1.30E-02	W+F	1.30E-02	SEG 4	
2,4-Dinitrophenol	51-28-5	1.40E-02	W+F, WS	7.30E-02	PPRG	5.00E-02
2,4-Dinitrotoluene	121-14-2	1.10E-03	W+F	7.30E-02	PPRG	1.00E-02
2,6-Dinitrotoluene	606-20-2	2.30E-01	W+F	1.25E-04	PPRG	1.00E-02
Dinoseb	88857	7.00E-03	WS	7.00E-03	MCL	2.00E-03
Dioxin	1746016	1.30E-11	W+F	3.00E-08	MCL	
1,2-Diphenylhydrazine	122667	4.00E-05	W+F	4.00E-05	SEG 4	
Diquat	65007	2.00E-02	WS	2.00E-02	MCL	4.00E-03
Endosulfan I	959-98-8	5.60E-05	AL	2.19E-01	PPRG	1.00E-04

Table1 - Surface Water Action Levels & Standards

Analyte	CAS No.	Segment 4a & 4b Standards (mg/L)	Basis for Standard	Segment 5 Action Levels (mg/L)	Basis for Action Level	PQLs (a) (mg/L)
Endosulfan II	33213-65-9	5.60E-05	AL	5.60E-05	SEG 4	1.00E-04
Endosulfan sulfate	1031-07-8	1.10E-01	W+F	2.19E-01	PPRG	1.00E-04
Endothall	145733	1.00E-01	WS	1.00E-01	MCL	9.00E-02
Endrin (technical)	72-26-8	2.30E-06		2.00E-03	MCL	1.00E-04
Endrin aldehyde	7421934	2.00E-04	W+F,WS	2.00E-04	SEG 4	1.00E-04
Ethylbenzene(V)	100-41-4	6.80E-01	W+F	7.00E-01	MCL	1.00E-02
Ethylene dibromide	106934	5.00E-05	WS	5.00E-05	MCL	
Fluoranthene	206-44-0	4.20E-02	SS	1.46E+00	PPRG	1.00E-02
Fluorene(V)	86-73-7	2.80E-06	SS	1.46E+00	PPRG	1.00E-02
Fluoride	16984-48-8	2.00E+00	BS	2.00E+00	SEG 4	
Glyphosate	1071-83-6	7.00E-01		7.00E-01	MCL	6.00E-02
Guthion	86500	1.00E-05	AL	1.00E-05	SEG 4	1.50E-03
Heptachlor	76-44-8	2.10E-07	W+F	4.00E-04	MCL	5.00E-05
Heptachlor epoxide	1024-57-3	1.00E-07	W+F	2.00E-04	MCL	5.00E-05
Hexachlorobenzene	118-74-1	7.50E-07	W+F	1.00E-03	MCL	1.00E-03
Hexachlorobutadiene	87-68-3	1.90E-03	W+F	1.90E-03	PPRG	1.00E-02
Hexachlorocyclohexane, Technical	608731	2.80E-06	W+F	2.80E-06	SEG 4	2.00E-04
Hexachlorocyclopentadiene	77-47-4	5.00E-02	AL	5.00E-02	MCL	1.00E-03
Hexachloroethane	67-72-1	1.90E-03	W+F	6.70E-03	PPRG	1.00E-02
Indeno(1,2,3-cd)pyrene	193-39-5	2.80E-06		1.16E-04	PPRG	1.00E-02
Iron, dissolved	7439-89-6	3.00E-01	SS	3.00E-01	SS	
Iron, total recoverable	7439-89-6	1.00E+00	SS	1.00E+00	SS	
Isophorone	78-59-1	3.60E-02	W+F	8.95E-02	PPRG	1.00E-02
Lead, dissolved	7439-92-1	6.50E-03	SS	6.50E+00	SS	
Malathion	121754	1.00E-04	AL	1.00E-04	SEG 4	2.00E-04
Manganese, dissolved	7439-96-5	5.00E-02	SS	5.00E-02	SS	
Manganese, total recoverable	7439-96-5	1.00E+00	SS	1.00E+00	SS	
Mercury, total	7439-97-6	1.00E-05	SS	1.00E-05	SS	
Methoxychlor	72-43-5	3.00E-05	W+F	4.00E-02	MCL	5.00E-04
Methylene chloride(V)	75-09-2	5.00E-03	W+F, WS	5.00E-03	MCL	
4-Methyl-2-pentanone(V)	108-10-1	--		2.03E-01	PPRG	
2-Methylphenol	95-48-7	--		1.83E+00	PPRG	
Mirex	2385855	1.00E-06	AL	1.00E-06	SEG 4	1.00E-04
Naphthalene(V)	91-20-3	2.80E-07	SS	1.46E+00	PPRG	1.00E-02
Nickel, dissolved	7440-02-0	1.23E-01	SS	1.23E-01	SS	
Nitrate	14797558	1.00E+01	SS (d)	1.00E+01	SS (d)	
Nitrite	14797650	5.00E-01	SS	5.00E-01	SS	
Nitrobenzene(V)	98-95-3	3.50E-03	W+F, WS	4.20E-03	PPRG	1.00E-02
Nitrosodibutylamine N		6.40E-06	W+F	6.40E-06	SEG 4	1.00E-02
Nitrosodiethylamine N		8.00E-07	W+F	8.00E-07	SEG 4	1.00E-02
Nitrosodimethylamine N	62759	6.90E-07	W+F	6.90E-07	SEG 4	1.00E-02
n-Nitrosodiphenylamine(V)	86-30-6	4.00E-03	W+F	1.73E-02	PPRG	1.00E-02
n-Nitrosodipropylamine	621-64-7	5.00E-06	W+F	1.21E-05	PPRG	1.00E-02
Nitrosopyrrolidine N		1.60E-05	W+F	1.60E-05	SEG 4	1.00E-02
Oxamyl(vydate)	23135220	2.00E-01	WS	2.00E-01	MCL	2.00E-02
Parathion	56382	4.00E-04	SS	4.00E-04	SEG 4	
Pentachlorobenzene	608935	6.00E-03	WS	6.00E-03	SEG 4	1.00E-02
Pentachlorophenol	87-86-5	2.80E-04	W+F	1.00E-03	MCL	1.00E-03
Phenanthrene(V)	85-01-8	2.80E-06	W+F	2.80E-06	SEG 4	1.00E-02
Phenol	108-95-2	2.56E+00	AL	2.19E+01	PPRG	5.00E-02
Picloram	1918021	5.00E-01	WS	5.00E-01	MCL	1.00E-03
Pyrene	129-00-0	2.80E-06	SS	1.10E+00	PPRG	1.00E-02

Table1 - Surface Water Action Levels & Standards

Analyte	CAS No.	Segment 4a & 4b Standards (mg/L)	Basis for Standard	Segment 5 Action Levels (mg/L)	Basis for Action Level	PQLs (a) (mg/L)
Selenium, Total Recoverable	7782-49-2	1.00E-02	SS	1.00E-02	SS	
Silver, dissolved	7440-22-4	6.00E-04	SS	6.00E-04	SS	
Simazine	122349	4.00E-03	WS	4.00E-03	MCL	7.00E-04
Sulfate	14808-79-8	2.50E+02	SS	2.50E+02	SEG 4	
Sulfide	18496258	2.00E-02	SS	2.00E-02	SS	
Styrene(V)	100-42-5	1.00E-01	WS	1.00E-01	MCL	5.00E-03
1,2,4,5-Tetrachlorobenzene	95953	2.00E-03	WS	2.00E-03	SEG 4	1.00E-02
1,1,2,2-Tetrachloroethane(V)	79-34-5	1.70E-04	W+F	8.95E-05	PPRG	1.00E-03
Tetrachloroethene(V)	127-18-4	8.00E-04	W+F	5.00E-03	MCL	1.00E-03
Toluene(V)	108-88-3	1.00E+00	W+F, WS	1.00E+00	MCL	5.00E-03
Toxaphene	8001-35-2	2.00E-07	AL	3.00E-03	MCL	3.00E-03
1,2,4-Trichlorobenzene(V)	120-82-1	5.00E-02	AL	7.00E-02	MCL	5.00E-03
1,1,1-Trichloroethane(V)	71-55-6	2.00E-01	W+F, WS	2.00E-01	MCL	5.00E-03
1,1,2-Trichloroethane(V)	79-00-5	6.00E-04	W+F	5.00E-03	MCL	1.00E-03
Trichloroethene(V)	79-01-6	2.70E-03	W+F	5.00E-03	MCL	1.00E-03
2,4,6-Trichlorophenol	88-06-2	2.00E-03	W+F, WS	7.73E-03	PPRG	5.00E-02
Trichlorophenoxyproprionic acid	93721	5.00E-02	WS	5.00E-02	SEG 4	5.00E-03
Vinyl chloride(V)	75-01-4	2.00E-03	W+F, WS	2.00E-03	MCL	2.00E-03
Xylene (total)(V)	1330-20-7	1.00E+01	WS	1.00E+01	MCL	5.00E-03
Zinc, dissolved	7440-66-6	1.41E-01	SS	1.41E-01	SS	
RADIOLOGIC PARAMETERS:		Woman Creek (pCi/L)		Walnut Creek (pCi/L)		
Americium 241, total	14596102	1.50E-01	SS	1.50E-01	SS	
Plutonium 239 and 240, total	10128	1.50E-01	SS	1.50E-01	SS	
Radium 226 and 228, total	13982633	5.00E+00	BS	5.00E+00	BS	
Strontium 90, total	11109	8.00E+00	BS	8.00E+00	BS	
Tritium	10028178	5.00E+02	SS	5.00E+02	SS	
Uranium, total	7440611	5.00E+00	SS	1.00E+01	SS	
Gross Alpha, total	14127629	7.00E+00	SS	1.10E+01	SS	
Gross Beta, total	12587472	5.00E+00	SS	1.90E+01	SS	

(a) Whenever the practical quantitation level (PQL) for a pollutant is higher (less stringent) than a standard/action level, "less than" the PQL shall be used as the compliance threshold. These less stringent PQLs are bolded.

(b) There is no unionized ammonia standard for Segment 5 or Segment 4b. A standard of 0.1 ug/L applies to Segment 4a which begins in Walnut Creek downstream of Indiana Street.

(c) Per the Basic Standards, the Total Trihalomethane (TTHM) standard applies to the sum of the four TTHM compounds.

(d) The Action Levels & Standards Framework anticipates that this value will be changed to 100 mg/L.

Metals standards which are based on a toxicity equation use a hardness value of 143 mg/L

ACRONYMS: AL = Aquatic Life; BS = Basic Standard; SS = Site Specific Standard; WS = Water Supply; W+F = Water plus Fish; MCL = Maximum Contaminant Level; PPRG = Preliminary Programmatic Remediation Goal; SEG 4 = organic value set equal to the Segment 4 standard where an MCL and PPRG are lacking; (V) = volatile chemical.

Table 2 - Ground Water Action Levels

Analyte	CAS No.	Tier 1- 100 x MCLs (mg/L)	Tier 2- MCLs (mg/L)
Acenaphthene(V)	83-32-9	***2.19E+02***	***2.19E+00***
Acetone(V)	67-64-1	***3.65E+02***	***3.65E+00***
Aldrin	309-00-2	***5.00E-04***	***5.00E-06***
Aluminum	7429-90-5	***1.06E+04***	***1.06E+02***
Anthracene(V)	120-12-7	***1.10E+03***	***1.10E+01***
Antimony	7440-36-0	6.00E-01	6.00E-03
Aroclor-1016	12674-11-2	5.00E-02	5.00E-04
Aroclor-1221	11104-28-2	5.00E-02	5.00E-04
Aroclor-1232	11141-16-5	5.00E-02	5.00E-04
Aroclor-1242	53469-21-9	5.00E-02	5.00E-04
Aroclor-1248	12672-29-6	5.00E-02	5.00E-04
Aroclor-1254	11097-69-1	5.00E-02	5.00E-04
Aroclor-1260	11096-82-5	5.00E-02	5.00E-04
Arsenic	7440-38-2	5.00E+00	5.00E-02
Barium	7440-39-3	2.00E+02	2.00E+00
Benzene(V)	71-43-2	5.00E-01	5.00E-03
alpha-BHC	319-84-6	***1.35E-03***	***1.35E-05***
beta-BHC	319-85-7	***4.72E-03***	***4.72E-05***
gamma-BHC (Lindane)	58-89-9	2.00E-02	2.00E-04
Benzo(a)anthracene	56-55-3	***1.16E-02***	***1.16E-04***
Benzo(a)pyrene	50-32-8	2.00E-02	2.00E-04
Benzo(b)fluoranthene	205-99-2	***1.16E-02***	***1.16E-04***
Benzo(k)fluoranthene	207-08-9	***1.16E-01***	***1.16E-03***
Benzoic Acid	65-85-0	***1.46E+04***	***1.46E+02***
Benzyl Alcohol	100-51-6	***1.10E+03***	***1.10E+01***
Beryllium	7440-41-7	4.00E-01	4.00E-03
bis(2-Chloroethyl)ether(V)	111-44-4	***1.63E-03***	***1.63E-05***
bis(2-Chloroisopropyl)ether(V)	108-60-1	***4.22E-02***	***4.22E-04***
bis(2-Ethylhexyl)phthalate	117-81-7	6.00E-01	6.00E-03
Bromodichloromethane(V)	75-27-4	1.00E+01	1.00E-01
Bromoform(V)	75-25-2	1.00E+01	1.00E-01
Bromomethane(V)	74-83-9	***1.09E+00***	***1.09E-02***
2-Butanone(V)	78-93-3	***2.47E+02***	***2.47E+00***
Butylbenzylphthalate	85-68-7	***7.30E+02***	***7.30E+00***
Cadmium	7440-43-9	5.00E-01	5.00E-03
Carbon disulfide(V)	75-15-0	***2.76E+00***	***2.76E-02***
Carbon tetrachloride(V)	56-23-5	5.00E-01	5.00E-03
alpha-Chlordane	5103-71-9	2.00E-01	2.00E-03
beta-Chlordane	5103-74-2	2.00E-01	2.00E-03
gamma-Chlordane	5103-74-2	2.00E-01	2.00E-03
4-Chloroaniline	106-47-8	***1.46E+01***	***1.46E-01***
Chlorobenzene(V)	108-90-7	1.00E+01	1.00E-01
Chloroethane(V)	75-00-3	***2.78E+03***	***2.78E+01***
Chloroform(V)	67-66-3	1.00E+01	1.00E-01
Chloromethane(V)	74-87-3	***2.32E-01***	***2.32E-03***
2-Chloronaphthalene(V)	91-58-7	***2.92E+02***	***2.92E+00***
2-Chlorophenol(V)	95-57-8	***1.83E+01***	***1.83E-01***
Chromium	7440-47-3	1.00E+01	1.00E-01
Chrysene	218-01-9	***1.16E+00***	***1.16E-02***
Cobalt	7440-48-4	***2.19E+02***	***2.19E+00***

Table 2 - Ground Water Action Levels

Analyte	CAS No.	Tier 1- 100 x MCLs (mg/L)	Tier 2- MCLs (mg/L)
Copper	7440-50-8	1.30E+02	1.30E+00
Cyanide	57-12-5	2.00E+01	2.00E-01
4,4-DDD	72-54-8	***3.54E-02***	***3.54E-04***
4,4-DDE	72-55-9	***2.50E-02***	***2.50E-04***
4,4-DDT	50-29-3	***2.50E-02***	***2.50E-04***
Dalapon	75-99-0	2.00E+01	2.00E-01
Dibenz(a,h)anthracene	53-70-3	***1.16E-03***	***1.16E-05***
Dibromochloromethane	124-48-1	***1.01E-01***	***1.01E-03***
1,2-Dibromo-3-chloropropane	96-12-8	2.00E-02	2.00E-04
Di-n-butylphthalate	84-74-0	***3.65E+02***	***3.65E+00***
2,4-D	94-75-7	7.00E+00	7.00E-02
1,2-Dichlorobenzene(V)	95-50-1	6.00E+01	6.00E-01
1,3-Dichlorobenzene(V)	541-73-1	6.00E+01	6.00E-01
1,4-Dichlorobenzene(V)	106-46-7	7.50E+00	7.50E-02
3,3-Dichlorobenzidine	91-94-1	***1.89E-02***	***1.89E-04***
1,1-Dichloroethane(V)	107-06-2	***1.01E+02***	***1.01E+00***
1,2-Dichloroethane(V)	107-06-2	5.00E-01	5.00E-03
1,1-Dichloroethene(V)	540-59-0	7.00E-01	7.00E-03
1,2-Dichloroethene (total)(V)	540-59-0	7.00E+00	7.00E-02
2,4-Dichlorophenol	120-83-2	***1.10E+01***	***1.10E-01***
1,2-Dichloropropane(V)	78-87-5	5.00E-01	5.00E-03
cis-1,3-Dichloropropene(V)	1006-01-5	***1.27E-02***	***1.27E-04***
trans-1,3-Dichloropropene(V)	10061-02-6	***1.27E-02***	***1.27E-04***
Dieldrin	60-57-1	***5.31E-04***	***5.31E-06***
Diethylphthalate	84-66-2	***2.92E+03***	***2.92E+01***
2,4-Dimethylphenol(V)	105-67-9	***7.30E+01***	***7.30E-01***
Dimethylphthalate	131-11-3	***3.65E+04***	***3.65E+02***
2,4-Dinitrophenol	51-28-5	***7.30E+00***	***7.30E-02***
2,4-Dinitrotoluene	121-14-2	***7.30E+00***	***7.30E-02***
2,6-Dinitrotoluene	606-20-2	***1.25E-02***	***1.25E-04***
Di-n-octylphthalate	117-84-0	***7.30E+01***	***7.30E-01***
Endosulfan I	959-98-8	***2.19E+01***	***2.19E-01***
Endosulfan II	33213-65-9	***2.19E+01***	***2.19E-01***
Endosulfan sulfate	1031-07-8	***2.19E+01***	***2.19E-01***
Endosulfan (technical)	115-29-7	***2.19E+01***	***2.19E-01***
Endrin (technical)	72-26-8	2.00E-01	2.00E-03
Ethylbenzene(V)	100-41-4	7.00E+01	7.00E-01
Fluoranthene	206-44-0	***1.46E+02***	***1.46E+00***
Fluorene(V)	86-73-7	***1.46E+02***	***1.46E+00***
Fluoride	16984-48-8	4.00E+02	4.00E+00
Glyphosate	1071-83-6	7.00E+01	7.00E-01
Heptachlor	76-44-8	4.00E-02	4.00E-04
Heptachlor epoxide	1024-57-3	2.00E-02	2.00E-04
Hexachlorobenzene	118-74-1	1.00E-01	1.00E-03
Hexachlorobutadiene	87-68-3	***1.09E-01***	***1.09E-03***
Hexachlorocyclopentadiene	77-47-4	5.00E+00	5.00E-02
Hexachloroethane	67-72-1	***6.07E-01***	***6.07E-03***
Indeno(1,2,3-cd)pyrene	193-39-5	***1.16E-02***	***1.16E-04***
Isophorone	78-59-1	***8.95E+00***	***8.95E-02***
Lithium	7439-93-2	***7.30E+01***	***7.30E-01***

Table 2 - Ground Water Action Levels

Analyte	CAS No.	Tier 1- 100 x MCLs (mg/L)	Tier 2- MCLs (mg/L)
Manganese	7439-96-5	***1.83E+01***	***1.83E-01***
Mercury	7439-97-6	2.00E-01	2.00E-03
Methoxychlor	72-43-5	4.00E+00	4.00E-02
Methylene chloride(V)	75-09-2	5.00E-01	5.00E-03
4-Methyl-2-pentanone(V)	108-10-1	***2.03E+01***	***2.03E-01***
2-Methylphenol	95-48-7	***1.83E+02***	***1.83E+00***
Molybdenum	7439-98-7	***1.83E+01***	***1.83E-01***
Naphthalene(V)	91-20-3	***1.46E+02***	***1.46E+00***
Nickel	7440-02-0	1.00E+01	1.00E-01
Nitrate (MCL as N)	1-005	1.00E+03	1.00E+01
Nitrite (MCL as N)	1-005	1.00E+02	1.00E+00
Nitrobenzene(V)	98-95-3	***4.20E-01***	***4.20E-03***
n-Nitrosodiphenylamine(V)	86-30-6	***1.73E+00***	***1.73E-02***
n-Nitrosodipropylamine	621-64-7	***1.21E-03***	***1.21E-05***
Pentachlorophenol	87-86-5	1.00E-01	1.00E-03
Phenol	108-95-2	***2.19E+03***	***2.19E+01***
Pyrene	129-00-0	***1.10E+02***	***1.10E+00***
Selenium	7782-49-2	5.00E+00	5.00E-02
Silver	7440-22-4	***1.83E+01***	***1.83E-01***
Strontium	7440-24-6	***2.19E+03***	***2.19E+01***
Styrene(V)	100-42-5	1.00E+01	1.00E-01
Sulfate	14808-79-8	5.00E+04*	5.00E+02*
1,1,2,2-Tetrachloroethane(V)	79-34-5	***8.95E-03***	***8.95E-05***
Tetrachloroethene(V)	127-18-4	5.00E-01	5.00E-03
Thallium	7440-28-0	2.00E-01	2.00E-03
Tin	7440-31-5	***2.19E+03***	***2.19E+01***
Toluene(V)	108-88-3	1.00E+02	1.00E+00
Toxaphene	8001-35-2	3.00E-01	3.00E-03
1,2,4-Trichlorobenzene(V)	120-82-1	7.00E+00	7.00E-02
1,1,1-Trichloroethane(V)	71-55-6	2.00E+01	2.00E-01
1,1,2-Trichloroethane(V)	79-00-5	5.00E-01	5.00E-03
Trichloroethene(V)	79-01-6	5.00E-01	5.00E-03
2,4,5-Trichlorophenol	95-95-4	5.00E+00	5.00E-02
2,4,6-Trichlorophenol	88-06-2	***7.73E-01***	***7.73E-03***
Vanadium	7440-62-2	***2.56E+01***	***2.56E-01***
Vinyl acetate	108-05-4	***3.65E+03***	***3.65E+01***
Vinyl chloride(V)	75-01-4	2.00E-01	2.00E-03
Xylene (total)(V)	1330-20-7	1.00E+03	1.00E+01
Zinc	7440-66-6	***1.10E+03***	***1.10E+01***

Analytes without an MCL value list the corresponding residential ground water ingestion Preliminary Programmatic Remediation Goal (PPRG) which is shown in bold italics.

Analytes without an MCL or a PPRG value are not listed.

(V) = Volatile chemicals

* Based on proposed MCL

Table 2 - Ground Water Action Levels

Analyte	CAS No.	Tier 1- 100 x MCLs (pCi/L)	Tier 2- MCLs (pCi/L)
RADIOLOGIC PARAMETERS:			
Americium-241	14596-10-2	***1.45E+01***	***1.45E-01***
Cesium-137+D	10045-97-3	***1.51E+02***	***1.51E+00***
Plutonium-239	10-12-8	***1.51E+01***	***1.51E-01***
Plutonium-240	10-12-8	***1.51E+01***	***1.51E-01***
Radium-226+D	13982-63-3	2.00E+03*	2.00E+01*
Radium-228+D	15262-20-1	2.00E+03*	2.00E+01*
Strontium-89	11-10-9	***4.62E+02***	***4.62E+00***
Strontium-90+D	11-10-9	***8.52E+01***	***8.52E-01***
Tritium	10028-17-8	***6.66E+04***	***6.66E+02***
Uranium-233+D	11-08-5	***2.98E+02***	***2.98E+00***
Uranium-234	11-08-5	***1.07E+02***	***1.07E+00***
Uranium-235+D	15117-96-1	***1.01E+02***	***1.01E+00***
Uranium-238+D	7440-61-1	***7.68E+01***	***7.68E-01***

D = Daughters

* Based on proposed MCL

RFCA
Attachment 5
March 14, 1996

TABLE 3

Tier II Ground Water Monitoring Wells for Volatile Organic Compounds

Location Code	
6586	
75992	
06091	
10194	
1986	
10994	
P314289	
P313589	
7086	
10992	
1786	
1386	
10692	
4087	
B206989	
New well	(upstream of 6586)
New well	(between ponds B-2 and B-3)
New well	(downgradient of Ryan's Pit near pond C-1)

(Intentionally left blank)

Table 4 - Tier I Subsurface Soil Action Levels

Analyte	CAS No.	Henry's Constant	Kd	Dilution Factor	Calculated Leachability at Tier I Ground Water Action Levels (mg/L)
Acenaphthene(V)	83-32-9	7.54E-03	14.21	7.8	***2.47E+04***
Acetone(V)	67-64-1	1.18E-03	0.80	7.8	***2.74E+03***
Aldrin	309-00-2	4.22E-03	114.25	7.8	***4.48E-01***
Aluminum	7429-90-5			7.8	***TBD***
Anthracene(V)	120-12-7	4.55E-03	8.81	7.8	***7.73E+04***
Antimony	7440-36-0			7.8	TBD
Aroclor-1016	12674-11-2	1.07E-03	241.87	7.8	9.48E+01
Aroclor-1221	11104-28-2	1.07E-03	1173.39	7.8	4.59E+02
Aroclor-1232	11141-16-5	1.07E-03	1173.39	7.8	4.59E+02
Aroclor-1242	53469-21-9	1.07E-03	1173.39	7.8	4.59E+02
Aroclor-1248	12672-29-6	1.07E-03	1173.39	7.8	4.59E+02
Aroclor-1254	11097-69-1	1.07E-03	1790.01	7.8	7.01E+02
Aroclor-1260	11096-82-5	1.07E-03	9746.45	7.8	3.82E+03
Arsenic	7440-38-2			7.8	TBD
Barium	7440-39-3			7.8	TBD
Benzene(V)	71-43-2	2.24E-01	1.88	7.8	8.08E+00
alpha-BHC	319-84-6	2.78E-04	7.11	7.8	***7.69E-02***
beta-BHC	319-85-7	1.42E-05	8.28	7.8	***3.12E-01***
gamma-BHC (Lindane)	58-89-9	1.39E-04	6.15	7.8	1.07E+00
Benzo(a)anthracene	56-55-3	1.48E-04	791.73	7.8	***7.19E+01***
Benzo(a)pyrene	50-32-8	3.43E-05	2022.64	7.8	3.17E+02
Benzo(b)fluoranthene	205-99-2	2.53E-04	1949.54	7.8	***1.77E+02***
Benzo(k)fluoranthene	207-08-9	3.94E-05	1217.44	7.8	***1.11E+03***
Benzoic Acid	65-85-0			7.8	***TBD***
Benzyl Alcohol	100-51-6			7.8	***TBD***
Beryllium	7440-41-7			7.8	TBD
bis(2-Chloroethyl)ether(V)	111-44-4	8.77E-04	1.46	7.8	***2.06E-02***
bis(2-Chloroisopropyl)ether(V)	108-60-1	1.13E-04	1.05	7.8	***4.01E-01***
bis(2-Ethylhexyl)phthalate	117-81-7	3.43E-04	197.76	7.8	9.32E+02
Bromodichloromethane(V)	75-27-4	1.30E-01	1.80	7.8	1.96E+02
Bromoform(V)	75-25-2	2.52E-02	1.59	7.8	1.79E+02
Bromomethane(V)	74-83-9	5.82E-01	1.22	7.8	***1.24E+01***
2-Butanone(V)	78-93-3			7.8	***TBD***
Butylbenzylphthalate	85-68-7	7.83E-05	79.05	7.8	***4.53E+05***
Cadmium	7440-43-9			7.8	TBD
Carbon disulfide(V)	75-15-0	5.21E-01	1.78	7.8	***4.32E+01***
Carbon tetrachloride(V)	56-23-5	1.18E+00	2.53	7.8	1.10E+01
alpha-Chlordane	5103-71-9	2.73E-03	120.00	7.8	1.89E+02
beta-Chlordane	5103-74-2	2.73E-03	120.00	7.8	1.89E+02
gamma-Chlordane	5103-74-2	2.73E-03	120.00	7.8	1.89E+02
4-Chloroaniline	106-47-8	4.80E-05	1.68	7.8	***2.10E+02***
Chlorobenzene(V)	108-90-7	4.80E-05	2.68	7.8	2.64E+02
Chloroethane(V)	75-00-3	8.48E-03	1.42	7.8	***3.45E+04***
Chloroform(V)	67-66-3	1.65E-01	1.76	7.8	1.52E+02
Chloromethane(V)	74-87-3	9.72E-02	1.13	7.8	***2.36E+00***
2-Chloronaphthalene(V)	91-58-7			7.8	***TBD***
2-Chlorophenol(V)	95-57-8	1.30E-05	1.18	7.8	***2.82E+02***
Chromium	7440-47-3			7.8	TBD
Chrysene	218-01-9	4.96E-05	693.95	7.8	***6.30E+03***
Cobalt	7440-48-4			7.8	***TBD***

Table 4 - Tier I Subsurface Soil Action Levels

Analyte	CAS No.	Henry's Constant	Kd	Dilution Factor	Calculated Leachability at Tier I Ground Water Action Levels (mg/L)
Copper	7440-50-8			7.8	TBD
Cyanide	57-12-5			7.8	TBD
4,4-DDD	72-54-8	7.96E-06	1701.84	7.8	***4.72E+02***
4,4-DDE	72-55-9	6.80E-05	9690.52	7.8	***1.90E+03***
4,4-DDT	50-29-3	5.13E-04	542.41	7.8	***1.06E+02***
Dalapon	75-99-0			7.8	TBD
Dibenzo(a,h)anthracene	53-70-3	4.59E-07	3979.74	7.8	***3.61E+01***
Dibromochloromethane	124-48-1			7.8	***TBD***
1,2-Dibromo-3-chloropropane	96-12-8			7.8	TBD
Di-n-butylphthalate	84-74-0	5.86E-05	7.54	7.8	***2.20E+03***
2,4-D	94-75-7			7.8	TBD
1,2-Dichlorobenzene(V)	95-50-1	8.61E-02	3.67	7.8	2.05E+03
1,3-Dichlorobenzene(V)	541-73-1			7.8	TBD
1,4-Dichlorobenzene(V)	106-46-7	1.15E-01	3.94	7.8	2.72E+02
3,3-Dichlorobenzidine	91-94-1	8.53E-07	8.35	7.8	***1.26E+00***
1,1-Dichloroethane(V)	107-06-2	7.54E-03	1.66	7.8	***1.44E+03***
1,2-Dichloroethane(V)	107-06-2	5.25E-02	1.45	7.8	6.33E+00
1,1-Dichloroethene(V)	540-59-0	1.04E+00	1.89	7.8	1.19E+01
1,2-Dichloroethene (total)(V)	540-59-0	2.29E-01	1.55	7.8	9.51E+00
2,4-Dichlorophenol	120-83-2	2.75E-06	3.16	7.8	***2.86E+02***
1,2-Dichloropropane(V)	78-87-5	1.15E-01	1.82	7.8	9.83E+00
cis-1,3-Dichloropropene(V)	1006-01-5	1.21E-01	1.58	7.8	***1.74E-01***
trans-1,3-Dichloropropene(V)	10061-02-6	1.21E-01	1.58	7.8	***1.74E-01***
Dieldrin	60-57-1	1.09E-04	29.44	7.8	***1.20E-01***
Diethylphthalate	84-66-2	2.24E-05	2.07	7.8	***5.10E+04***
2,4-Dimethylphenol(V)	105-67-9	6.00E-07	1.59	7.8	***1.00E+03***
Dimethylphthalate	131-11-3	2.37E-05	1.56	7.8	***4.91E+05***
2,4-Dinitrophenol	51-28-5	6.45E-10	1.42	7.8	***9.05E+01***
2,4-Dinitrotoluene	121-14-2	6.03E-06	1.78	7.8	***1.11E+02***
2,6-Dinitrotoluene	606-20-2	5.33E-06	1.69	7.8	***1.81E-01***
Di-n-octylphthalate	117-84-0	3.14E-05	2156204.19	7.8	***1.23E+09***
Endosulfan I	959-98-8	9.47E-04	4.50	7.8	***7.99E+02***
Endosulfan II	33213-65-9	9.47E-04	4.50	7.8	***7.99E+02***
Endosulfan sulfate	1031-07-8			7.8	***TBD***
Endosulfan (technical)	115-29-7	9.47E-04	4.50	7.8	***7.99E+02***
Endrin (technical)	72-26-8	4.88E-05	3.01	7.8	5.80E+00
Ethylbenzene(V)	100-41-4	3.18E-01	3.01	7.8	1.76E+03
Fluoranthene	206-44-0	3.83E-04	113.21	7.8	***1.30E+05***
Fluorene(V)	86-73-7	2.99E-03	21.22	7.8	***5.44E+04***
Fluoride	16984-48-8			7.8	TBD
Glyphosate	1071-83-6			7.8	TBD
Heptachlor	76-44-8	2.41E-02	20.05	7.8	6.50E+00
Heptachlor epoxide	1024-57-3	3.40E-04	20.51	7.8	3.32E+00
Hexachlorobenzene	118-74-1	2.19E-02	88.56	7.8	6.99E+01
Hexachlorobutadiene	87-68-3	9.80E-01	19.94	7.8	***1.73E+01***
Hexachlorocyclopentadiene	77-47-4	7.05E-01	25.96	7.8	1.04E+03
Hexachloroethane	67-72-1	1.48E-01	7.49	7.8	***3.64E+01***
Indeno(1,2,3-cd)pyrene	193-39-5	1.99E-07	9612.54	7.8	***8.73E+02***
Isophorone	78-59-1	2.54E-04	1.56	7.8	***1.20E+02***
Lithium	7439-93-2			7.8	***TBD***

Table 4 - Tier I Subsurface Soil Action Levels

Analyte	CAS No.	Henry's Constant	Kd	Dilution Factor	Calculated Leachability at Tier I Ground Water Action Levels (mg/L)
Manganese	7439-96-5			7.8	***TBD***
Mercury	7439-97-6			7.8	TBD
Methoxychlor	72-43-5	2.60E-04	175.69	7.8	**2.52E+04**
Methylene chloride(V)	75-09-2	9.70E-02	1.30	7.8	5.77E+00
4-Methyl-2-pentanone(V)	108-10-1	9.40E-05	1.28	7.8	***2.29E+02***
2-Methylphenol	95-48-7			7.8	***TBD***
Molybdenum	7439-98-7			7.8	***TBD***
Naphthalene(V)	91-20-3	1.98E-02	4.89	7.8	***5.77E+03***
Nickel	7440-02-0			7.8	TBD
Nitrate (MCL as N)	1-005			7.8	TBD
Nitrite (MCL as N)	1-005			7.8	TBD
Nitrobenzene(V)	98-95-3	8.45E-04	1.86	7.8	***6.63E+00***
n-Nitrosodiphenylamine(V)	86-30-6	2.86E-02	3.15	7.8	***4.49E+01***
n-Nitrosodipropylamine	621-64-7	1.70E-03	1.36	7.8	***1.44E-02***
Pentachlorophenol	87-86-5	2.75E-06	121.64	7.8	9.58E+01
Phenol	108-95-2	4.54E-07	1.40	7.8	***2.67E+04***
Pyrene	129-00-0	3.39E-04	154.99	7.8	***1.34E+05***
Selenium	7782-49-2			7.8	TBD
Silver	7440-22-4			7.8	***TBD***
Strontium	7440-24-6			7.8	***TBD***
Styrene(V)	100-42-5	1.37E-01	4.35	7.8	7.13E+03
Sulfate	14808-79-8			7.8	TBD
1,1,2,2-Tetrachloroethane(V)	79-34-5	1.53E-02	2.10	7.8	***1.58E-01***
Tetrachloroethene(V)	127-18-4	7.09E-01	2.70	7.8	1.15E+01
Thallium	7440-28-0			7.8	TBD
Tin	7440-31-5			7.8	***TBD***
Toluene(V)	108-88-3	2.52E-01	2.42	7.8	2.04E+03
Toxaphene	8001-35-2	1.38E-04	3.76	7.8	1.05E+01
1,2,4-Trichlorobenzene(V)	120-82-1	1.07E-01	6.87	7.8	**1.21E+03**
1,1,1-Trichloroethane(V)	71-55-6	7.63E-01	2.17	7.8	3.78E+02
1,1,2-Trichloroethane(V)	79-00-5	4.10E-02	1.90	7.8	**5.13E-01**
Trichloroethene(V)	79-01-6	4.35E-01	2.16	7.8	9.27E+00
2,4,5-Trichlorophenol	95-95-4	2.18E-04	3.34	7.8	1.00E+04
2,4,6-Trichlorophenol	88-06-2	3.90E-06	7.72	7.8	***4.77E+01***
Vanadium	7440-62-2			7.8	***TBD***
Vinyl acetate	108-05-4	2.26E-02	1.04	7.8	***3.45E+04***
Vinyl chloride(V)	75-01-4	3.45E+00	1.24	7.8	3.03E+00
Xylene (total)(V)	1330-20-7	2.48E-01	3.08	7.8	2.56E+04
Zinc	7440-66-6			7.8	***TBD***

Values for analytes without an MCL are calculated using the corresponding residential ground water ingestion Preliminary Programmatic Remediation Goal (PPRG) which is shown in bold italics. Analytes without an MCL or a PPRG value are not listed.
(V) = Volatile chemical

Table 4 - Tier I Subsurface Soil Action Levels

Analyte	CAS No.	Henry's Constant	Kd	Dilution Factor	Calculated Leachability at Tier I Ground Water Action Levels (pCi/L)
RADIOLOGIC PARAMETERS:					
Americium-241	14596-10-2				*TBD*
Cesium-137+D	10045-97-3				*TBD*
Plutonium-239	10-12-8				*TBD*
Plutonium-240	10-12-8				*TBD*
Radium-226+D	13982-63-3				TBD
Radium-228+D	15262-20-1				TBD
Strontium-89	11-10-9				*TBD*
Strontium-90+D	11-10-9				*TBD*
Tritium	10028-17-8				*TBD*
Uranium-233+D	11-08-5				*TBD*
Uranium-234	11-08-5				*TBD*
Uranium-235+D	15117-96-1				*TBD*
Uranium-238+D	7440-61-1				*TBD*

D = Daughters

Table 5 - Surface Soil Action Levels

Analyte	CAS Number	Tier I (10E-4) Office Worker Soil (mg/kg)	Tier I (10E-4) Open Space Soil/Sediment (mg/kg)		Tier II (10E-6) Office Worker Soil (mg/kg)	Tier II (10E-6) Open Space Soil/Sediment (mg/kg)
Acenaphthene (V)	83-32-9	1.23E+07	4.61E+07		1.23E+05	4.61E+05
Acetone (V)	67-64-1	2.04E+07	7.68E+07		2.04E+05	7.68E+05
Aldrin	309-00-2	3.36E+01	1.03E+02		3.36E-01	1.03E+00
Aluminum	7429-90-5	5.93E+08	2.23E+09		5.93E+06	2.23E+07
Anthracene (V)	120-12-7	6.13E+07	2.30E+08		6.13E+05	2.30E+06
Antimony	7440-36-0	8.18E+04	3.07E+05		8.18E+02	3.07E+03
Aroclor-1016	12674-11-2	1.43E+04	5.38E+04		1.43E+02	5.38E+02
Aroclor-1221	11104-28-2	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Aroclor-1232	11141-16-5	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Aroclor-1242	53469-21-9	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Aroclor-1248	12672-29-6	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Aroclor-1254	11097-69-1	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Aroclor-1260	11096-82-5	7.43E+01	2.32E+02		7.43E-01	2.32E+00
Arsenic	7440-38-2	3.27E+02	1.00E+03		3.27E+00	1.00E+01
Barium	7440-39-3	1.41E+07	5.35E+07		1.41E+05	5.35E+05
Benzene (V)	71-43-2	1.97E+04	6.17E+04		1.97E+02	6.17E+02
alpha-BHC	319-84-6	9.08E+01	2.78E+02		9.08E-01	2.78E+00
beta-BHC	319-85-7	3.18E+02	9.75E+02		3.18E+00	9.75E+00
gamma-BHC (Lindane)	58-89-9	4.40E+02	1.38E+03		4.40E+00	1.38E+01
Benzo(a)anthracene	56-55-3	7.84E+02	2.45E+03		7.84E+00	2.45E+01
Benzo(a)pyrene	50-32-8	7.84E+01	2.45E+02		7.84E-01	2.45E+00
Benzo(b)fluoranthene	205-99-2	7.84E+02	2.45E+03		7.84E+00	2.45E+01
Benzo(k)fluoranthene	207-08-9	7.84E+03	2.45E+04		7.84E+01	2.45E+02
Benzoic Acid	65-85-0	8.18E+08	3.07E+09		8.18E+06	3.07E+07
Benzyl Alcohol	100-51-6	6.13E+07	2.30E+08		6.13E+05	2.30E+06
Beryllium	7440-41-7	1.33E+02	4.08E+02		1.33E+00	4.08E+00
bis(2-Chloroethyl)ether (V)	111-44-4	5.20E+02	1.63E+03		5.20E+00	1.63E+01
bis(2-Chloroisopropyl)ether (V)	108-60-1	8.17E+03	2.56E+04		8.17E+01	2.56E+02
bis(2-Ethylhexyl)phthalate	117-81-7	4.09E+04	1.28E+05		4.09E+02	1.28E+03
Bromodichloromethane (V)	75-27-4	9.23E+03	2.89E+04		9.23E+01	2.89E+02
Bromoform (V)	75-25-2	7.24E+04	2.27E+05		7.24E+02	2.27E+03
Bromomethane (V)	74-83-9	2.86E+05	1.08E+06		2.86E+03	1.08E+04
2-Butanone (V)	78-93-3	1.23E+08	4.61E+08		1.23E+06	4.61E+06
Butylbenzylphthalate	85-68-7	4.09E+07	1.54E+08		4.09E+05	1.54E+06
Cadmium	7440-43-9	1.02E+05	3.84E+05		1.02E+03	3.84E+03
Carbon disulfide (V)	75-15-0	2.04E+07	7.68E+07		2.04E+05	7.68E+05
Carbon tetrachloride (V)	56-23-5	4.40E+03	1.38E+04		4.40E+01	1.38E+02
alpha-Chlordane	5103-71-9	4.40E+02	1.35E+03		4.40E+00	1.35E+01
beta-Chlordane	5103-74-2	4.40E+02	1.35E+03		4.40E+00	1.35E+01
gamma-Chlordane	5103-74-2	4.40E+02	1.35E+03		4.40E+00	1.35E+01
4-Chloroaniline	106-47-8	8.18E+05	3.07E+06		8.18E+03	3.07E+04
Chlorobenzene (V)	108-90-7	4.09E+06	1.54E+07		4.09E+04	1.54E+05
Chloroform (V)	67-66-3	9.38E+04	2.93E+05		9.38E+02	2.93E+03
Chloromethane (V)	74-87-3	4.40E+04	1.38E+05		4.40E+02	1.38E+03
2-Chloronaphthalene (V)	91-58-7	1.64E+07	6.14E+07		1.64E+05	6.14E+05
2-Chlorophenol (V)	95-57-8	1.02E+06	3.84E+06		1.02E+04	3.84E+04
Chromium III	7440-47-3	2.04E+08	7.68E+08		2.04E+06	7.68E+06
Chromium VI	7440-47-3	4.86E+05	3.67E+06		4.86E+03	3.67E+04
Chrysene	218-01-9	7.84E+04	2.45E+05		7.84E+02	2.45E+03

Table 5 - Surface Soil Action Levels

Analyte	CAS Number	Tier I (10E-4) Office Worker Soil (mg/kg)	Tier I (10E-4) Open Space Soil/Sediment (mg/kg)	Tier II (10E-6) Office Worker Soil (mg/kg)	Tier II (10E-6) Open Space Soil/Sediment (mg/kg)
Cobalt	7440-48-4	1.23E+07	4.61E+07	1.23E+05	4.61E+05
Copper	7440-50-8	8.18E+06	3.07E+07	8.18E+04	3.07E+05
Cyanide	57-12-5	4.09E+06	1.54E+07	4.09E+04	1.54E+05
4,4-DDD	72-54-8	2.38E+03	7.46E+03	2.38E+01	7.46E+01
4,4-DDE	72-55-9	1.68E+03	5.26E+03	1.68E+01	5.26E+01
4,4-DDT	50-29-3	1.68E+03	5.16E+03	1.68E+01	5.16E+01
Dibenz(a,h)anthracene	53-70-3	7.84E+01	2.45E+02	7.84E-01	2.45E+00
Dibromochloromethane	124-48-1	6.81E+03	2.13E+04	6.81E+01	2.13E+02
Di-n-butylphthalate	84-74-0	2.04E+07	7.68E+07	2.04E+05	7.68E+05
1,2-Dichlorobenzene (V)	95-50-1	1.84E+07	6.91E+07	1.84E+05	6.91E+05
1,4-Dichlorobenzene (V)	106-46-7	2.38E+04	7.46E+04	2.38E+02	7.46E+02
3,3-Dichlorobenzidine	91-94-1	1.27E+03	3.98E+03	1.27E+01	3.98E+01
1,1-Dichloroethane (V)	107-06-2	2.04E+07	7.68E+07	2.04E+05	7.68E+05
1,2-Dichloroethane (V)	107-06-2	6.29E+03	1.97E+04	6.29E+01	1.97E+02
1,1-Dichloroethene (V)	540-59-0	9.53E+02	2.98E+03	9.53E+00	2.98E+01
1,2-Dichloroethene (total) (V)	540-59-0	1.84E+06	6.91E+06	1.84E+04	6.91E+04
2,4-Dichlorophenol	120-83-2	6.13E+05	2.30E+06	6.13E+03	2.30E+04
1,2-Dichloropropane (V)	78-87-5	8.41E+03	2.63E+04	8.41E+01	2.63E+02
cis-1,3-Dichloropropene (V)	1006-01-5	3.18E+03	9.94E+03	3.18E+01	9.94E+01
trans-1,3-Dichloropropene (V)	10061-02-6	3.18E+03	9.94E+03	3.18E+01	9.94E+01
Dieldrin	60-57-1	3.57E+01	1.10E+02	3.57E-01	1.10E+00
Diethylphthalate	84-66-2	1.64E+08	6.14E+08	1.64E+06	6.14E+06
2,4-Dimethylphenol (V)	105-67-9	4.09E+06	1.54E+07	4.09E+04	1.54E+05
Dimethylphthalate	131-11-3	2.04E+09	7.68E+09	2.04E+07	7.68E+07
2,4-Dinitrophenol	51-28-5	4.09E+05	1.54E+06	4.09E+03	1.54E+04
2,4-Dinitrotoluene	121-14-2	4.09E+05	1.54E+06	4.09E+03	1.54E+04
2,6-Dinitrotoluene	606-20-2	8.41E+02	2.63E+03	8.41E+00	2.63E+01
Di-n-octylphthalate	117-84-0	4.09E+06	1.28E+05	4.09E+04	1.28E+03
Endosulfan I	959-98-8	1.23E+06	4.61E+06	1.23E+04	4.61E+04
Endosulfan II	33213-65-9	1.23E+06	4.61E+06	1.23E+04	4.61E+04
Endosulfan sulfate	1031-07-8	1.23E+06	4.61E+06	1.23E+04	4.61E+04
Endosulfan (technical)	115-29-7	1.23E+06	4.61E+06	1.23E+04	4.61E+04
Endrin (technical)	72-26-8	6.13E+04	2.30E+05	6.13E+02	2.30E+03
Ethylbenzene (V)	100-41-4	2.04E+07	7.68E+07	2.04E+05	7.68E+05
Fluoranthene	206-44-0	8.18E+06	3.07E+07	8.18E+04	3.07E+05
Fluorene (V)	86-73-7	8.18E+06	3.07E+07	8.18E+04	3.07E+05
Heptachlor	76-44-8	1.27E+02	3.90E+02	1.27E+00	3.90E+00
Heptachlor epoxide	1024-57-3	6.29E+01	1.93E+02	6.29E-01	1.93E+00
Hexachlorobenzene	118-74-1	3.57E+02	1.10E+03	3.57E+00	1.10E+01
Hexachlorobutadiene	87-68-3	7.33E+03	2.25E+04	7.33E+01	2.25E+02
Hexachlorocyclopentadiene	77-47-4	1.42E+06	5.36E+06	1.42E+04	5.36E+04
Hexachloroethane	67-72-1	4.09E+04	1.25E+05	4.09E+02	1.25E+03
Indeno(1,2,3-cd)pyrene	193-39-5	7.84E+02	2.45E+03	7.84E+00	2.45E+01
Isophorone	78-59-1	6.02E+05	1.88E+06	6.02E+03	1.88E+04
Lithium	7439-93-2	4.09E+06	1.54E+07	4.09E+04	1.54E+05
Manganese	7439-96-5	1.01E+06	3.83E+06	1.01E+04	3.83E+04
Mercury	7439-97-6	6.13E+04	2.31E+05	6.13E+02	2.31E+03
Methoxychlor	72-43-5	1.02E+06	3.84E+06	1.02E+04	3.84E+04
Methylene chloride (V)	75-09-2	7.63E+04	2.39E+05	7.63E+02	2.39E+03

Table 5 - Surface Soil Action Levels

Analyte	CAS Number	Tier I (10E-4) Office Worker Soil (mg/kg)	Tier I (10E-4) Open Space Soil/Sediment (mg/kg)		Tier II (10E-6) Office Worker Soil (mg/kg)	Tier II (10E-6) Open Space Soil/Sediment (mg/kg)
4-Methyl-2-pentanone (V)	108-10-1	1.64E+07	6.14E+07		1.64E+05	6.14E+05
2-Methylphenol	95-48-7	1.02E+07	3.84E+07		1.02E+05	3.84E+05
Molybdenum	7439-98-7	1.02E+06	3.84E+06		1.02E+04	3.84E+04
Naphthalene (V)	91-20-3	8.18E+06	3.07E+07		8.18E+04	3.07E+05
Nickel	7440-02-0	4.09E+06	1.54E+07		4.09E+04	1.54E+05
Nitrobenzene (V)	98-95-3	1.02E+05	3.84E+05		1.02E+03	3.84E+03
n-Nitrosodiphenylamine (V)	86-30-6	1.17E+05	3.65E+05		1.17E+03	3.65E+03
n-Nitrosodipropylamine	621-64-7	8.17E+01	2.56E+02		8.17E-01	2.56E+00
Pentachlorophenol	87-86-5	4.77E+03	1.49E+04		4.77E+01	1.49E+02
Phenol	108-95-2	1.23E+08	4.61E+08		1.23E+06	4.61E+06
Pyrene	129-00-0	6.13E+06	2.30E+07		6.13E+04	2.30E+05
Selenium	7782-49-2	1.02E+06	3.84E+06		1.02E+04	3.84E+04
Silver	7440-22-4	1.02E+06	3.84E+06		1.02E+04	3.84E+04
Strontium	7440-24-6	1.23E+08	4.61E+08		1.23E+06	4.61E+06
Styrene (V)	100-42-5	4.09E+07	1.54E+08		4.09E+05	1.54E+06
1,1,2,2-Tetrachloroethane (V)	79-34-5	2.86E+03	8.95E+03		2.86E+01	8.95E+01
Tetrachloroethene (V)	127-18-4	1.10E+04	3.44E+04		1.10E+02	3.44E+02
Tin	7440-31-5	1.23E+08	4.61E+08		1.23E+06	4.61E+06
Toluene (V)	108-88-3	4.09E+07	1.54E+08		4.09E+05	1.54E+06
Toxaphene	8001-35-2	5.20E+02	1.59E+03		5.20E+00	1.59E+01
1,2,4-Trichlorobenzene (V)	120-82-1	2.04E+06	7.68E+06		2.04E+04	7.68E+04
1,1,2-Trichloroethane (V)	79-00-5	1.00E+04	3.14E+04		1.00E+02	3.14E+02
Trichloroethene (V)	79-01-6	5.20E+04	1.63E+05		5.20E+02	1.63E+03
2,4,5-Trichlorophenol	95-95-4	2.04E+07	7.68E+07		2.04E+05	7.68E+05
2,4,6-Trichlorophenol	88-06-2	5.20E+04	1.59E+05		5.20E+02	1.59E+03
Vanadium	7440-62-2	1.43E+06	5.38E+06		1.43E+04	5.38E+04
Vinyl acetate	108-05-4	2.04E+08	7.68E+08		2.04E+06	7.68E+06
Vinyl chloride (V)	75-01-4	3.01E+02	9.42E+02		3.01E+00	9.42E+00
Xylene (total) (V)	1330-20-7	4.09E+08	1.54E+09		4.09E+06	1.54E+07
Zinc	7440-66-6	6.13E+07	2.30E+08		6.13E+05	2.30E+06
Nitrate	1-005	3.27E+08	1.23E+09		3.27E+06	1.23E+07
Nitrite	1-005	2.04E+07	7.68E+07		2.04E+05	7.68E+05
Fluoride	16984-48-8	1.23E+07	4.61E+07		1.23E+05	4.61E+05

Values are based on PPRG calculations for the specified exposure scenario. All toxicity values used in calculations are from IRIS, from HEAST, or are approved by the EAOC. Analytes without PPRGs are not listed.
(V) = Volatile chemical

Table 5 - Surface Soil Action Levels

Analyte	CAS Number	Tier I				Tier II (10E-6)	
		Office Worker - Soil		Open Space - Soil/Sediment		Office Worker Soil (pCi/g)	Open Space Soil/Sediment (pCi/g)
		10E-4 Risk (pCi/g)	15 mrem Dose (pCi/g)	10E-4 Risk (pCi/g)	15 mrem Dose (pCi/g)		
RADIOLOGIC PARAMETERS:							
Americium-241	14596-10-2	7.67E+02	TBD	2.36E+03	TBD	7.67E+00	2.36E+01
Cesium-137+D	10045-97-3	7.97E+00	TBD	7.97E+00	TBD	7.97E-02	7.97E-02
Plutonium-239	10-12-8	1.01E+03	TBD	6.98E+03	TBD	1.01E+01	6.98E+01
Plutonium-240	10-12-8	1.01E+03	TBD	6.98E+03	TBD	1.01E+01	6.98E+01
Radium-226+D	13982-63-3	2.47E+00	TBD	2.47E+00	TBD	2.47E-02	2.47E-02
Radium-228+D	15262-20-1	5.06E+00	TBD	5.08E+00	TBD	5.06E-02	5.08E-02
Strontium-89	11-10-9	1.55E+04	TBD	2.71E+04	TBD	1.55E+02	2.71E+02
Strontium-90+D	11-10-9	5.72E+03	TBD	3.98E+04	TBD	5.72E+01	3.98E+02
Tritium	10028-17-8	4.48E+06	TBD	3.11E+07	TBD	4.48E+04	3.11E+05
Uranium-233+D	11-08-5	1.82E+04	TBD	9.97E+04	TBD	1.82E+02	9.97E+02
Uranium-234	11-08-5	7.08E+03	TBD	4.67E+04	TBD	7.08E+01	4.67E+02
Uranium-235+D	15117-96-1	6.23E+01	TBD	6.28E+01	TBD	6.23E-01	6.28E-01
Uranium-238+D	7440-61-1	2.99E+02	TBD	3.15E+02	TBD	2.99E+00	3.15E+00

D = daughters

TBD = To be determined by Working Group

RFCA
Attachment 5
March 14, 1996

TABLE 6

Recommended Changes Requiring Action by the Colorado Water Quality Control Commission

as a result of the

Action Levels and Standards Framework for Rocky Flats Environmental Technology Site

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1. Remove Domestic Use and Agricultural Use classifications from groundwater, but leave the Surface Water Protection classification in place.

2. Make the standards that result from the Surface Water Protection classification for ground water equivalent to the surface water standards.

3. Change the nitrate standard on the Walnut Creek portion of Segment 4 to 100 mg/L (which equals the Agricultural Use standard) for the duration of active remediation.

4. Change both the site-specific and the state-wide surface water standards for plutonium and americium from 0.05 pCi/L to 0.15 pCi/L.

5. Develop appropriate site-specific uranium standards.

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ATTACHMENT 6

NO ACTION/NO FURTHER ACTION/NO FURTHER REMEDIAL ACTION (NFA)
DECISION CRITERIA FOR
ROCKY FLATS ENVIRONMENTAL TECHONOLGY SITE

NO ACTION/NO FURTHER ACTION/NO FURTHER REMEDIAL ACTION (NFA) DECISION CRITERIA FOR ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Rocky Mountain Remediation Services, L. L. C.
P.O. Box 464
Golden, Colorado 80402-0464

February 29, 1996

TABLE OF CONTENTS

LIST OF ACRONYMS AND INITIALISMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BRA	Baseline Risk Assessment
CAD/ROD	Corrective Action Decision/Record of Decision
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CHWA	Colorado Hazardous Waste Act
CHWR	Colorado Hazardous Waste Regulation
COC	Chemical of Concern
DOE	Department of Energy
ECOC	Ecological Chemical of Concern
EPA	Environmental Protection Agency
ERA	Ecological Risk Assessment
ERAM	Ecological Risk Assessment Methodology
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HRR	Historical Release Report
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM/IRA	Interim Measure/ Interim Remedial Action
NCP	National Contingency Plan
NFA	No Action/No Further Action/No Further Remedial Action
OU	Operable Unit
PCOC	Potential Chemical of Concern
RAGS	Risk Assessment Guidance for Superfund
RBCs	Risk-Based Concentrations
RCRA	Resource Conservation and Recovery Act
RFETS	Rocky Flats Environmental Technology Site
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RME	Reasonable Maximum Exposure
SA	Source Area
SWMU	Solid Waste Management Unit
TM	Technical Memorandum
UTL	Upper Tolerance Limit

EXECUTIVE SUMMARY

Presented in this document are No Action/No Further Action/No Further Remedial Action (NFA) decision criteria and NFA decision documentation requirements to be used as guidance for determining which geographic areas as defined by the NFA Working Group (e.g., Individual Hazardous Substance Sites [IHSSs], Source Areas [SAs], Operable Units [OUs], Areas of Concern [AOC]) at the Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado may become candidates for an NFA decision.

The NFA decision process presented within this document meets the substantive requirements to support a No Action or No Further Action (as defined by CERCLA) remedy selection for a Corrective Action Decision/Record of Decision (CAD/ROD). In addition, administrative requirements for coordination of NFA decisions with the CAD/ROD process and with RCRA closures at RFETS are discussed in this document. Various processes are consolidated in this document to provide decision criteria for establishing those geographic areas at RFETS that do not require further study or remediation as part of the CERCLA process, including planned land use decisions. The steps, in order of performance, can be summarized as follows:

1. Conduct source evaluation (with available data/information). If a review of historical release information/defensible data reveals that no current or potential threat can be found, the exposure pathway is incomplete and the IHSS can be recommended for No Action.

2. Conduct a background comparison. If a review of historical release information/ defensible data indicates that a current or potential threat may be present, an IHSS, usually as part of an OU, will undergo a background comparison. A background comparison is performed to distinguish between constituents that are associated with site activities and those associated with background conditions. If medium-specific environmental data collected from an IHSS are shown to be at or below background levels for inorganic chemicals, and no organic chemicals are detected in that medium, that IHSS may become a candidate for No Action.

3. Conduct a CDPHE conservative screen. The purpose of conducting a CDPHE conservative screen is to reduce the number of IHSSs that are required to undergo a CERCLA baseline risk assessment. Certain geographical areas have already been screened using the CDPHE conservative screen to evaluate human health risks. Ecological risks are screened using Tier 2 of the Ecological Risk Assessment (ERA) process. If an IHSS or source area passes both the human health and ecological risk-based screens, then that IHSS becomes a candidate for No Action.

4. Perform a Baseline Risk Assessment (BRA). The BRA consists of a human health risk assessment (conducted on an exposure area) and an ecological risk assessment (conducted by drainage area). A BRA includes an evaluation of baseline conditions as if no action, including implementing institutional controls, were taken. Risks assuming residential exposures can be compared to risks associated with other exposure scenarios to estimate the risk consequences of alternate land uses. If the results of the BRA estimate that the risks to human health and the environment are within acceptable levels, the IHSS becomes a candidate for No Further Action or No Further Remedial Action with institutional controls, depending on the specific receptors considered by the BRA.

The remedy selection process must be documented to support a NFA decision. For those sites not evaluated as part of an RFI/RI, a document justifying the NFA decision must be prepared to present an evaluation of existing information and data to support a scientifically and legally defensible NFA decision. For those sites evaluated within an RFI/RI Report or a Letter Report (i.e., a report generated as part of the CDPHE conservative screen), additional documentation justifying the NFA decision is not necessary; the RFI/RI Report or Letter Report serves as the documentation. Rationale for an NFA decision will be summarized in an update to the Historical Release Report (HRR), and appropriate supportive documentation will be appended, as necessary. The HRR update for an NFA is intended to be a place keeper for documentation that the substantive requirements for an NFA decision have been met.

Geographic areas that can only achieve No Further Remedial Action status if an institutional control is in place will be recognized as such. An institutional control and a recommendation for No Further Remedial Action will likely be part of the final CAD/ROD for the geographic area. If the circumstances, e.g., land use or risk evaluation, change between a recommendation for an NFA and the CAD/ROD incorporating the geographic area, the documentation supporting the NFA recommendation, and the NFA recommendation itself, will be reevaluated.

If cumulative risks for an OU or the entire site are between 10E-4 and 10E-06, risk management decisions must be made and may include NFA, remedial action, or risk controls such as land use designations and restrictions. DOE, in consultation with the NFA Working Group, may decide to place further remedial studies and/or closure activities on hold for a geographic area where DOE believes there is a high likelihood that no remedial action will be required. Such geographic areas may not be recommended for No Further Remedial Action until the cumulative risks are evaluated as part of the final CAD/ROD for the geographic area.

1.0 INTRODUCTION

1.1 Objectives

The purpose of this document is to present decision criteria for determining those geographic areas (e.g., Individual Hazardous Substance Sites [IHSSs], Source Areas [SAs], Operable Units [OUs], Areas of Concern [AOCs]) at the Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado which may become a candidate for a No Action/No Further Action/No Further Remedial Action (NFA) decision. Various processes that meet the substantive requirements in support of NFA remedy selection are consolidated in this document to provide decision criteria for establishing those geographic areas at RFETS that do not require further remediation as part of the CERCLA process, considering planned future land uses.

Presented in this document are NFA decision criteria and requirements for NFA decision documentation that ultimately can be used in the preparation of a CAD/ROD or in a RCRA closure. Administrative requirements for coordination of NFA closures at RFETS are discussed briefly in the Section 3.0 on NFA decision documentation. The primary benefits for having a preapproved NFA decision process include the following:

- Accelerate IHSS decision making and closures by not having to redevelop the NFA process for each closure.
- Track the status of successful closures at RFETS on an IHSS-by-IHSS basis.
- Eliminate negative cost and schedule impacts. Once an area has been accepted for an NFA decision, any work that is scheduled to occur within that area (e.g., routine monitoring or maintenance) should not require all the paperwork (e.g., Soil Disturbance Permit, waste determinations) or the personal protective equipment that would be needed in a contaminated (real or suspected) area. This would save time and money, and reduce the amount of waste generated.
- Limit the number and length of documents to be produced, thus reducing review time and cost of document production.
- Accelerate cleanup at RFETS by allowing resources to be directed to high priority sites.

An NFA Strategy Working Group, comprised of memebers from each agency and the Kaiser-Hill Team, will be established. The primary goals for this NFA working group will be to define the geographic areas (i.e., IHSS, SA, AOC, or OU) that will be considered for the NFA determination process. If a geographic area is located where an institutional control is expected to ensure a future land use, the working group will identify the area as such and the future land

use will be considered in the NFA recommendation. Geographic areas that can only achieve No Further Remedial Action status if an institutional control is in place will be recognized as such. An institutional control and a recommendation for No Further Remedial Action will likely be part of the final CAD/ROD for the geographic area. If the circumstances, e.g., land use or risk evaluation, change between a recommendation for an NFA and the CAD/ROD incorporating the geographic area, the documentation supporting the NFA recommendation, and the NFA recommendation itself, will be reevaluated.

If cumulative risks for an OU or the entire site are between 10E-4 and 10E-06, risk management decisions must be made and may include NFA, remedial action, or risk controls such as land use designations and restrictions. DOE, in consultation with the NFA Working Group, may decide to place further remedial studies and/or closure activities on hold for a geographic area where DOE believes there is a high likelihood that no remedial action will be required. Such geographic areas may not be recommended for No Further Remedial Action until the cumulative risks are evaluated as part of the final CAD/ROD for the geographic area.

1.2 Regulatory Basis for NFA Decisions

On January 22, 1991, the DOE, the CDPHE, and the EPA entered into a tri-party agreement (Interagency Agreement [IAG]), as directed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the corrective action section of the Resource Conservation and Recovery Act (RCRA), for the management of Rocky Flats Facility cleanup. This agreement was made to ensure that: (1) environmental impacts associated with past and present activities at the Rocky Flats Site would continue to be thoroughly investigated; (2) appropriate response actions would be taken; and (3) response actions would be completed as necessary to protect human health, welfare, and the environment. This framework identified the necessity of joint environmental regulatory processes to fulfill the requirements of RCRA and CERCLA. The IAG identified the required methodology for remedial actions, permit modifications, closures, and corrective actions for cleanup at Rocky Flats.

This NFA decision criteria document expands on the site-specific methodology for making NFA decisions at RFETS, using the regulatory guidance provided by CERCLA and RCRA.

1.2.1 CERCLA Guidance

Section 117 of CERCLA, as amended by SARA of 1986, requires the issuance of decision documents for remedial actions taken pursuant to sections 104, 106, 120, and 122. In response to these regulations, the EPA developed *Guidance on Preparing Superfund Decision Documents, Preliminary Draft* (EPA, 1992) and a Quick Reference Fact Sheet titled *Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs* (EPA, 1991a). EPA has also produced a *Record of Decision Checklist for No Action* (EPA, undated)

to aid in the development of NFA decision documents and in the process of obtaining an NFA decision. EPA OSWER Directive 9355.0-30 (EPA, 1991b) was written to clarify the role of the baseline risk assessment in developing Superfund remedial alternatives and supporting risk management decisions. These documents are the basis upon which this current NFA decision criteria document for RFETS is built.

Using the NFA Quick Reference Fact Sheet (EPA, 1991a) as a basis, an NFA decision may be warranted at RFETS under three general sets of circumstances:

1. When the site or area of the site (e.g., an OU or an IHSS) poses no current or potential threat to human health or the environment (a no action decision); or

2. When a previous response eliminated the need for further remedial response (a no further action decision); or

3. When risk calculations based on specific exposure scenarios indicate that institutional controls alone will constitute acceptable risk management (a no further remedial action decision).

EPA (EPA, 1992) defines no action as "no treatment, engineering controls, or institutional controls." Remedial alternatives that include solely institutional controls are not considered "no action." An alternative may include monitoring and still be considered "no action."

OSWER Directive 9355.0-30 (EPA, 1991b) states that: "If the baseline risk assessment and the comparison of exposure concentrations to chemical-specific standards indicates that there is no unacceptable risk to human health or the environment and that no remedial action is warranted, then the CERCLA Section 121 cleanup standards for selection of a Superfund remedy, including the requirements to meet applicable or relevant and appropriate requirements (ARARs), are not triggered."

An ARARs analysis will not be triggered for risk less than 10E-06 for the appropriate receptor, but CERCLA does not preclude independent application of State standards by CDPHE.

1.2.2 RCRA Guidance

A RCRA corrective action is used to clean up hazardous waste or hazardous waste constituents released from any solid waste management unit (SWMU) at a permitted facility, as codified in 42 USC 6924 section 3004(u).

The State of Colorado was authorized, by the EPA, to manage hazardous waste requirements within its boundaries through the Colorado Hazardous Waste Act (CHWA). CDPHE, through its

Hazardous Material and Waste Management Division, promulgated regulation in 6 CCR 1007-3 for the proper handling of hazardous waste and constituents. The Corrective Action Program for any SWMU is defined in section 264.101 of those regulations.

On November 16, 1993, CDPHE provided additional guidance for closure requirements, corrective action requirements, and other program requirements. This guidance identified the risk assessment methodology and the use thereof in making corrective action decisions for hazardous waste generator facilities that are regulated by the CHWA and its implementing regulations (Colorado Hazardous Waste Regulations [CHWR]). The methodology identifies a three-step screen approach for evaluating corrective action at a SWMU.

The first screen is a comparison to background and/or detection limits. Exceeding the detection limits or background levels (both defined in this guidance) would require screening steps two and three of the CDPHE screening process. SWMU or release sites that meet the levels prescribed in the criteria identified are considered "clean" and corrective action would not be necessary.

In addition, the July 27, 1990, Federal Register proposes 40 CFR §264.514, which presents a mechanism by which a permittee may request a permit modification to effectively terminate further requirements at a RCRA facility where no further action is justified.

For IHSSs that have interim status under RCRA, substantive requirements should be included as part of an Interim Measure/Interim Remedial Action (IM/IRA) for public comment. However, for NFAs, an IM/IRA should not be required and a Proposed Plan will suffice. In this situation, modification of the CHWA Permit for Rocky Flats will proceed as a separate process after the CAD/ROD is adopted. For interim status units (e.g., IHSSs), RCRA Clean Closure Certification by an independent engineer is a requirement for NFA.

1.3 Exposure Pathway—Generic Site Conceptual Model

The key criterion in proposing an NFA decision is the determination of whether any actual or potential risk to human health or the environment exists. In order for a public health or environmental threat to exist, a complete pathway for exposure must exist between a site and a receptor. Individual components of an exposure pathway from the generic site conceptual model for the *No Further Action Justification Document for Rocky Flats Plant Low-Priority Sites (Operable Unit 16)* (DOE, 1993) are shown in Figure 1.

An exposure pathway is defined as "a unique mechanism by which a population may be exposed to chemicals at or originating from the site" (EPA, 1989a). As shown in Figure 1, a credible exposure pathway must include a contaminant source, a release mechanism, a

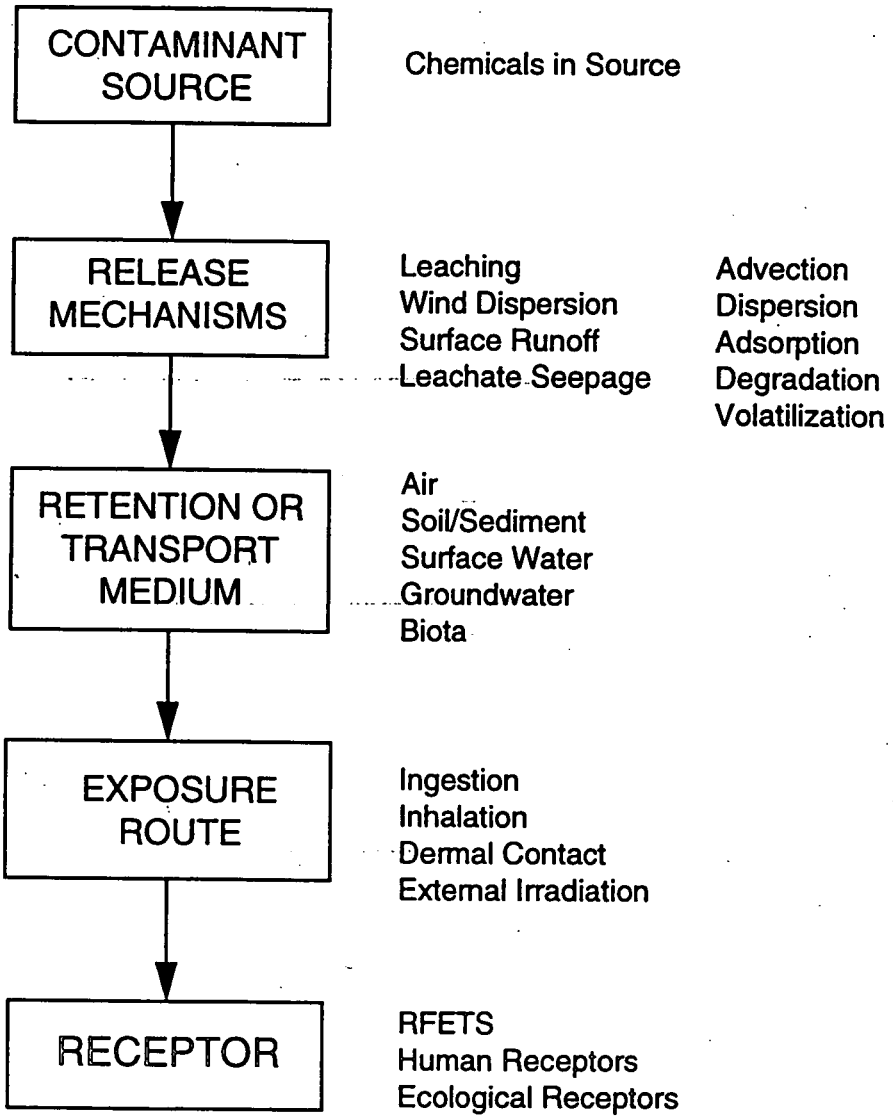


Figure 1. Exposure Pathway--Generic Site Conceptual Model

transport medium, an exposure route, and a receptor. These individual components of an exposure pathway are defined as follows:

- Contaminant Source: A contaminant source includes contaminants and/or contaminated environmental media associated with historical operations/occurrences at each IHSS

- Release Mechanisms: Release mechanisms are physical and chemical processes by which contaminants are released from the source. A conceptual model identifies primary release mechanisms, which release contaminants directly from the IHSSs, and secondary release mechanisms, which release contaminants from environmental media.

- Retention or Transport Medium: A retention or transport medium is one into which contaminants are released from the source and from which contaminants may be released to a receptor (or to another medium by a secondary release mechanism). Primary transport media include air, soil, surface water, ground water, and biota.

- Exposure Route: An exposure route is an avenue through which contaminants are physiologically incorporated by a receptor and include inhalation, ingestion, dermal contact, and external irradiation.

- Receptor: A receptor is a population affected by contamination released from a site. Potential human receptors for contaminants in IHSSs at RFETS include workers and visitors. Environmental receptors include flora and fauna. Offsite receptors could include residents or agricultural workers.

If an exposure pathway lacks any of these components, it is not complete, there is no risk, and No Action is warranted. However, if an exposure pathway is complete, an NFA can be considered if the potential risk present is within acceptable limits as determined by the CDPHE conservative screen or the BRA. If a geographic area is located where an institutional control is expected to ensure a future land use, the working group will identify the area as such and the future land use will be considered in the NFA recommendation. Geographic areas that can only achieve No Further Remedial Action status if an institutional control is in place will be recognized as such. An institutional control and a recommendation for No Further Remedial Action will likely be part of the final CAD/ROD for the geographic area. If circumstances, e.g., land use or risk evaluation, change between a recommendation for an NFA and the CAD/ROD incorporating the geographic area, the documentation supporting the NFA recommendation, and the NFA recommendation itself, will be reevaluated.

If cumulative risks for an OU or the entire site are between 10E-4 and 10E-06, risk management decisions must be made and may include NFA, remedial action, or risk controls

such as land use designations and restrictions. DOE, in consultation with the NFA Working Group, may decide to place further remedial studies and/or closure activities on hold for a geographic area where DOE believes there is a high likelihood that no remedial action will be required. Such geographic areas may not be recommended for No Further Remedial Action until the cumulative risks are evaluated as part of the final CAD/ROD for the geographic area.

The criteria for NFA decisions presented in Section 2.0 address both incomplete and complete exposure pathways. Section 3.0 describes the documentation requirements for making an NFA recommendation.

2.0 CRITERIA FOR NFA DECISIONS

The regulatory process for dispositioning a site suspected of contamination can be long and complex. However, there are several points in this process at which a geographic area (an IHSS, SA, AOC, or OU) can be recommended for NFA. Criteria have been developed for each decision point to determine whether or not sufficient information is available to protect human health and the environment. Figure 2 shows these NFA decision points. The remainder of this section, which is organized according to Figure 2, describes the criteria to be met at each decision point.

2.1 Source Evaluation

The first step in evaluating a geographic area is to determine what sources of contamination, if any, remain in the geographic area. If no existing source can be found, the exposure pathway is incomplete and the geographic area can be recommended for No Action. The remaining components of an exposure pathway (release mechanisms, retention or transport medium, exposure route, and receptor) are all evaluated during the risk assessment process.

The NFA criteria for demonstrating that no current or potential threat exists are site specific. Historical information must be reviewed to determine whether or not an NFA decision may be appropriate at an early stage of a site investigation. NFA justification can be accomplished using minimal investigation and characterization resources if adequate historical release information and defensible data are available; additional environmental sampling may not always be necessary. If it appears that an existing contaminant source is lacking in an IHSS, an NFA determination may be made without the need to collect additional environmental samples (Decision Point 1).

As seen in Figure 2, No Action recommendation at Decision Point 1 may be made under at least three circumstances, where a lack of contaminant source is indicated. These circumstances have already resulted in successful NFA determinations for IHSSs at RFETS. The final *No Further Action Justification Document for OU16* (DOE, 1993) describes these circumstances, which are demonstrated in the following examples:

1. In IHSS 185, a 1986 4-gal solvent spill was cleaned up immediately, using a commercial absorbent. This solvent was not detected in subsequent ground water sampling. Based on this evidence and additional physicochemical rationale, no action was warranted for this IHSS.

2. In early 1980, 155 gallons of antifreeze, containing 25 percent ethylene glycol, were released from Building 708 through a buried culvert (IHSS 192) into Walnut Creek. A fate and transport degradation model run using the physicochemical characteristics of

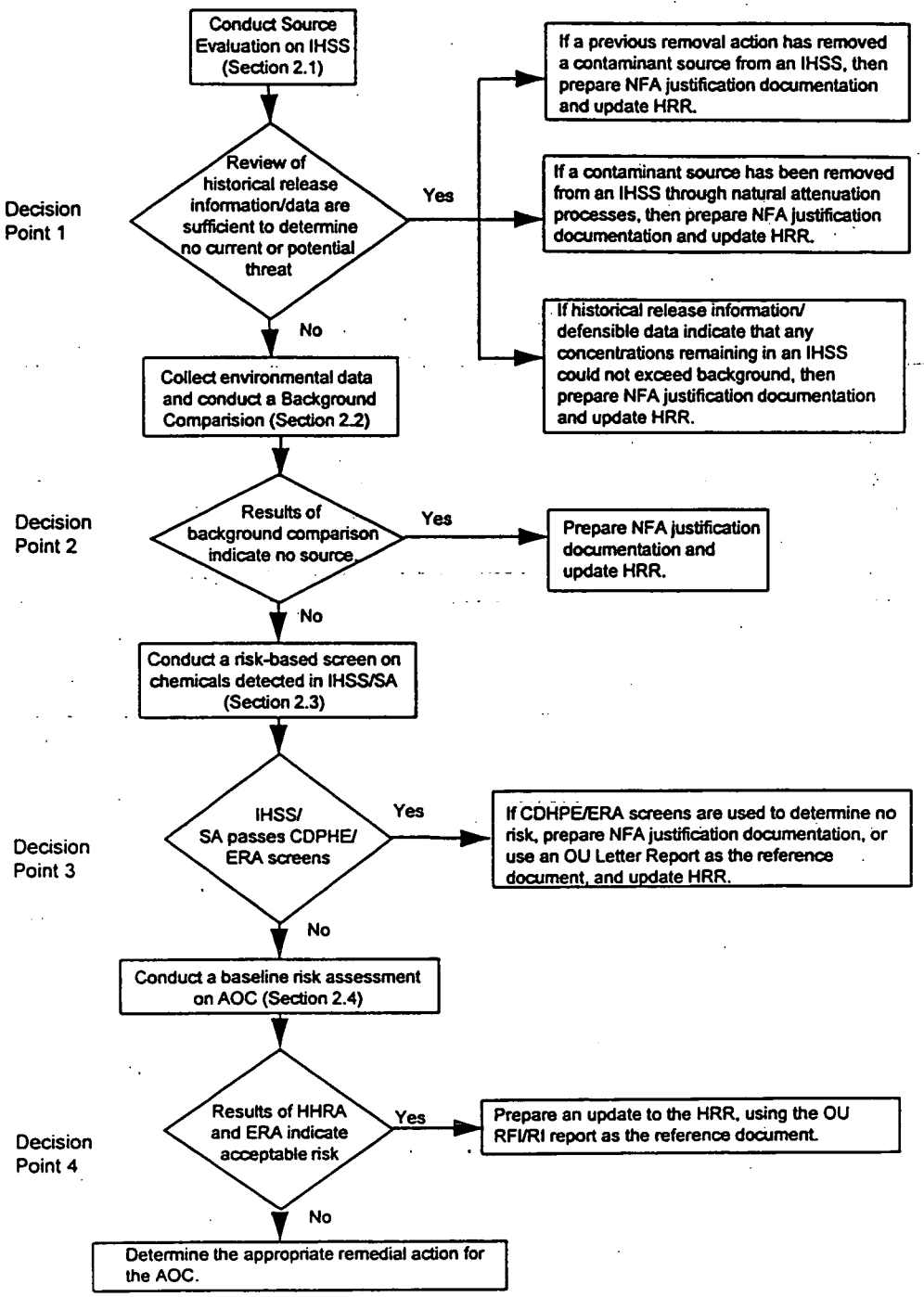


Figure 2. Decision Points for NFA Recommendations

ethylene glycol indicated that it was completely degraded through natural attenuation, resulting in an NFA decision for this IHSS.

3. A 1979 break in a steam condensate line discharged steam condensate water containing low levels of tritium onto a paved area (IHSS 194). Tritium levels in steam condensate water samples were within background activity levels; considering the half life of tritium and the time since the discharge, no action was warranted.

As with the IHSSs in OU16, this type of NFA determination may be useful for evaluating geographic areas in the Industrial Area at RFETS. However, if adequate historical release information and current environmental data are not available to make an NFA determination, the geographic area would progress to the next step in the process, which could include scoping the site investigation to obtain additional data.

2.2 Background Comparisons

If a review of historical release information/data indicates that a contaminant source may be present, the geographic area will undergo a background comparison. A background comparison is performed to distinguish between constituents that are associated with site activities and those associated with background conditions. If sufficient data are available, a statistical methodology is used to conduct the background comparison (i.e., potential chemicals of concern [PCOC] identification) for nonanthropogenic compounds. A five-phase methodology (Figure 3), used to determine if an inorganic constituent exceeds background levels, was developed and approved by DOE, EPA Region VIII, and CDPHE. This methodology is detailed in the *Human Health Risk Assessment Methodology for RFETS* (DOE, 1995a) and EG&G Interoffice Correspondence (EG&G, 1995). In addition, examples of the application of background comparison at RFETS can be found in the site-specific letter reports for OU5 (DOE, 1994a) and OU6 (DOE, 1994b).

In a statistical background comparison, PCOCs are determined on an OU-wide basis for each environmental medium. Organic chemicals are assumed to be man-made and are not compared to background. Professional judgement, using spatial, temporal, or pattern-recognition concepts, must be applied to ensure the background data set is appropriate for comparison to the OU data set (for example, geologic conditions should be considered). If appropriate background data sets are not available (such as with OU3 lake sediments), a weight-of-evidence approach may be used to provide background benchmark values. Professional judgment must also be used to identify IHSSs or OUs where analyte- or medium-specific data are insufficient to run statistical background comparisons (e.g., in data sets with limited sample size or greater than 80% nondetects). In these cases, it may be more appropriate to use only the Hot Measurement Test (i.e., the maximum detected concentration of

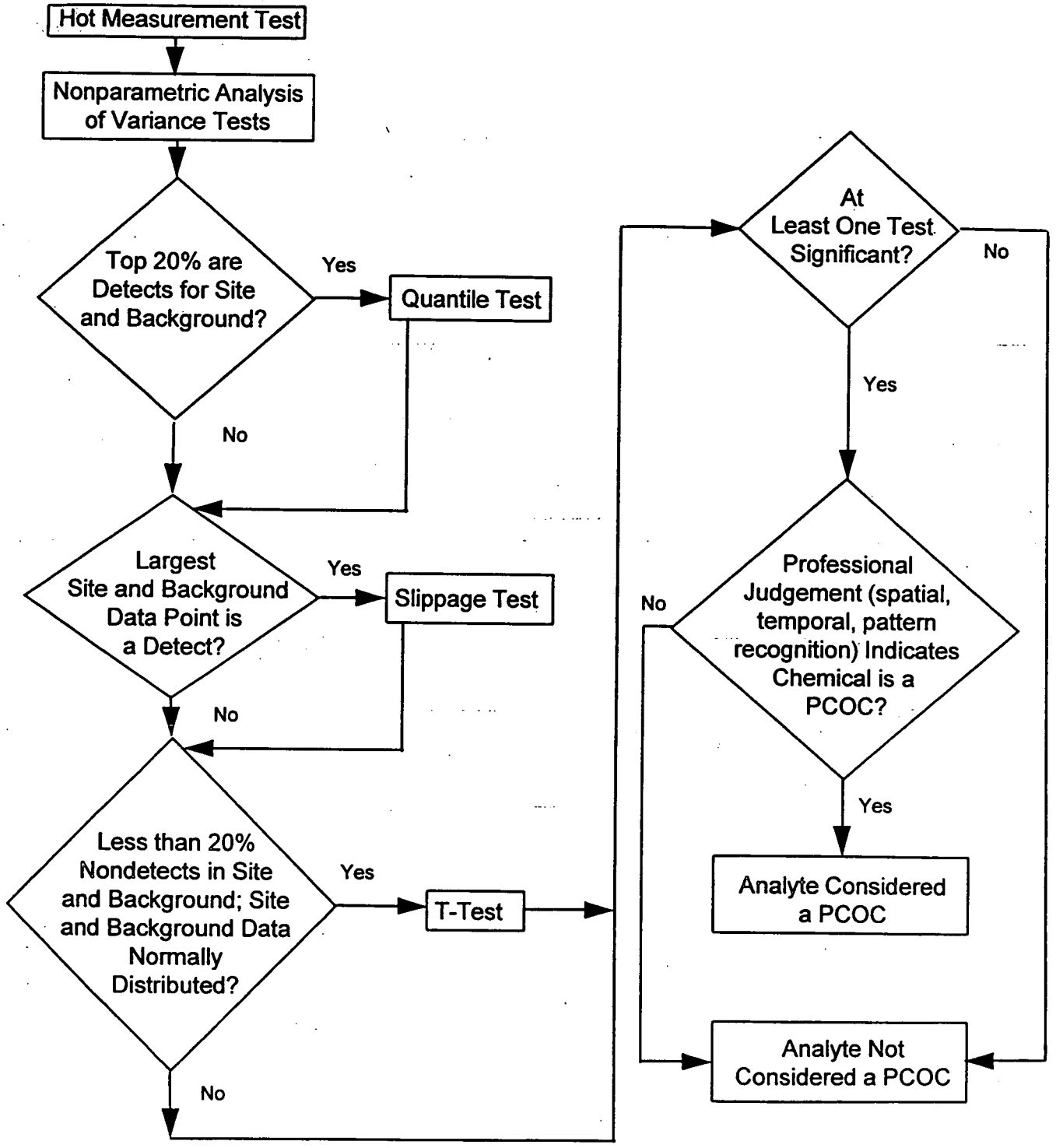


Figure 3. Background Comparison/PCOC Selection

an analyte is compared to the background 99% upper tolerance limit [$UTL_{99/99}$] for that analyte) as a background comparison.

If medium-specific environmental data collected from an IHSS are shown to be at or below background levels for inorganic chemicals, and no organic chemicals are detected in that medium (Decision Point 2), that IHSS may become a candidate for No Action. If PCOCs are identified for an IHSS, the data must be analyzed using the CDPHE conservative screen described in Section 2.3.

2.3 Risk-based Screening of Chemicals

An IHSS having PCOCs (inorganic and/or organic), as indicated through a background comparison described in Section 2.2, must undergo a risk-based screening of chemicals before it can be recommended for no action. The purpose of conducting a risk-based screen is to reduce the number of IHSSs that are required to undergo a CERCLA baseline risk assessment. Human health risks are evaluated using the CDPHE conservative screen (Section 2.3.1); ecological risks are screened using Tier 2 of the ecological risk assessment (ERA) process (Section 2.3.2).

2.3.1 CDPHE Conservative Screen

The CDPHE conservative screen was developed by the State of Colorado to ensure that the requirements of RCRA are met. The CDPHE conservative screen was incorporated by DOE, EPA, and CDPHE into the data aggregation process used in human health risk assessment (HHRA) for RFETS. This screen is one method used by DOE, EPA, and CDPHE to make decisions regarding no action, voluntary corrective action, or further analysis through an HHRA. A CDPHE conservative screen is conducted in accordance with the guidance provided in the *Human Health Risk Assessment Methodology for RFETS* (DOE, 1995a) and shown in Figure 4.

In the CDPHE conservative screen, source areas (SAs) are delineated that contain organic PCOCs above reporting limits and/or inorganic PCOCs at concentrations above the arithmetic mean plus two standard deviations of the background data. An SA consists of one or more IHSSs that are grouped together based on historical use, site characterization, PCOC types and concentrations, affected media, and rates of migration.

The CDPHE conservative screen is considered conservative based on the following requirements of the process:

- The risk-based concentrations (RBCs) ratio sum for each SA is calculated using the maximum detected concentration for an analyte, rather than the 95% upper confidence limit used in CERCLA risk assessments.

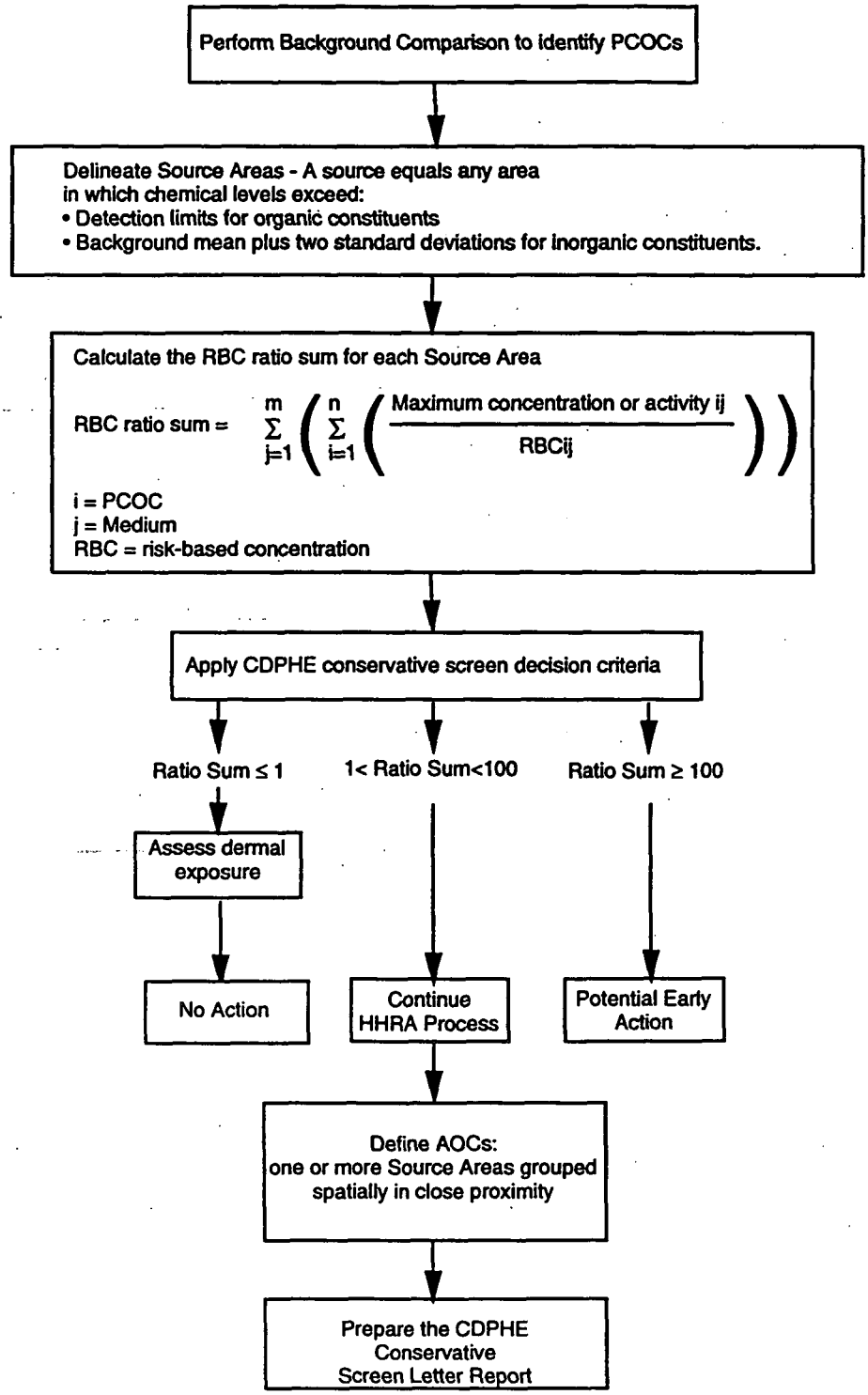


Figure 4. CDPHE Conservative Screen

- The chemical- and medium-specific RBC is calculated assuming direct residential exposure, rather than an exposure scenario more appropriate to the site. Land use recommendations made by the Rocky Flats Future Site Working Group (1995) primarily include open space use for the buffer zone and environmental technology (industrial/ office) use for the industrial area; future onsite residential land use was not recommended.

- The RBC is calculated using a carcinogenic risk of 10E-6 and a noncarcinogenic hazard quotient of 1.0, rather than using the 10E-4 to 10E-6 risk range used in CERCLA risk assessments.

- The residential scenario is based on exposure assumptions and standard default factors provided for the reasonably maximum exposed (RME) residential receptor; CERCLA risk assessments also provide risk estimates for central tendency (average) receptors.

- The CDPHE conservative screen includes data for soil samples collected to a depth of 12 feet in the surface soil calculations, rather than soil from the 0- to 2-foot interval, which is more typical of CERCLA HHRAs.

The chemical-specific ratios are summed for each medium, with carcinogenic ratios summed separately from those analytes causing noncarcinogenic effects. The ratio sums for each medium are then added to get a total sum ratio for an SA. The ratios are compared to the CDPHE conservative screen decision criteria used to designate source areas as candidates for no action, for further evaluation in the HHRA, or for possible early action (Decision Point 3). Source areas with ratio sums less than 1 may become candidates for No Action pending an evaluation of the risk associated with potential dermal contact. For source areas with ratio sums between 1 and 100, and greater than 100, DOE may evaluate the source area further in the HHRA and/or pursue a voluntary early action alternative in accordance with the Environmental Priorities List, respectively. A CDPHE conservative screen letter report is prepared to summarize the results of this screen and is used as a reference document to justify an NFA decision.

Those IHSSs or SAs within an OU that do not pass the CDPHE conservative screen are grouped into areas of concern (AOCs) for further evaluation in an HHRA. AOCs are defined as one or more SAs grouped spatially in close proximity that have historically similar waste streams (i.e., similar PCOCs).

2.3.2 Ecological Risk Assessment Tier 2 Screen

After an IHSS or source area passes the CDPHE conservative screen, it must then pass a screening-level ERA before it can become a candidate for an NFA decision. This screening process is performed according to the EPA's eight-step guidance (draft) on conducting ERAs at Superfund sites (EPA, 1994). A sitewide ecological risk assessment methodology (ERAM) was developed that is consistent with this eight-step guidance. The screening portion of this site-specific guidance is shown in Figure 5 and described in the following documents:

- *ERAM Technical Memorandum, Sitewide Conceptual Model* (DOE, 1995b) helps identify environmental stressors and the potentially complete exposure pathways that will become the focus of the ERA (DOE, 1995b).

- *ERAM Technical Memorandum, Ecological Chemicals of Concern Screening Methodology* (DOE, 1995c) describes a tiered screening process for identifying chemicals at potentially ecotoxic concentrations.

The purpose of a screening-level ERA is to detect whether a significant ecological threat exists in a geological area. After PCOCs have been determined for a geographic area, risks are estimated by comparing maximum analyte concentrations with screening-level ecotoxicity benchmarks, with the subsequent generation of hazard quotient (HQ) values. The HQ is the result of the exposure estimate divided by the benchmark. This step, which is also part of Decision Point 3 shown in Figure 2, is used to evaluate whether the site preliminary screening is adequate to determine the presence of an ecological threat (EPA, 1994).

If none of the PCOCs are present at ecotoxic concentrations, the site is considered to present a negligible or *de minimis* risk and a more detailed quantitative risk assessment is not warranted (EPA, 1994). If the HQ for a PCOC is greater than 1, then that analyte is identified as a potential ecological chemical of concern (ECOC) and is subject to further analysis. However, if HQs for each of the PCOCs for a source area are 1or below, the screen indicates that none of the PCOCs are present at potenially ecotoxic concentrations and should not be subjected to further analysis.

In summary, an IHSS or SA that fails to pass any of the screening criteria described in this section will be grouped with similar IHSSs or SAs into an AOC and will undergo a CERCLA baseline risk assessment (HHRA and/or ERA), as described in Section 2.4.

2.4 CERCLA Baseline Risk Assessment

CERCLA, as implemented by the NCP, establishes the overall approach for determining appropriate remedial actions at Superfund sites. The overall mandate of the Superfund

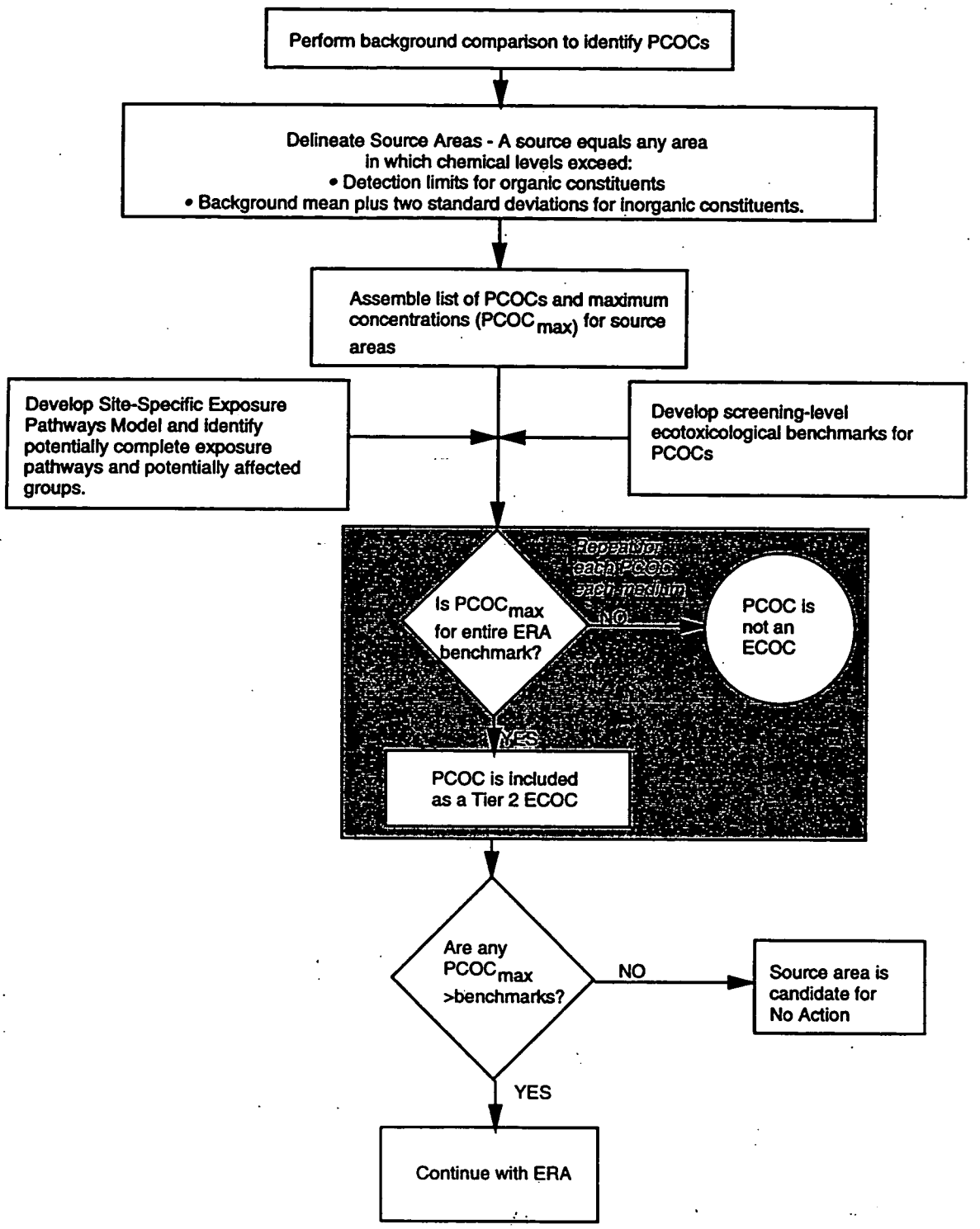


Figure 5. Screening-Level ERA

program is to protect human health and the environment from current and potential threats posed by uncontrolled hazardous substance releases. To support this mandate, EPA developed the *Risk Assessment Guidance for Superfund* (RAGS) (EPA, 1989a and 1989b), which addresses both the human health and ecological risk assessments in Volumes I and II, respectively. Within remedial investigation reports, baseline risk assessments provide an evaluation of the potential threat to human health and the environment in the absence of any remedial action. The baseline risk assessment (BRA) therefore consists of an HHRA and an ERA.

The risk assessment methodology used at RFETS has been adapted to this site jointly by DOE, EPA, CDPHE, and EG&G from EPA guidance. RFETS guidance to the HHRA process is provided in the *Human Health Risk Assessment Methodology for RFETS* (EG&G, 1995). The methodology for conducting an RFETS ERA is based on the *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA, 1994). Site-specific guidance for conducting ERAs is provided in *Ecological Risk Assessment Methodology for Rocky Flats Environmental Technology Site* (Vertucci *et al.*, 1995).

2.4.1 Human Health Risk Assessment Methodology

As established in Section 2.3, an AOC must undergo a BRA if it does not pass through the risk-based screen. Figure 6 briefly outlines the steps taken in conducting an HHRA, which consist of the following elements:

- Identifying chemicals of concern (COCs)
- Developing exposure scenarios
- Describing fate and transport models
- Calculating intake factors
- Conducting a toxicity assessment
- Conducting a risk characterization
- Analyzing uncertainty in the HHRA
- Documenting human health risks in the BRA.

An RFI/RI report includes both a summary of risks for a site and a list of recommendations. However, the final decisions on whether or not a site will be recommended for NFA or if a remedial action is warranted is made by the risk managers from DOE, EPA, and CDPHE, with input from the stakeholders. The following are a few guidelines in making these risk-management decisions.

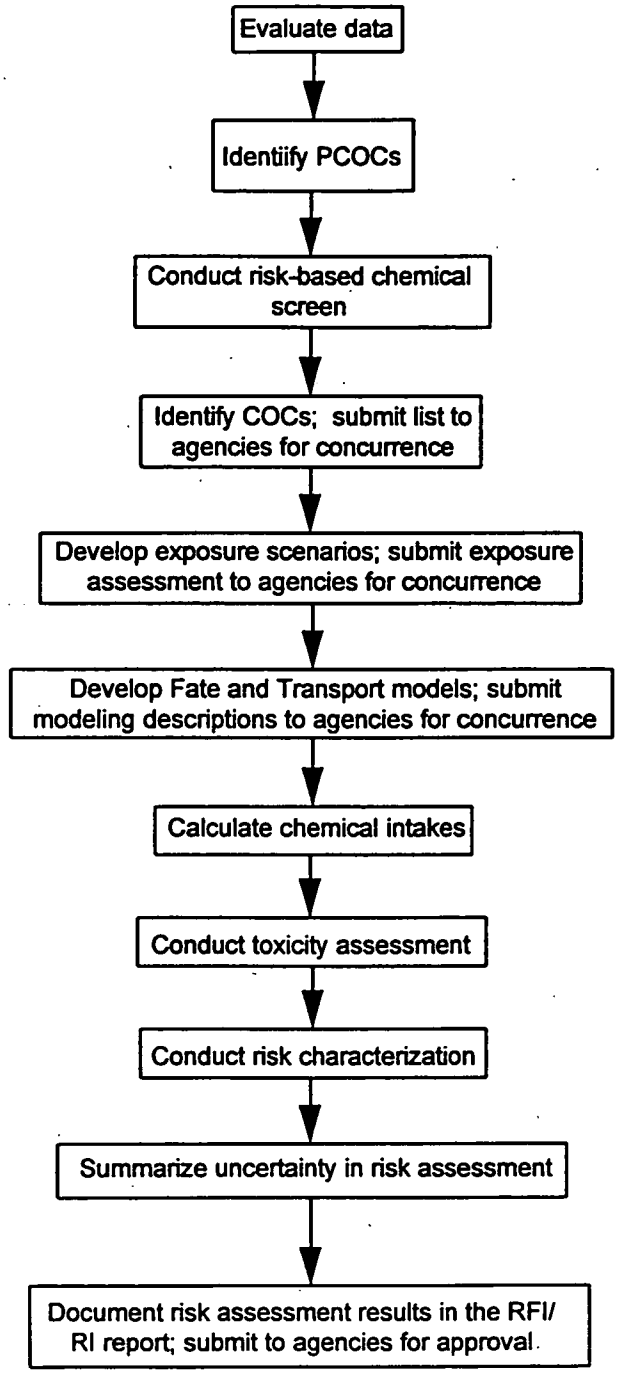


Figure 6. Human Health Risk Assessment Process

1. An IHSS, AOC, or OU is a candidate for an NA or NFA decision if the carcinogenic risk estimated using the exposure factors for a residential receptor is 10E-6 or below and the noncarcinogenic hazard index (HI) is 1 or below.

2. In terms of risk-based decision making for an IHSS, AOC, or OU, a 10E-6 excess lifetime cancer risk level is the point of departure and remedial design goal. These areas are candidates for No Further Remedial Action decision with institutional controls if the carcinogenic risk estimated using the reasonable maximum exposure factors for the appropriate receptor (e.g., open-space recreational user, office worker, construction worker) is 10E-6 or below and the noncarcinogenic hazard index (HI) is 1 or below. An institutional control will be required to ensure the anticipated appropriate future land use.

3. Areas clearly require remedial action where the cumulative excess lifetime cancer risks exceed 10E-4 using appropriate receptors. If cumulative risks for an OU or the entire site are between 10E-4 and 10E-06, risk management decisions must be made and may include NFA, remedial action, or risk controls such as land use designations and restrictions. DOE, in consultation with the NFA Working Group, may decide to place further remedial studies and/or closure activities on hold for a geographic area where DOE believes there is a high likelihood that no remedial action will be required. Such geographic areas may not be recommended for No Further Remedial Action until the cumulative risks are evaluated as part of the final CAD/ROD for the geographic area. No Further Remedial Action with institutional controls may be considered when the estimated carcinogenic risks are in the low end of the risk range, when the cumulative noncarcinogenic HI is less than 10 (depending on the particular toxic effects of the chemicals involved), and when neither risk managers nor stakeholders can provide nonrisk-based justification that action is warranted.

OSWER Directive 9355.0-30 (EPA, 1991b) provides guidance to support the above criteria:

> "Generally, where the baseline risk assessment indicates that a cumulative site risk to an individual using reasonable maximum exposure assumptions for either current or future land use exceeds the 10E-4 lifetime excess cancer risk end of the risk range, action under CERCLA is generally warranted at the site. For sites where the cumulative site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10E-4, action generally is not warranted, but may be warranted if a chemical specific standard that defines acceptable risk is violated or unless there are noncarcinogenic effects or an adverse environmental impact that warrants action. A risk manager may also decide that a lower level of risk to human health is unacceptable and that remedial action is warranted, for example, there are uncertainties in the risk assessment results. Records of Decision for remedial actions taken at sites

posing risk within the 10E-4 to 10E-06 risk range must explain why remedial action is warranted."

Future land use evaluations will be consistent with the Vision.

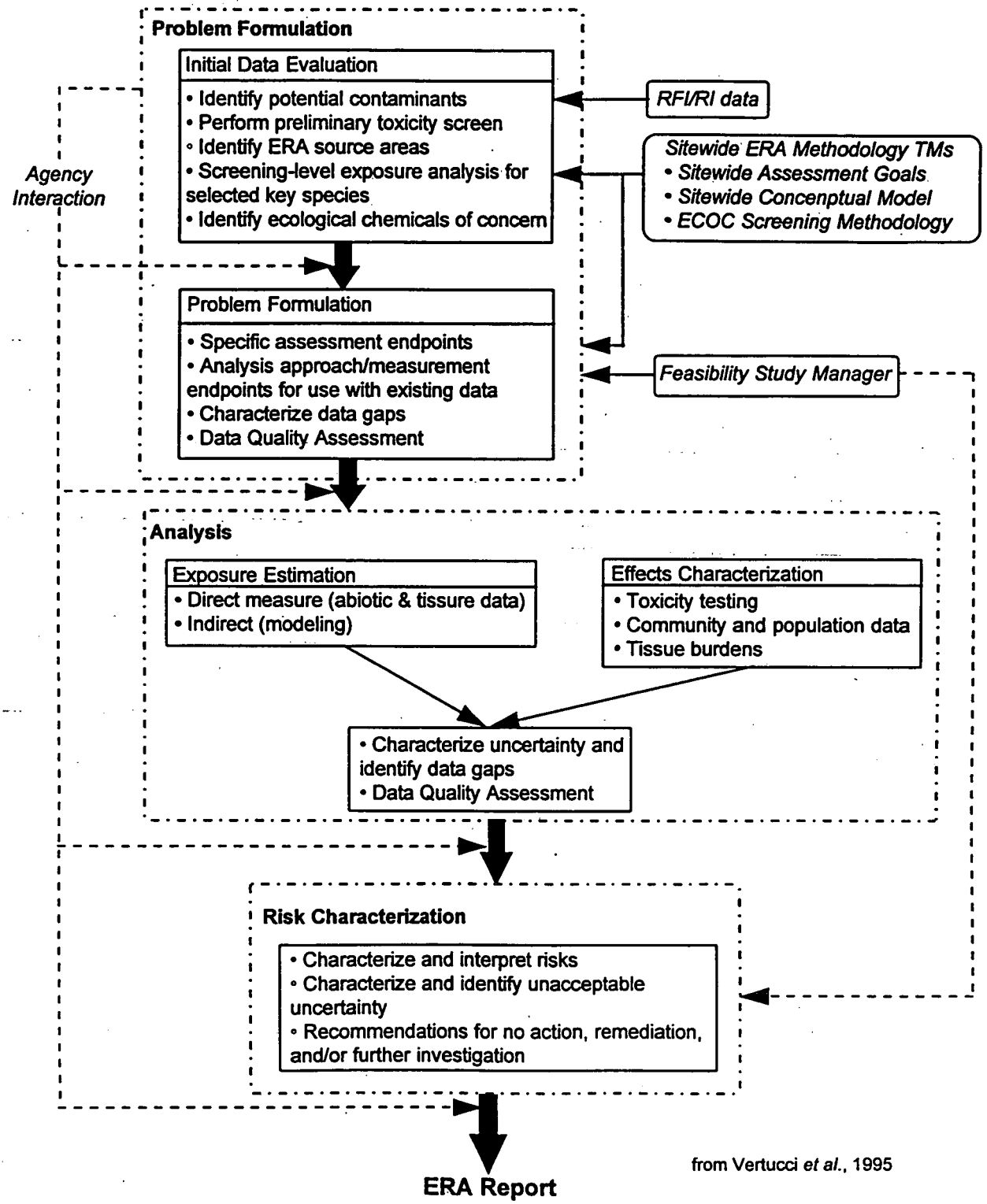
2.4.2 Ecological Risk Assessment Methodology

If data from a given IHSS or source fail to pass a Tier 2 ecological evaluation (HQ >1 for any analyte), the data are evaluated using a Tier 3 ERA screen, which is basically equivalent to the concentration/toxicity screening conducted during the HHRA. A Tier 3 ERA is a much more comprehensive evaluation of exposure pathways and a more accurate method for estimating exposure than a Tier 2 screening-level ERA. The Tier 3 exposure estimation includes methods that account for factors which modify the frequency, duration, and intensity of contact between a receptor and the contaminated media. Tier 3 evaluation results in a list of chemicals that are subjected to more detailed analysis in the ecological risk characterization.

ERA risk characterization integrates the exposure assessment and the effects assessment. It includes a description of risk in terms of the assessment endpoints, a discussion of the ecological significance of the effects, a summary of the overall confidence in the ERA, and a discussion of possible risk management strategies. Figure 7 presents the ERA process used at RFETS.

Risk characterization for each ERA study area involves quantifying exposure by using site-specific data and exposure models and comparing this exposure to dose-response information from the scientific literature. Risk characterization also involves interpretation of biological tests (e.g., toxicity tests, benthic macroinvertebrate studies) to determine any measurable ecological effects of the chemical stressors.

Risk characterization requires that different types of data be evaluated together. Balancing and interpreting the different types of data can be a major task and frequent communication between scientists from DOE, EPA, and CDPHE is essential to defensible risk characterization. Because no solid criteria exist for determining ecological risk, professional judgment will be used at this step in the NFA process. There should be agreement on the interpretation of site-specific data, the exposure assessment, the results of ecological effects studies, and the strength of the evidence linking dose-response, measured effects, and site COCs.



from Vertucci *et al.*, 1995

Figure 7. Ecological Risk Assessment Process at RFETS

3.0 NFA DECISION DOCUMENTATION

The purpose of NFA decision documentation is to provide the basis for a defined geographic area's final CAD/ROD. If circumstances, e.g., land use or risk evaluation, change between a recommendation for an NFA and the CAD/ROD incorporating the geographic area, the documentation supporting the NFA recommendation, and the NFA recommendation itself, will be reevaluated. In addition, an NFA status will have a significant impact on activities at a specific job site conducted prior to a CAD/ROD. Therefore, an efficient mechanism for implementing NFA decisions will provide both long- and short-term benefits. The process was selected for communicating NFA decisions is through updates to the HRR. It is anticipated that the HRR will be maintained as part of the new Rocky Flats Cleanup Agreement.

Among other purposes, these updates serve as a basis for issuing soil disturbance permits, obtaining waste determinations, and determining the appropriate level of personal protection equipment for work in an IHSS. Therefore, the HRR updates were selected for recommendations on NFA decisions, tracking IHSS status, and communicating IHSS information (e.g., information for waste determinations required by EPA and CDPHE). The HRR update format includes a description of the release event, complete physical and chemical descriptions of the constituents released, responses to the events, fate of the constituents released, and a reference section. Additionally, signature lines for DOE, EPA, and CDPHE concurrence are provided in the HRR updates. The process for updating the HRR has been developed through negotiations and document reviews from DOE, EPA, and CDPHE.

A recommendation for an NFA decision for a geographic area is presented to DOE, EPA, and CDPHE as an update to the HRR. Documentation justifying the NFA decision must accompany an NFA recommendation to support the HRR update, and ultimately, a CAD/ROD determination. Characterization of sites, including the evaluation of data to determine risk, is usually included within RFI/RI reports. For those sites evaluated within an RFI/RI Report or a Letter Report (i.e., for those IHSSs that pass the CDPHE conservative screen), additional NFA justification documentation is not necessary and the supporting documentation will be incorporated into the HRR update by reference, or appended, as necessary. For those sites not evaluated as part of an RFI/RI, NFA justification must be prepared to present an evaluation of existing information and data to support a scientifically and legally defensible NFA recommendation. This supporting documentation, which may include a CDHPE conservative screen will be included in the HRR update as an attachment or appendix.

NFA justification documentation is prepared to support NFA recommendations on IHSSs for which a (1) source evaluation has determined no current or potential threat exists, (2) background comparison has indicated no current or potential threat of a contaminant source,

and (3) future screening-level risk evaluation has indicated no risk, or risk within acceptable levels, is present. Depending upon the IHSS being evaluated, supporting documentation will vary in the type, quantity, and quality of information and data. The NFA working group must determine whether or not available data are necessary and sufficient to perform a given process evaluation that must be made for each site. Appropriate guidance (e.g., EPA/CERCLA, CDPHE/CHWA) is available to help determine if necessary and sufficient data are available to perform background comparisons and/or a risk-based screening of chemicals. An evaluation of data quality should be performed prior to using data and the results of that evaluation should be included as part of the documentation to ensure that the data quality objective process (generally presented in the OU work plan or sampling and analysis plan) is used during the investigation and documented properly.

An example of the types of information to be included as backup information is presented in Table 1. This sample table of contents can be modified, as necessary, to meet site-specific needs. It is also intended that all justification documentation be as brief as possible, including only the necessary and sufficient information required to support a scientifically and legally defensible recommendation.

The NFA decisions recommended in the HRR updates are intended to be "place keepers". An IHSS can be placed on hold until the NFA working group agrees, or another appropriate body, that initiating the administrative process (Proposed Plan, Closure Plan, CAD/ROD, RCRA Permit Modification, etc.) for IHSS closure is beneficial. Geographic areas placed on hold by DOE, in consultation with the NFA Working Group, may be recommended for No Further Remedial Action after the cumulative risks are evaluated for the final CAD/ROD for a geographic area for which the estimated carcinogenic risks are in the low end of the risk range, the cumulative noncarcinogenic effects are less than 10 (depending on the particular toxic effects of the chemicals involved), and neither risk managers nor stakeholders can provide nonrisk-based justification that action is warranted.

The administrative process under CERCLA would be initiated with the preparation of a Proposed Plan, which may recommend closure of several IHSSs in one CAD/ROD. Proposed Plans can be developed for individual sites, groups of sites, OUs and unrelated sites, depending upon the timing or benefit of any given closure or closures being pursued.

For IHSSs that have interim status under RCRA, substantive requirements should be included as part of an IM/IRA for public comment. However, for NFAs, an IM/IRA should not be required and a Proposed Plan will suffice. In this situation, modification of the CHWA Permit for Rocky Flats will proceed as a separate process after the CAD/ROD is adopted. For interim status

Table 1
Generalized Information Requirements for NFA Justification Documentation

1.0 INTRODUCTION
- 1.1 Purpose of Document
- 1.2 Background Information

2.0 FIELD INVESTIGATION
- 2.1 Site Investigation Objectives, including data quality objectives
- 2.2 Site History and Available Data
- 2.3 Investigation Activities
- 2.4 Data Quality and Usability

3.0 PHYSICAL CHARACTERISTICS
- 3.1 Surface Features
- 3.2 Geology
- 3.3 Hydrogeology
- 3.4 Ecology

4.0 NATURE AND EXTENT OF CONTAMINATION
- 4.1 Source Evaluation
- 4.2 Site Conceptual Model
- 4.3 Background Comparison
- 4.4 Nature and Extent of Contamination

5.0 EVALUATION OF RISKS
- 5.1 Risk-based Screening of Chemicals
- 5.2 Summary of Baseline Risk Assessment

6.0 NFA JUSTIFICATION

7.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

8.0 REFERENCES

LIST OF TABLES
LIST OF FIGURES
LIST OF APPENDICES

units (e.g., IHSSs), RCRA Clean Closure Certification by an independent engineer is a requirement for NFA.

It is noted that in cases where IHSSs overlap, both IHSSs must meet the NFA criteria in order for closure of their respective geographical area to be pursued via the administrative process described above. The NFA status of an overlapping IHSS may still be documented with an HRR update, but the IHSS must be identified within the HRR update as overlapping with another IHSS which has or has not been accepted as having NFA status. This process will ensure that the area of IHSS overlap is still considered when the HRR is utilized for soil disturbance permits, waste determinations, personal protective equipment, and so forth. In addition, HRR updates can continue as required by the IAG and geographical areas may ultimately be closed.

4.0 REFERENCES

EG&G Rocky Flats, Inc., 1995. Interoffice Correspondence MAN-002-95. Summary of Dr. Gilbert's Letter Report concerning the Comparison of Operable Unit (OU) versus Background Data: Application of Professional Judgment. (January 10)

Federal Register. Proposed Rules. Vol.55, No. 145, Friday, July 27, 1990, p. 30613.

Rocky Flats Future Site Working Group, 1995. *Rocky Flats Future Site Working Group Recommendations for Rocky Flats Environmental Technology Site.* Prepared for Rocky Flats Local Impacts Initiative, DOE RFFO, CDPHE, and EPA. (July)

U. S. Department of Energy (DOE), 1993. *Final No Further Action Justification Document for Rocky Flats Plant Low-Priority Sites (Operable Unit 16).* Prepared for DOE Rocky Flats Field Office by EG&G Rocky Flats, Inc., Golden, CO. (October)

DOE, 1994a. *Letter Report on the Colorado Department of Public Health and Environment Source Area Delineation and Risk-based Conservative Screen and the Environmental Protection Agency Areas of Concern Delineation for the Human Health Risk Assessment for Woman Creek Priority Drainage Area (Operable Unit No. 5), Rocky Flats Environmental Technology Site.* Rocky Flats Environmental Technology Site, Golden, CO. (November 28)

DOE, 1994b. *Letter Report on the Colorado Department of Public Health and Environment Source Area Delineation and Risk-based Conservative Screen and the Environmental Protection Agency Areas of Concern Delineation for the Human Health Risk Assessment for Walnut Creek Priority Drainage Area (Operable Unit No. 6), Rocky Flats Environmental Technology Site.* Rocky Flats Environmental Technology Site, Golden, CO. (October)

DOE, 1995a. *Human Health Risk Assessment Methodology for RFETS (Draft).* Prepared for DOE Rocky Flats Field Office by EG&G Rocky Flats, Inc., RF/ER-95-0088, Golden, CO.

DOE, 1995b. *Ecological Risk Assessment Methodology Technical Memorandum No. 2, Sitewide Conceptual Model (Draft Final).* Prepared for DOE Rocky Flats Field Office by EG&G Rocky Flats, Inc., Golden, CO. (March)

DOE, 1995c. *Ecological Risk Assessment Methodology Technical Memorandum No. 3, Ecological Chemicals of Concern (ECOCs) (Draft Final).* Prepared for DOE Rocky Flats Field Office by EG&G Rocky Flats, Inc., Golden, CO. (April)

U.S. Environmental Protection Agency (EPA), 1989a. *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A) (Interim Final).* Office of Emergency and Remedial Response, EPA/540/1-89/002, Washington D.C. (December)

EPA, 1989b. *Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual (Interim Final).* Office of Emergency and Remedial Response, EPA/540/1-89/001, Washington D.C. (March)

EPA, 1991a. *Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs.* Office of Emergency and Remedial Response, Quick Reference Fact Sheet 9355.3-02FS-3, Washington D.C. (April)

EPA, 1991b. *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions.* OSWER Directive 9355.0-30, Washington, D.C. (April 22)

EPA, 1992. *Guidance on Preparing Superfund Decision Documents (Preliminary Draft).* Office of Emergency and Remedial Response, Directive 9335.3-02, Washington D.C. (January)

EPA, 1994. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (Review Draft).* Environmental Response Team, Edison, NJ. (September 26)

EPA, Undated. *Record of Decision Checklist for No Action.*

Vertucci, F.A., Lavelle, B., Lewis, M., Love, J., and Wickstrom, M., 1995. *Ecological Risk Assessment Methodology for Rocky Flats Environmental Technology Site.* IN: Proceedings for ER '95, Denver, CO. (August 13-17)

ATTACHMENT 7

List of Repositories

RFCA Attachment 7
March 14, 1996

List of Repositories

Rocky Flats Reading Room
Front Range Community College Library
3645 W. 112th Avenue
Westminster, Colorado 80030
(303) 469-4435

Office of Customer Service
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South, A1
Denver, Colorado 80222
(303) 692-2035
(800) 886-7689

Citizens Advisory Board
9035 Wadsworth Parkway
Suite 2250
Westminster, Colorado 80021
(303) 420-7855

U. S. Environmental Protection Agency, Region VIII
Superfund Documents Room
5th Floor
999 18th Street
Denver, Colorado 80202-2466
(303) 293-1444

ATTACHMENT 8

Environmental Restoration and Waste Management
Milestones for FY 96

RFCA
Attachment 8
March 14, 1996

ER MILESTONES FOR FY96

1. Accelerated Action at Trench T-3 in OU-2

Trench T-3 is believed to be a potential source of volatile organic compound (VOC) and radionuclide contamination to groundwater. The accelerated action is a source removal. The action consists of excavating approximately 2240 cubic yards of source material from the trench, treating material using thermal desorption technology, placing processed soils back into the trenches (if appropriate), and adding clean soil (if needed) to return the terrain to its pre-excavation condition.

MILESTONE	Date
Completion of Source Material Excavation	July 30, 1996

2. Accelerated Action at Trench T-4 in OU2

Trench T-4 is believed to be a potential source of VOC and radionuclide contamination to groundwater. The accelerated action is a source removal. The action consists of excavating approximately 2240 cubic yards of source material from the trench, treating material using thermal desorption technology, placing processed soils back into the trenches (if appropriate), and adding clean soil (if needed) to return the terrain to its pre-excavation condition.

MILESTONE	DATE
Completion of Source Material Excavation	September 30, 1996

3. Accelerated Actions on IAG tanks on the Industrial Area

Accelerated actions will be completed at six Interagency Agreement (IAG) tanks in four Industrial Area Operable Units (OUs) (OU8, OU9, OU10, and OU13). The actions will consist of removal of the tanks' contents, rinsing the tanks, and filling the tanks with closed-cell foam for closure in place. All source materials in the tanks will be removed and treated using onsite treatment facilities.

MILESTONE	DATE
Completion of Tank Cleaning and Foaming	September 30, 1996

RFCA
Attachment 8
March 14, 1996

WM MILESTONES FOR FY96

1. Shipment of Saltcrete for Offsite Disposal

Saltcrete is disposed of offsite at Envirocare in Utah as low-level, mixed waste. This action consists of shipping "megashipments" of saltcrete for disposal offsite at a RCRA-permitted location. One megashipment of saltcrete (about 8400 cubic feet) has been transported to Envirocare in FY96 (December, 1995).

MILESTONE	DATE
Completion of 2nd megashipment for offsite disposal	September 30, 1996

2. Evacuation of Stored Waste and Solid Residue from Building 779

Building 779 has been targeted for deactivation in preparation for building demolition. Removal of drummed stored residue waste from the building is one of many activities needed to allow deactivation of the building and revision of the building authorization basis. This action consists of removal of the stored waste and drummed solid residues in the building, excluding SNM.

MILESTONE	DATE
Removal of stored waste and drummed solid residues from Building 779	September 30, 1996

3. Reactive Disposition

Some chemicals identified onsite and listed in the Excess Chemical Program are classified as Priority 1 Reactive Chemicals. This action consists of onsite treatment or offsite treatment/disposal of reactive chemicals. Treatment by UV, hydrolysis, dissolution, or other method will be used to render some target chemicals non-reactive. Shipment of other non-radioactive, reactive chemicals will be made to offsite, RCRA-permitted treatment/disposal facilities. Forty-eight Priority 1 Reactive Chemicals have been identified onsite.

MILESTONE	DATE
Treatment or disposal of 48 reactive chemicals	September 30, 1996

ATTACHMENT 9

BUILDING DISPOSITION

BUILDING DISPOSITION

PURPOSE

The purpose of this attachment is to define the process for building disposition, the standards for final building disposition, and process for waste management.

DEFINITION

Building disposition is defined as the sequence of activities required to take a building/facility from its existing condition to final disposition. In this attachment, the term "building disposition" is used to describe the entire process, and to avoid confusion with the preexisting meanings of Deactivation and Decommissioning terms in Department of Energy and Nuclear Regulatory Commission parlance. As used in this Attachment, "building" may refer to entire buildings, portions of buildings, or only to structures, systems, or components within buildings.

BUILDING DISPOSITION APPROACH

CHARACTERIZATION PROGRAM. A reconnaissance level characterization will be made to establish a preliminary estimate of the type of contamination or safety hazard present. All buildings and facilities at RFETS will have this preliminary characterization. The type and tractability of radiation and hazardous substances contamination, and physical hazards will be evaluated. Additional surveys to characterize contamination, as well as physical safety hazards, will be conducted throughout the disposition process.

SITE BUILDING DISPOSITION BASELINE. The characterization program provides the planning data base needed for estimating and scheduling the work required for disposition. A multi-year building disposition baseline will be developed, including estimates of resource needs. The building disposition baseline will be included in the sitewide integrated baseline.

OVERALL APPROACH. Unless building specific conditions otherwise warrant, the activities denoted below will be performed in each building:

a) containerized waste and material removed.
b) liquid waste and processing systems drained.
c) RCRA units closed or have a closure plan integrated with building disposition plan.
d) all TRU waste, defined as materials in excess of 100 nanocuries per gram, removed.
e) equipment, piping, ducts, gloveboxes, and major electrical components removed (i.e.

strip out).

f) radioactive hot spots and hazardous substances removed.
g) easily removed contamination removed.

Different areas within a single building can be at different phases in the disposition approach, e.g., one room can be undergoing deactivation, while the rest of the building is in post-deactivation. For those buildings where SNM activities never took place, the disposition process will begin with post-deactivation.

GENERAL PROCEDURES. General procedures are being developed for the entire site that will describe actions for building disposition and will include standard operating procedures (SOP's). The building disposition process will define decision making criteria and how SOP's will be applied. The SOP's will provide a detailed description of each work activity. Buildings determined at the time of the reconnaissance level characterization to have significant contamination or hazards will need building-specific disposition plans. For buildings determined at the time of the reconnaissance level characterization to be free of significant contamination or hazards, decontamination will be conducted under the general procedures codified in the Decommissioning Program Plan. When the Final Survey Report is accepted, the building will be available for reuse or dismantlement. Any building determined at the time of the reconnaissance level characterization to be free of contamination will go directly to reuse or dismantlement.

DECOMMISSIONING OPERATIONS PLANS. A Decommissioning Operations Plan will be developed for any building found as a result of its characterization to have significant contamination or hazards. The Decommissioning Operations Plan will present an activity-based program to decontaminate the locations identified in that building's preliminary characterization study as contaminated or presenting a physical hazard. Any proposals for cleanup of a building will include a risk, economic, and engineering assessment.

STANDARDS FOR BUILDING DISPOSITION

NEW REGULATIONS PROPOSED. The federal agencies (DOE, EPA and NRC) involved in radiation protection of the public and the environment have been developing new regulations for decommissioning. The three agencies recognize the need for consistency in the regulations that they are developing. A joint working group has been in existence for several years. In public discussion and in written status reports, the agencies continue to promise this consistency.

BUILDING RADIATION CLOSURE STANDARDS. It is DOE's intention to follow EPA's preliminary regulation that calls for an effective dose equivalent (EDE) of 15/75 mrem from the site in any single year above background. This means: (1) Conduct remediation so that, after completion of the remedial action, radioactive material in excess of background radiation levels shall not exceed concentrations that could cause any reasonably maximally exposed member of the public to receive, through all potential exposure pathways, an EDE of 15 mrem from the site in any single year. The 15 mrem will be calculated using exposure scenarios that are consistent with the land uses contemplated in the Vision; and (2) Determine that the remediation provides a reasonable expectation that, for 1000 years after completion of the remedial action in the event of failure of the active control measures, radioactive material in excess of background radiation levels shall not exceed concentrations that could cause any reasonably maximally exposed member of the public to receive, through all potential exposure pathways, an EDE of 75 mrem from the site in any single year. Once this EPA Site Remediation Regulation is promulgated as final, RFFO will modify its programs if necessary to comply with the requirements of the final regulation.

AREAS OF RADIOACTIVE CONTAMINATION. The parties agree to work together to establish measurement procedures to determine what areas of radioactive contamination will be decontaminated after strip out of a building is complete. The goal will be two fold: to reduce the residual radiation and to do so by an approach that minimizes the amount of waste generated. All building disposition practices will minimize the risk potentially associated with radiological exposure and all radiological exposures are to be balanced against economic and social factors producing a positive net benefit to the worker, general public, and the environment. The parties have agreed that all TRU waste will be isolated and removed from the buildings. TRU waste is a material having activity greater than 100 nCi/gm based on average bulk volume.

After strip out, further characterization of radioactive areas will be undertaken, where necessary. An evaluation will be made of technically applicable decontamination methods. As part of this evaluation, the type of waste expected to be generated and the cost of its treatment, storage and/or disposal will be estimated as well as the cost of required engineering and personal protective systems.

HAZARDOUS AND TOXIC SUBSTANCE CONTAMINATION. Measurement techniques will be selected for estimation of residual hazardous constituents after strip out. The thrust will be to identify areas of fixed contamination which will need to be segregated during demolition in order to minimize waste generation volume and management cost for treatment and/or disposal. The techniques to remove identified areas of hazardous substance contamination will be included in building specific disposition plans. In buildings

where the decision is made to forego the preparation of building specific disposition plans, hazardous substance contamination will be dealt with on a task order basis, with application of known well-tested technology.

WASTE MANAGEMENT

WASTE ACTIVITIES. When the disposition process is carried out in an individual building, the waste generated will be segregated by type: radioactive, mixed, hazardous, or sanitary. If the particular type of waste is planned to be disposed of off site in the near term, then the waste should be packaged to meet the waste acceptance criteria of the off site facility. The determination of whether a generated waste is TRU, will be made by assaying the crate after packaging and establishing its activity on a weight basis. The waste determination for low level waste will be made based on the presence of radiation in the material before its removal. Attention will be given to waste minimization, in this case, the effort will be to remove the areas of radiation contamination, while segregating the contamination from the bulk (uncontaminated) material.

Should the decision be made to store the waste on site in an interim storage facility, the waste acceptance criteria would again be set based on the planned interim storage. If the waste is to packaged (containerized) at the point of origin for later shipment, the procedure for waste packaging will be established to conform to that requirement

Reuse or solid waste designations will be made for equipment that passes the free-release criteria and meets government surplus requirements. Hazardous waste determinations will be made based on the characteristic of the solid waste at the point of generation.

ATTACHMENT 10

RCRA Closure for Interim Status Units

RFCA
Attachment 10
March 14, 1996

RCRA Closure for Interim Status Units

I. For closure of land-based units at RFETS subject to interim status requirements, DOE must, at a minimum:

A. Place a cap/cover over the unit using two design criteria:

1. "design concentration limits (DCLs)" calculated to be protective of the most directly impacted surface water.
   - DCLs would be calculated on a unit-specific basis for ground water passing the downgradient unit boundary.
   - DCLs assume an ongoing release from the unit, but at levels that are protective of human health and the environment, consistent with the Draft Vision.
   - DCLs as a cap/cover design criteria will be presented within the appropriate decision document.
2. for units with existing ground water contamination, the cap/cover must be designed to control any remaining source only to the extent that further contaminant contribution to the plume from the unit is not capable of enlarging the plume or increasing contaminant concentrations within the plume. The parties recognize that existing plumes may continue to migrate or expand independent of continued source contamination loading. As a design criteria for a cap/cover, the unit/source must have it's rate of continuing release controlled to the extent necessary to prevent enlarging the plume or increasing contaminant concentrations.

B. After the cap/cover has been installed, points of compliance (POCs) for each unit will be determined. The POCs will be chosen based on:

1. utilizing existing monitoring wells to the greatest extent possible, and
2. utilizing "waste management areas" (see CHWR, Section 264.95(b)(2)) which would, to the extent practicable, be equivalent to the existing OU boundary.

C. At the POCs, compliance would be based on:

1. exceedance of "alternate concentration limits (ACLs)" at units/areas with no ground water contamination or levels of contamination less than the ACLs, and
2. generally declining contamination levels for units/areas with pre-existing ground water contamination levels greater than the ACLs.
3. ACLs would be calculated on a unit/area specific basis to be protective of the most directly impacted surface water from an appropriate suite of contaminants. The ACLs assume an ongoing release from the unit, but at levels that are protective of human health and the environment, consistent with projected land and water uses for the site (see RFCA Attachment 5 - Action Levels and Standards Framework). To the extent that points of compliance are unit boundaries, the ACLs should equal the

DCLs for those units. ACLs will be different from the DCLs when several units have been consolidated within a waste management area.

4. The POCs and ACLs will be designated within the appropriate decision document and approved by the regulators when the decision document is approved.

D. "Dirty" closure requirements will not extend to remediation or management of existing ground water contamination from these units except as delineated in B.2 above. Existing ground water contamination will be addressed through coordinated RCRA corrective action/CERCLA remedial action, as described in RFCA and the Action Levels and Standards Framework (RFCA Attachment 5).

E. Other large-scale remedial actions taken at RFETS may enhance the ability to comply with these requirements for certain regulated units. For instance, units that can benefit from large-scale dewatering or ground water diversion projects may be able to easily demonstrate ACL compliance with a minimal non-standard cover/cap.

F. All closures will be performed in accordance with the Environmental Priorities List.

G. All wastes generated during implementation of a closure action will be considered "remediation wastes" for the purpose of CAMU utilization.

II. To meet the closure requirements for all other <u>non land-based</u> units subject to interim status requirements (portions of the former OU 9, OU 10 and OU 13), assuming these units have had a release into the environment, DOE must, at a minimum:

A. Remove all liquid wastes from the units.

B. Close the <u>units</u>, without regard to releases from the units to either soils or ground water. For the tanks and storage areas that make up this universe of units at RFETS, this should be able to be accomplished via:

1. decontamination, and/or
2. removal and appropriate disposition/disposal, and/or
3. backfilling a tank with material that effectively and permanently immobilizes any remaining contaminants.

C. Address any releases from these units through coordinated RCRA corrective action/CERCLA remedial action, as described in RFCA and the Action Level Framework.

D. All closures will be performed in accordance with the Environmental Priorities List.

E. After initially removing hazardous waste inventory from the units, all wastes generated during implementation of a closure action will be considered "remediation wastes" for the purpose of CAMU utilization.

III. CDPHE and DOE agree that past decisions regarding which IHSSs within former OUs

9, 10, and 13 are interim status units subject to closure requirements shall be reviewed. Based upon this review, it is the expectation of the CDPHE and DOE that several of these units are not subject to interim status closure requirements.

ATTACHMENT 11

List of Addresses

RFCA
Attachment 11
March 14, 1996

List of Addresses

Environmental Protection Agency, Region VIII
ATTN: Rocky Flats Project Manager, 8HWM-FF
18th Street, Suite 500
Denver, Colorado 80202-2466

RFCA Unit Leader
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222

RFCA Project Coordinator
United States Department of Energy
Rocky Flats Field Office
Box 928
Golden, Colorado 80402-0928

ATTACHMENT 12

RFCA Documents Index

RFCA Documents Index

1. Quality Assurance Criteria Document, Rev. 1, Kaiser-Hill Company, L.L.C., effective 2/2/96 (Or most current version).

2. Historical Release Report for the Rocky Flats Plant, Volumes I and II, U.S. Department of Energy, June 1992.

3. Existing ER Standard Operating Procedures.

4. Rocky Flats Plant Community Relations Plan, U.S. Department of Energy, December 1, 1991.

5. Treatability Study Workplans listed in the Administrative Record.

6. Health and Safety Practices, EG&G Rocky Flats, Inc., (Adopted by Kaiser-Hill Company, L.L.C. in July 1995) September 30, 1995 (Or most current version).

7. Plan for Prevention of Contaminant Dispersion, U.S. Department of Energy, February 1992.

8. Background Geochemical Characterization Report Rocky Flats Plant, U.S. Department of Energy, September 30, 1993.

9. Final Treatability Studies Plan, Volumes I and II, U.S. Department of Energy, August 1991.

10. Final resolutions of previous disputes that are relevant to implementation of RFCA. The Administrative Record shall be reviewed for such resolutions. and this list will be updated accordingly.

PAMS

11. Department of Energy, Proposed Action Memorandum Hotspot Removal Rocky Flats Plant Operable Unit 1, Rocky Flats Plant, Golden, Colorado, September 1994.

12. Department of Energy, Final Proposed Action Memorandum Remediation of Polychlorinated Biphenyls, Rocky Flats Environmental Technology Site, Golden, Colorado, May 1995.

13. Department of Energy, Modified Proposed Action Memorandum Passive Seep Collection and Treatment Operable Unit 7, Rocky Flats Environmental Technology Site, Golden, Colorado, July 1995.

14. Department of Energy, Final Proposed Action Memorandum for the Remediation of Individual Hazardous Substance Site 109, Ryan's Pit, Rocky Flats Environmental Technology Site, Golden, Colorado, August 24, 1995.

15. Department of Energy, Final Proposed Action Memorandum Remediation and Draft Modification of Colorado Hazardous Waste Corrective Action Section of the Operating Permit for Rocky Flats Environmental Technology Site, Rocky Flats Environmental Technology Site, Golden, Colorado, October 1995.

RFCA Documents Index (Cont'd)

16. Department of Energy, Draft Proposed Action Memorandum Remediation for the Contaminant Stabilization of Underground Storage Tanks, Rocky Flats Environmental Technology Site, Golden, Colorado, February 14, 1996 (NOTE: The PAM is out for public comment).

17. Department of Energy, Proposed Action Memorandum for the Source Removal at Trenches T-3 and T-4 IHSSs 110 and 111.1, Rocky Flats Environmental Technology Site, Golden, Colorado, August 24, 1995 (NOTE: The PAM has been through the public comment period; however, EPA has not provided comments).

IM/IRAs

18. Department of Energy, Final Interim Measures/Interim Remedial Action Decision Document for Rocky Flats Industrial Area, Rocky Flats Environmental Technology Site, Golden, Colorado, November 1994.

19. Department of Energy, Operable Unit 4 Solar Evaporation Ponds Interim Measures/Interim Remedial Action Environmental Assessment Decision Document, Rocky Flats Environmental Technology Site, Golden, Colorado, February 1995.

20. Department of Energy, Interim Measures/Interim Remedial Action Plan and Decision Document, 881 Hillside Area, Operable Unit No. 1, Rocky Flats Plant, Golden, Colorado, January 1990.

21. Department of Energy, Final Surface Water Interim Measures/Interim Remedial Action Plan/Environmental Assessment and Decision Document South Walnut Creek Basin, Rocky Flats Plant, Golden, Colorado, October 1994.

NOTE: The last two IM/IRA references (January 1990 IM/IRA and the October 1994 IM/IRA) were administratively combined in 1995.

CAD/RODs

22. Department of Energy, Corrective Action Decision/Record of Decision, Operable Unit 11: West Spray Field, Rocky Flats Environmental Technology Site, Golden, Colorado, September 1995, Approved October 1995.

23. Department of Energy, Corrective Action Decision/Record of Decision, Operable Unit 15: Inside Building Closures, Rocky Flats Environmental Technology Site, Golden, Colorado, September 1995, Approved October 1995.

24. Department of Energy, Corrective Action Decision/Record of Decision, Operable Unit 16: Low Priority Sites, Rocky Flats Environmental Technology Site, Golden, Colorado, August 1994, Approved October 1994.

ATTACHMENT 13

UST CLOSURE LETTER AGREEMENT

RFCA
Attachment 13
March 14, 1996

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-3300
Fax (303) 759-5355

222 S. 6th Street, Room 232
Grand Junction, Colorado 81501-2768
Phone (303) 248-7164
Fax (303) 248-7198

Colorado Department
of Public Health
and Environment

March 13, 1996

Mr. Mark Silverman
U. S. Department of Energy
Rocky Flats Office, Bldg 116
P.O. Box 928
Golden, Colorado 80402-0928

Dear Mr. Silverman,

The purpose of this letter is to describe how CDPHE and the Oil Inspection Section of the Colorado Department of Labor and Employment (OIS) will coordinate Rocky Flats Cleanup Agreement (RFCA) activities in the Industrial Area of RFETS that are regulated by the Colorado Petroleum Storage Tanks Act (Tanks Act).

OIS is the state agency responsible for implementation of the Tanks Act. However, pursuant to the Draft RFCA, Part 8, Regulatory Approach, CDPHE has been designated the Lead Regulatory Agency (LRA) for RFCA activities in the Industrial Area, including activities associated with implementation of the Tanks Act. Therefore, at RFETS, CDPHE will consult with OIS as described in this letter. To facilitate coordination among the parties, CDPHE, in its role as LRA, will assure that the substantive UST closure and remediation requirements are met.

All of the Underground Storage Tanks (USTs) on RFETS are owned by DOE, but are currently operated by a contractor or sub-contractor to DOE. Kaiser-Hill is overseeing the closure of 20 of the USTs, 18 of which have been and are currently being used to store diesel fuel and two of which have been and are currently being used to store gasoline.

Closure of the Tanks: Prior to closing 19 of the 20 USTs, an above-ground storage tank (AST) will be installed near the location of the USTs. Fuel in each UST will be transferred to the AST, each UST will be appropriately cleaned and then sealed with closed cell polyurethane foam. The remaining UST will be closed in place, but will not be replaced with an AST. OIS will be responsible for rendering permit decisions for any ASTs that require permits.

Assessment and Remediation of Any Tank Releases: Four of the 20 USTs are situated behind Building 331, the Site's garage (the Garage Tanks). Two of the Garage Tanks have been and are currently being used to store diesel fuel, and two have been and are currently being used to store gasoline. An assessment of the Garage Tanks has already been conducted. The first assessment was done by CH2M Hill in 1992. This investigation was undertaken when stained soils were discovered around the fill pipes during the installation of spill and overfill prevention equipment. CH2M Hill concluded that the staining was caused by several spills that occurred prior to the area having been paved with asphalt. CH2M Hill prepared and submitted to the State a report describing those activities. Weston conducted a further assessment of the area during 1994 and 1995. Weston assessed the soil, installed four groundwater monitoring wells, twice sampled the groundwater, and prepared and submitted to the State a Site Characterization Report and Corrective Action Plan and Groundwater Monitoring Reports. The analytical results for the groundwater samples all tested non-detect for BTEX and TPH. OIS has already agreed, and CDPHE endorses, that the Garage Tanks may be closed in place without any further assessment of the soil or groundwater. This agreement includes the proper abandonment of the four groundwater monitoring wells near the Garage Tanks should DOE decide to do so.

RFCA and the RFETS Vision incorporate continuing restricted land use for the site (open space and industrial use only), and development of a Site-wide groundwater strategy. Using these aspects of RFCA and the fact that diesel constituents are not very mobile, CDPHE, DOE, and OIS agree that the following site assessment will be conducted for each of the remaining 16 tanks, all of which stored diesel fuel: One geoprobe sample will be taken on each side of each tank, as close to the tank as is possible and in the backfill, if possible. The geoprobe will be driven at least to the bottom of the original trench for each tank. A soil sample will be collected at the bottom of the fill, or at an equivalent depth if outside the backfill, or one foot above the ground water, if ground water is present above the bottom of the fill material. Each soil sample will be field tested for TPH. In addition, although there is no requirement to drive the geoprobe to groundwater, groundwater will be field tested for TPH if encountered. For any tank with sample results below 5,000 ppm of TPH, the tank may be closed in place without further remedial action.

Given the need to coordinate both the installation of the ASTs as well as the closure of each UST, CDPHE, DOE, OIS, and Kaiser-Hill agree that one closure report will be submitted to CDPHE and OIS for review when all of the USTs have been assessed that includes all

tanks that meet the agreed upon 5000 ppm TPH standard. CDPHE will coordinate the review of the report with OIS, as well as any comments thereto, and will approve or disapprove the report as LRA pursuant to RFCA, Part 8, Paragraph 113(j), "Closeout Reports".

For any tank with sample results above 5,000 ppm of TPH, CDPHE, DOE, OIS, and Kaiser-Hill will meet to discuss further action to be taken, if any. On the basis of these discussions, one or more of the following actions will be taken:

1. a closure report will be submitted pursuant to the previous paragraph for each tank for which no further action is required;
2. the parties will initiate the process to revise, if necessary, the Site-wide ground water strategy;
3. a Proposed Action Memorandum (PAM) will be prepared covering all tanks for which corrective action is to be taken. This PAM will include the corrective action requirements for each tank and associated contamination, but will not need to identify utilities. CDPHE will coordinate the review of the PAM with OIS, as well as any comments thereto, and will approve or disapprove the PAM as LRA pursuant to RFCA, Part 8, Paragraph 113(k), "PAMs".

If you have any questions regarding these matters, please call CDPHE at the number below.

Sincerely,

Joe Schieffelin, Unit Leader
Federal Facilities Program
CDPHE
303-692-3356

for Dennis C. Hoover
Richard O. Piper
State Inspector of Oils
CDOLE

APPENDICES

APPENDIX 1

Memorandum of Understanding
Governing Regulation and Oversight
of Department of Energy Activities in the
Rocky Flats Environmental Technology Site
Industrial Area

APPENDIX 1

Memorandum of Understanding
Governing Regulation and Oversight
of Department of Energy Activities in the
Rocky Flats Environmental Technology Site
Industrial Area

Department of Energy
Environmental Protection Agency
Colorado Department of Public Health and Environment
Defense Nuclear Facilities Safety Board

March 14, 1996

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Memorandum of Understanding

I. BACKGROUND AND STATEMENT OF PURPOSE

The Department of Energy (DOE) manages a government-owned, contractor-operated facility at Rocky Flats in the State of Colorado that formerly played a major role in the production of nuclear weapons. Weapons production has ceased and the mission has changed primarily to decommissioning. Most remaining operations are dedicated to stabilization, treatment, safe storage, and containment of special nuclear materials (SNM) and waste at the site. Activities at the site, now named the Rocky Flats Environmental Technology Site (RFETS), range from interim storage of plutonium pits awaiting final disposition off-site, to removal and remediation activities at designated operable units under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Colorado Hazardous Waste Act (CHWA), and Resource Conservation and Recovery Act (RCRA).

Three independent entities currently oversee and regulate environmental, health, and safety aspects of DOE activities at RFETS. These entities are the U.S. Environmental Protection Agency (EPA), the Defense Nuclear Facilities Safety Board (DNFSB or Board), and the Colorado Department of Public Health and Environment (CDPHE). In some circumstances, these entities exercise concurrent jurisdiction over facilities or materials as the result of overlap in applicable statutory provisions. For example, cleanup of a facility contaminated with mixed radioactive waste is subject to regulation by EPA and Colorado, pursuant to CERCLA, RCRA, and CHWA (depending on the nature of the cleanup action), as well as by DOE and the Board pursuant to the Atomic Energy Act of 1954, as amended (AEA). Plutonium and other nuclear materials mixed with hazardous waste are subject to RCRA permits governing treatment, storage, and disposal of the hazardous component of "mixed" waste, and are also subject to Board safety oversight of nuclear waste storage. DOE regulates activities related to special nuclear material, subject to DNFSB oversight, under the AEA.

In this Memorandum of Understanding (MOU), the three regulatory/oversight entities agree to cooperate by fulfilling their respective legal responsibilities in an integrated manner designed to minimize impediments to progress in DOE's cleanup and decommissioning efforts. DOE is provided with a single qualified entity serving as coordinator for each activity. The objective is to prevent redundant and potentially wasteful regulation or oversight of DOE activities in the RFETS Industrial Area during remaining operations, deactivation, and decommissioning. At a joint meeting of the principals on October 10-11, 1995, in Denver, the four entities agreed to discuss protocols whereby DOE would interface with a single entity, and would be subject to a single set of consistent standards and requirements, for any given operation, decommissioning, or cleanup activity. The goal is to establish a single primary regulator ("primary entity") with authority and responsibility for each activity. The other regulatory/oversight entities are expected, to the extent permitted by law, to work through the primary entity in resolving environmental, safety, and health issues with DOE.

This draft MOU is the result of discussions among DOE and the three entities following the Denver meeting, and details the procedures and protocols governing interactions among the

regulatory and oversight entities. Substantive safety, environmental, and health requirements and protocols for operations, decontamination, and decommissioning activities are being developed by another working group.

This MOU adheres to the following general principles:

1. Each of the four entities (DOE, EPA, DNFSB, and CDPHE) recognizes the legitimate interests of the other entities, and the citizens of the State of Colorado and the nation at large, in the operation, decommissioning, cleanup and environmental restoration of RFETS in a manner that adequately protects public health and safety and the environment.

2. Each of the four entities agrees that the primary entity will keep the public appropriately informed of environmental, safety, and health activities at the site and involve the public in the decision-making processes to the extent allowed by law.

3. To avoid inefficient duplication of regulation and oversight of DOE activities at RFETS, the four entities agree to:

   a. Recognize the need for different entities to play primary, secondary, and other roles in the regulation and oversight of different activities occurring at RFETS from now until completion of environmental restoration. These roles are largely determined by the strength of statutory mandates and the expertise possessed by the various entities;

   b. Cooperate in preparing and commenting on, or concurring with, as appropriate, a site-wide deactivation and decommissioning plan for RFETS, to be completed by the end of 1996; and

   c. Review and comment on, or concur with, as appropriate, project plans for major facilities, for example, buildings 371, 771, 776/777, 707, and 991, and in standards/requirements identification documents ("S/RIDs") and other standards designed to govern the deactivation and decommissioning process with an eye toward early resolution of any environmental, safety, and health issues and toward avoiding conflicts and disputes which can delay the process.

4. Statutory responsibilities and jurisdiction of the four entities are not expanded, diminished, or altered by the terms of this MOU. The AEA, and Federal and State environmental, safety, and health statutes prescribe responsibilities that must be accommodated. For example, regardless of the designation of a primary entity, federal agencies retain emergency response powers that cannot be overridden given a substantial threat of release of a hazardous substance into the environment, or an imminent or severe threat to public health or safety. Moreover, the State must protect its citizens from any

threats to their health and safety arising at RFETS. Both EPA and State authorities retain responsibilities for enforcement against violations of the law. The Board retains responsibility for issuance of safety recommendations to the President or the Secretary of Energy if "necessary to adequately protect public health and safety."

Advantages of this MOU process include:

- Streamlining EPA/CDPHE into a lead regulator for environmental regulatory activity;
- Identifying a single set of consistent requirements for all activities in the Industrial Area;
- Identifying a primary regulatory/oversight entity for each activity to serve as the point-of-contact for DOE. Secondary entities may independently monitor and inspect activities in a manner that does not adversely impact DOE or the contractor, and shall work through the primary entity to resolve any concerns identified, to the extent allowed by law;
- Identifying a dispute resolution process that will ordinarily be used before an entity exercises its enforcement or reserved statutory authority;
- Satisfying the environmental, safety, and health priorities of each entity; and
- Preserving mandatory statutory responsibilities of each entity in the event disputes cannot be resolved through the process delineated in this MOU.

II. REGULATORY AND OVERSIGHT ROLES

A. Primary Regulatory / Oversight Entity

A primary regulatory/oversight entity (hereinafter referred to as primary entity) is either CDPHE, EPA, or DNFSB, and will take the lead in regulation or oversight of designated DOE activities. (See Figure 1.) Primary entities in this MOU have been selected based upon the scope and depth of the entities' legal responsibilities for the activities and materials covered, and upon the recognized expertise which each primary entity brings to the environmental, safety, and health problems associated with those activities and materials.

B. Secondary Regulatory / Oversight Entities

A secondary regulatory/oversight entity (hereinafter referred to as secondary entity) is either CDPHE, EPA, or DNFSB. Secondary entities possess special expertise or legal responsibilities for regulating or overseeing aspects of the activities or materials covered

and agree to work through the primary entity in resolving environmental, safety, and health issues with DOE, to the extent allowed by law. Secondary entities support monitoring or inspection activities of the primary entity, but are not precluded from conducting independent inspection activities or acquiring information, consistent with statutory responsibilities. A secondary entity's health, safety, and environmental comments, findings, and concerns will be presented to, and resolved with, DOE through the primary entity, to the extent allowed by law.

Secondary entities will either review and concur with, or review and comment to, the primary entity on DOE's activities and the primary entity's regulatory/oversight proposal, plan, finding, compliance activity, or other action, as appropriate. (See Figure 1 text.) Concurrence is achieved if consensus is reached between the primary and secondary entities with respect to the regulatory or oversight issues. Primary entities will consider the comment of entities with review and comment authority as identified in this MOU. However, with respect to entities with review and comment authority, there is no obligation on the part of the reviewing entity to provide comments in all cases. With respect to any secondary entity, there is no obligation on the part of primary entities to reach consensus with the secondary entities. In the event a secondary entity cannot fulfill its statutory obligations by working through the primary entity, the secondary entity may invoke the dispute resolution clause as appropriate prior to invoking the reserved authority clauses of this MOU. Secondary entities having the right under this MOU to review and concur, but having no jurisdiction over materials or activities, will have no further role under this MOU after exhausting the dispute resolution process with the primary entity.

III. DEFINITIONS

The following definitions are not universally-accepted, but have been provided for the purpose of interpreting and using this MOU.

A. *Decommissioning*

DOE defines decommissioning in its Decommissioning Resource Manual, DOE/EM-0246, August 1995, to be that which takes place:

> After deactivation and includes surveillance and maintenance, decontamination and/or dismantlement. These actions are taken at the end of life of the facility to retire it from service with adequate regard for the health and safety of workers and the public and protection of the environment. The ultimate goal of decommissioning is unrestricted release or restricted use of the site.

> Surveillance and Maintenance is a program established during deactivation and continuing until phased out during decommissioning to provide in a cost effective manner for satisfactory containment of contamination; physical safety and security controls; and maintenance of the facility in a manner that is protective of workers, the public, and the environment. (Decommissioning Resource Manual, § 3.3.)

This definition confines the decommissioning phase in a facility's life cycle to the period following deactivation, defined below.

B. *Decontamination*

The removal or reduction of radioactive or hazardous contamination from facilities, equipment or soils by washing, heating, chemical or electrochemical action, mechanical cleaning or other techniques to achieve a stated objective or end condition. (Decommissioning Resource Manual, § 3.3.)

"Decontamination" is not a phase in the life of a facility. Rather, it is a process that can be initiated at any point in the life of a facility to reduce system, structure, or component radioactivity and hazardous materials levels for a specific purpose.

C. *Deactivation*

The process of placing a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program that is protective of workers, the public, and the environment until decommissioning is complete. Actions include the removal of fuel, draining and/or de-energizing of nonessential systems, removal of stored radioactive and hazardous materials and related actions. As the bridge between operations and decommissioning, based upon facility-specific considerations and final disposition plans, deactivation can accomplish operations-like activities such as final process runs, and also decontamination activities aimed at placing the facility in a safe and stable condition. (Decommissioning Resource Manual, § 3.3.) Deactivation does not include all decontamination necessary for the dismantlement and demolition phase of decommissioning, i.e., removal of contamination remaining in the fixed structures and equipment after deactivation.

D. *Dismantlement*

The disassembly or demolition and removal of any structure, system, or component during decommissioning and satisfactory interim or long-term disposal of the residue from all or portions of the facility. (Decommissioning Resource Manual, § 3.3.) Residue in this context refers only to contamination remaining in the fixed structures and equipment remaining after deactivation.

E. *Storage*

A process that takes place throughout the life of a facility, consisting of retrievable retention of material or waste pending final disposition.

F. *Decommissioning of Defense Nuclear Facilities*

Regarding defense nuclear facilities in the context of the AEA, decommissioning includes the combined deactivation, decontamination, and dismantlement activities necessary to remove or reduce the radiological health and safety hazards of a facility to a level below which adequate protection of the health and safety of workers and the public can be assured without oversight. These actions ultimately render a facility incapable of functioning as a defense nuclear facility. At that point, the facility is "decommissioned." This definition of decommissioning for defense nuclear facilities subsumes the various DOE subdivisions of decommissioning, including "deactivation," "surveillance and maintenance," "decommissioning," and "dismantlement."

This particularized definition of decommissioning is included to illuminate the scope of the Board's statutory obligations regarding oversight of defense nuclear facilities.

G. *Defense Nuclear Facilities*

A Department of Energy nuclear production, utilization, or waste storage facility at any stage of its life cycle from design, construction, operation, to decommissioning, as further defined by the AEA.

H. *Plutonium Operations Buildings*

Those buildings at Rocky Flats, which, until fully decommissioned, store or contain plutonium metal or residue. See Public Law 102-190 at §§ 3133(a), (e). Such buildings may also be facilities containing RCRA mixed waste if plutonium or other radionuclides are contaminated with RCRA hazardous waste.

I. *Radioactive Materials and Waste*

1. *Special Nuclear Material*

Plutonium, uranium enriched in the isotope 233 or in the isotope 235, any other material artificially enriched by these materials, and any other materials identified by DOE or the NRC, as stated in AEA § 2014 (aa).

2. *TRU Materials*

Elements that have an atomic number greater than 92 (uranium), including neptunium, plutonium, americium, and curium.

3. *TRU Waste*

Without regard to source or form, waste that is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100 nCi/g at the time of assay.

4. *RCRA Mixed Hazardous and Radioactive Waste*

Waste that contains both hazardous waste subject to RCRA and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2011 et seq.).

5. *Low Level Radioactive Waste*

Radioactive waste that is not high level waste, spent nuclear fuel, or byproduct material. Low-level radioactive waste is further defined in the Low Level Radioactive Waste Policy Act, codified in 42 U.S.C.A. § 2021b(9), and its attendant regulations.

6. *Mixed Low Level Radioactive Waste*

RCRA mixed waste, as defined above, where the radioactive component is low level radioactive waste, also as defined above.

7. *TRU-Mixed Waste*

RCRA mixed waste, as defined above, where the radioactive component is TRU waste, also as defined above.

J. *Regulatory Authority*

Regulatory authority is the ability, granted by statute, to oversee, control, direct, or restrict another person's or entity's action by regulation/rule or other legally enforceable order, specification, or requirement. Rulemaking, licensing, permitting, compliance, and enforcement actions are means by which an entity implements its regulatory authority.

K. *Independent Oversight Authority*

Independent oversight authority is the ability to scrutinize the programs and activities of another person or entity to determine compliance with an established set of legal or technical requirements. For purposes of this MOU, it includes investigative powers, performance of technical assessment, and submission of the results to the entity for corrective action.

Oversight is a function often performed by regulatory entities. However, oversight authority does not include a grant of full regulatory authority to control, direct, or restrict another's action by rules, orders, or requirements. Typical functions of an oversight entity are to investigate, observe, and evaluate performance against applicable requirements and standards, conduct technical assessments and hearings, gather technical information, and suggest corrective action to the overseen entity.

IV. RESPONSIBILITIES OF A PRIMARY ENTITY

DOE is responsible for all activities at RFETS, including: (1) remaining nuclear defense activities and deactivation under the AEA, subject to DNFSB oversight of safety in defense nuclear facilities; (2) compliance with applicable environmental laws and requirements, including permits and other requirements under RCRA and CHWA, subject to CDPHE regulation; and (3) hazardous substance and hazardous constituent removal, decommissioning and site remediation under applicable environmental laws and requirements, including CERCLA, CHWA, and RCRA, subject to EPA and CDPHE regulation. RFETS is now dedicated primarily to DOE waste management, environmental cleanup, and restoration activities, regulated by EPA and CDPHE. In making the transition from operational facilities, through deactivation, decommissioning, and environmental restoration, to materials storage and post-closure care, the regulatory and oversight entities must cooperate to make a smooth transition while maintaining adequate protection of the environment, safety, and health. Under this MOU, DOE will be subject to lead regulation or oversight by one of the three regulatory or oversight entities for each activity at RFETS covered by this MOU.

A primary regulatory or oversight entity shall be selected from EPA, CDPHE or DNFSB and shall:

1. Fully execute its statutory responsibilities for regulation and oversight of DOE activities in a manner consistent with the roles ascribed to other entities in this MOU, to the extent allowed by law.

2. Investigate, evaluate, review, or inspect DOE facilities, and activities, as appropriate, and consult with the secondary entities regarding the evaluation, review, or inspection. Representatives of the other two entities may be present during evaluations or inspections and shall be entitled to share resulting inspection/evaluation information subject to the

requirements of law, including those laws governing classified national security information, restricted data, and unclassified, controlled nuclear information. Review and concurrence will be sought by the primary entity from secondary entities with jurisdiction over aspects of an activity or material. In areas of expertise, entities with review and comment authority will consult, at their discretion, with the primary entity and offer appropriate comment on environmental, health, and safety issues.

3. Interact with DOE as the point of contact on behalf of all entities having responsibilities for regulation or oversight of a given activity or material. For example, the primary entity shall incorporate into its own review and findings, where appropriate, concerns or results submitted by secondary entities monitoring the activity; the primary entity shall resolve with DOE findings or comments by the secondary entities.

4. Consult with the secondary entity or entities prior to reviews, evaluations, or inspections to ensure that the requirements imposed on, and proposals made to, DOE for any given activity:

   a. represent the complete set of requirements and corrective actions necessary for statutory compliance by DOE for protection of the health and safety of workers and the public and protection of the environment;

   b. avoid duplication of effort by DOE or the primary entity;

   c. are based upon those necessary for statutory compliance (which is not to say that DOE cannot voluntarily commit to activities which exceed minimum statutory requirements);

   d. do not impose conflicting requirements; and

   e. are, to the extent practicable, agreed upon by the primary and any secondary entities prior to commencement of work affected by the requirements and recommendations.

5. Review, with the secondary entity or entities, plans "up front" to ensure that requirements imposed on, and corrective actions proposed to, DOE meet the above criteria, with the goal being that activities subject to concurrent regulatory or oversight jurisdiction are not delayed by belated disagreements among the primary and secondary entities over the set of requirements to be imposed, or how those requirements are to be implemented.

6. Provide a smooth transition of regulatory or oversight leadership as activities in RFETS facilities shift from one phase or life cycle to another. The primary entity, in consultation with the entity which will become the primary entity after the transition, will

determine when a particular activity or phase has been completed.

V. RESPONSIBILITIES OF A SECONDARY ENTITY

This MOU designates primary and secondary entities in those areas where the parties jointly have legal responsibilities to oversee or regulate the same RFETS activity. However, to the extent allowed by law, the secondary entity shall seek to execute its regulatory and oversight responsibilities by working with the primary entity for the particular activity and materials involved. (See Figure 1.) This cooperation is necessary to facilitate one of the most important purposes of this MOU: to provide DOE with a single coordinating regulatory or oversight entity for environmental, safety, and health regulation/oversight of each activity covered by this MOU. Secondary entities may not abdicate their statutory obligation to oversee/regulate activities within their jurisdiction. The dispute resolution and reserved authority clauses of this MOU may be invoked under the circumstances described in section VIII to resolve issues between the primary and secondary entities.

Secondary entities will either review the activities of primary entities and concur with those activities, or they will review and comment on those activities.

- Review and concurrence connotes the step a primary entity will take in seeking concurrence from a secondary entity, within its area of jurisdiction, over aspects of a regulatory or oversight action. Lack of concurrence indicates a need for further consultation between primary and secondary entities, but does not constitute a veto of the primary entity's proposed activity. A non-concurring secondary entity that cannot resolve its concerns through consultation with the primary entity shall initiate the dispute resolution process if required by section VIII of this MOU.

- Review and comment authority means that, in areas of expertise, secondary entities may, at their discretion, consult with the primary entity and offer appropriate comment on environmental, health, and safety issues.

VI. IDENTIFICATION OF THE PRIMARY ENTITY FOR VARIOUS ACTIVITIES AT ROCKY FLATS

A. SCOPE OF MOU COVERAGE

This MOU applies to activities in the area termed "the Industrial Area" at RFETS, both within buildings and in the environment directly associated with RFETS facilities. Many of these activities, depending on their nature, fall within the jurisdiction of one or more regulatory or oversight entities, as shown in Figure 1. For example, DOE maintains temporary storage of plutonium pits, uranium, and other defense materials, subject to DNFSB oversight, in certain facilities pending a decision on their final disposition. A

small number of plutonium operations buildings will be utilized for stabilization of plutonium residues prior to final disposition of those residues, also subject to DNFSB oversight. Other buildings and equipment are used for the treatment, storage, and disposal of RCRA hazardous wastes, transuranic mixed waste, and other mixed RCRA waste containing both hazardous and radioactive waste. These activities are subject to CDPHE regulation, and mixed waste also is subject to DNFSB oversight. Portions of RFETS are contaminated from releases of hazardous substances and are regulated under the removal and remedial action provisions of CERCLA and the closure and corrective action provisions of RCRA/CHWA, subject to EPA and CDPHE regulation, as appropriate. The Rocky Flats Cleanup Agreement (RFCA) will address specific authority for environmental restoration.

B. ENTITY ROLES

The following designations identify the entity that will serve as the primary regulatory/oversight entity for various activities at facilities scheduled to be decommissioned at RFETS. These designations are displayed in Figure 1. Figure 1 also specifies subsidiary roles of secondary entities.

In general, CDPHE has primary regulatory responsibility for hazardous waste treatment, storage, and disposal facilities at RFETS, pursuant to its RCRA/CHWA legal requirements. That responsibility includes regulation of hazardous waste and the hazardous component of mixed waste.

DNFSB has primary responsibility for temporary safe storage of plutonium pits, uranium, and other AEA special nuclear materials which are not waste, as well as low level radioactive waste, until final disposal; safety of plutonium and other SNM operations necessary to stabilize residues or to deactivate a facility; safe final disposition of SNM; and deactivation and decommissioning under the AEA of defense nuclear facilities that are not being operated pursuant to RCRA/CHWA treatment, storage or disposal permit. Within this context, DNFSB is responsible for determining whether DOE and its contractors are in compliance with all applicable DOE safety Orders, rules, and other requirements pertaining to nuclear safety at defense nuclear and nuclear storage facilities pursuant to the AEA. See 42 U.S.C. § 2286a(a). Under the RFCA, CDPHE has the lead for "decommissioning" activities subsequent to deactivation in accordance with the May 22, 1995 DOE/EPA Policy Statement.

EPA retains authority for final selection of remedial alternatives under CERCLA and will be the secondary entity for decommissioning activities where CDPHE is the designated primary entity.

Roles as primary or secondary entities for activities at a given facility, or for a given material, will change as the nature of the hazard or use changes during various phases

such as deactivation, cleanup, etc. This MOU provides for a smooth transition of regulatory or oversight responsibilities through these phases. Even though facilities and materials have passed through a given phase, exigencies can result in a return to a prior phase. This could occur, for example, if a facility were decontaminated and all hazardous materials were removed, but later, radioactive materials were introduced for storage. Entity roles would then revert back to those appropriate for the new facility activity.

1. DOE

DOE manages and directs all Departmental and contractor activity at RFETS. DOE also has authority for regulation of production and utilization of source, special nuclear, and byproduct material under the AEA, subject to DNFSB oversight. DOE has lead agency authority for response action related to releases or threats of releases of hazardous substances under CERCLA and Executive Order 12580, subject to EPA regulation. However, for purposes of this MOU, DOE and its contractor will be considered the regulated entity.

2. CDPHE

a. CDPHE will be primary entity, as shown in Figure 1, for the following activities:

(1) Regulation, oversight, and enforcement of RCRA and CHWA legal requirements for mixed waste (including generation, storage, treatment and disposal), with DNFSB review and concurrence for matters within its jurisdiction. (DNFSB involvement in this area will be limited to review and comment during decontamination of residual contamination of fixed structures, dismantlement, and demolition.) DNFSB technical comments may be incorporated, as appropriate, into applicable orders and permits, if consistent with applicable statutory authority and regulations, and existing permits and orders will be checked for consistency with DNFSB recommendations and resulting DOE commitments.

(2) As provided in the RFCA, regulation or oversight of decontamination and decommissioning of fixed structures and equipment, dismantlement, demolition, and closure of RCRA treatment, storage and disposal units, with DNFSB review and comment.

(3) Regulation of RCRA hazardous waste where not mixed with radioactive waste.

(4) Oversight of LLW and regulation of low-level mixed waste disposal on-site or elsewhere in the State of Colorado.

(5) Regulation of RCRA corrective actions and lead oversight of CERCLA response actions, as provided in the RFCA, with DNFSB review and comment regarding radioactive components of the waste, and consistent with DOE lead entity authority under Executive Order 12580 and the RFCA.

b. CDPHE will be a secondary entity, as shown in Figure 1, for:

(1) Review and comment to DNFSB on operations, processing, storage, on-site transport, decontamination (not associated with decommissioning), deactivation (including removal of stored SNM and contained materials and waste), and disposal activities for radioactive materials, including SNM, TRU, and byproduct materials, except that CDPHE will review and concur on final disposition activities which occur in the State of Colorado.

(2) Review and concur with DNFSB on operations, processing, storage, on-site transport, decontamination (not associated with decommissioning), and deactivation (including removal of SNM, stored and contained materials, and waste) activities for LLW.

3. **DNFSB**

a. DNFSB will be primary entity, as shown in Figure 1, for the following activities:

(1) Determination that public health and safety are adequately protected prior to the Secretary of Energy's resumption of SNM operation in plutonium buildings at RFETS. See section 3133 of Public Law 102-190, the National Defense Authorization Act for FY 1992-93 (Dec. 5, 1991).

(2) Storage of source, special nuclear and byproduct materials as defined by 42 U.S.C.A. §§ 2014(e), (z) and (aa) ("AEA materials") which are not waste or mixed with a hazardous waste, with CDPHE review and comment to the extent authorized by the AEA and other criminal and civil provisions of law governing the disclosure of classified national security information, restricted data, and unclassified controlled nuclear information.

(3) The safe final disposition of AEA special nuclear material.

(4) Storage of high level, TRU, low level, and other non-mixed AEA radioactive waste not subject to NRC licensing. The Board also has concurrent oversight responsibility for storage of radioactive waste mixed with hazardous waste. See 3.b.(1) below.

(5) Processing and deactivation operations involving AEA materials that are not mixed with hazardous waste, including for example, stabilization of stored special nuclear material residues or chemical separation of special nuclear materials from residues remaining in process systems.

(6) Deactivation and removal of SNM, AEA materials, and non-mixed AEA wastes which are stored or contained inside defense nuclear facility buildings. DNFSB's primary role will terminate once systems, structures and components have been decontaminated of radioactive materials to a level that does not constitute an undue risk to the health and safety of workers and the public. (See Figure 1: the bold horizontal line separating deactivation and disposal activities from "decommissioning" as defined by the DOE/EPA May 22, 1995, Policy Statement.)

b. DNFSB will be secondary entity, as shown in Figure 1, for the following activities:

(1) Review and concur on operations and processing, storage, deactivation, decontamination, and disposal activities involving the hazards and risks associated with the radioactive component of mixed waste.

(2) Review and comment on activities involving cleanup of radioactive materials in the environment, when requested.

(3) Review and comment on the final disposition of low level radioactive waste, if in the State of Colorado.

(4) Review and comment on activities involving the decontamination of residual contamination of fixed structures for all radioactive and mixed wastes.

(5) Review and comment on activities involving dismantlement and demolition related to all radioactive and mixed wastes.

4. EPA

a. EPA retains authority for final selection of remedial alternatives under CERCLA, consistent with Executive Order 12580, as shown in Figure 1.

b. EPA may, within its discretion, provide review and comment to CDPHE, as appropriate, within areas of its expertise and jurisdiction. See Figure 1.

VII. INTEGRATION OF ONGOING ACTIVITIES

An extraordinary number of ongoing environmental, safety, and health activities are being conducted at RFETS which must be integrated with the protocols of this MOU. For example, many facilities are subject to regulation under RCRA and CHWA. Cleanup is being conducted pursuant to CERCLA, RCRA, and CHWA. There are extant court decisions and consent orders which must be complied with. The Board has issued a number of Recommendations, including 94-1 on stabilization of SNM materials and 94-2 on low level waste, which apply to RFETS activities. Integration of these activities will require extensive effort by DOE and the regulatory/oversight entities immediately upon execution of this MOU. To a degree, however, these pre-existing environmental, safety and health requirements and activities were significant factors in the selection of the primary regulatory/oversight entities.

VIII. DISPUTE RESOLUTION

Conflicts can occur when a "secondary" entity has reason to believe that its interests are not adequately represented by a primary entity. This could occur, for example, if a party to the agreement alleges that DOE or its contractor has not complied with environment, safety, and health requirements and standards adopted by DOE, and accepted by the primary and secondary entities.

Should a conflict occur, a secondary entity shall work expeditiously with the primary entity to resolve the conflict, and not bypass the primary entity to resolve the conflict with DOE unless the conflict, if not quickly resolved, would result in an imminent threat to worker or public health and safety, an emergency, or a large expenditure of resources if resolution is delayed. In this event, the secondary entity may bring the matter directly to the attention of appropriate DOE personnel.

With the exception of imminent threats to safety and the potential for wasted resources discussed above, a secondary entity shall bring a conflict to the attention of the primary entity's representative for the activity. Where possible, the representative shall resolve the conflict with minimal impact on the activity. If resolution at the representative level is not possible, the next higher level of management shall address and resolve the conflict or elevate the conflict to the next level of management. If the secondary entity determines that the conflict is not being addressed adequately, it shall notify the primary entity that the secondary entity

intends to request DOE to participate in the resolution.

If DOE does not resolve a problem to the satisfaction of the primary or secondary entity, either entity may take the lead in resolving the problem through use of its independent regulatory or oversight authority subject to the dispute resolution clause of the RFCA in the case of EPA or CDPHE. All disputes shall be resolved within thirty days with the primary entity, or the secondary entity may exercise its reserved authority.

IX. RESERVED STATUTORY AUTHORITY

CDPHE administers hazardous waste permits, compliance, and other programs under RCRA, CHWA, and CERCLA. By statute, the Defense Nuclear Facilities Safety Board must recommend to the Secretary of Energy, or the President in appropriate circumstances, those measures necessary to adequately protect public health and safety at defense nuclear facilities. Each of the entities, including DOE, has a statutory obligation to respond to emergencies or severe or imminent threats to public health, safety, and the environment. EPA and DOE (and, where authorized by EPA, CDPHE), under CERCLA, must respond to hazardous substance releases or substantial threats of release which constitute an imminent and substantial endangerment. DNFSB under the AEA must take action on imminent or severe threats to public health and safety, and CDPHE must take action to protect the health and safety of its citizens from emergencies. Nothing in this MOU shall be construed to restrain an entity from taking appropriate action under its organic or other applicable statutes, including actions based on the entity's judgments regarding its resources and priorities. Moreover, in the event a dispute cannot be resolved by resort to the resolution process specified by the previous provision, a secondary entity may exercise any of its statutory regulatory or oversight authorities.

This MOU shall take effect after signing by authorized representatives of the respective entities. The parties to this MOU may modify or terminate the MOU by written agreement of all the parties.

Dated at Denver, Colorado this 1st day of March, 1996.

For the Defense Nuclear Facilities Safety Board,

John T. Conway
Chairman

Memorandum of Understanding

For the United States Department of Energy,

Mark N. Silverman
Manager, Rocky Flats Field Office

For the United States Environmental Protection Agency,

Jack W. McGraw
Deputy Regional Administrator,
EPA Region VIII

For the Colorado Department of Public Health and Environment,

Thomas P. Looby
Director, Office of Environment

DEPARTMENTAL AND AGENCY ROLES AND RESPONSIBILITIES FOR ACTIVITIES IN THE INDUSTRIAL AREA AT RFETS

DOE DIRECTS AND MANAGES ALL ACTIVITIES AT RFETS

MATERIAL/ WASTE / ACTIVITY	RADIOACTIVE MATERIALS SNM, TRU, Byproduct	LOW LEVEL RADIOACTIVE WASTE	SOLID/LIQUID MIXED TRU WASTE (RCRA Waste)	LOW LEVEL MIXED WASTE (RCRA waste)	HAZARDOUS AND SOLID WASTE	†CERCLA/RCRA MATERIALS IN ENVIRONMENT
Operations and Processing	DNFSB Primary CDPHE Review and Comment	DNFSB Primary CDPHE Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary	CDPHE Primary
Storage, On-Site Transport, and Decontamination (unassociated with decommissioning)	DNFSB Primary CDPHE Review and Comment	DNFSB Primary CDPHE Review and Concur	CDPHE Primary DNFSB Review and Concur ‡	CDPHE Primary DNFSB Review and Concur	CDPHE Primary	CDPHE Primary
Deactivation including removal of SNM stored and contained materials and waste	DNFSB Primary CDPHE Review and Comment	DNFSB Primary CDPHE Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary	CDPHE Primary
Final disposition, or disposal within Colorado	DNFSB Primary CDPHE Review and Comment ††	CDPHE Primary DNFSB Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary DNFSB Review and Concur	CDPHE Primary	CDPHE Primary
Decontamination of residual contamination of fixed structures	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CDPHE Primary EPA Review and Comment	CDPHE EPA Review and Comment
Dismantlement and Demolition	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CHPHE Primary EPA Review and Comment DNFSB Review and Comment	CDPHE Primary EPA Review and Comment	CDPHE EPA Review and Comment

Decommissioning (DOE/EPA Policy)

† EPA retains final signature authority on the "record of decision" for final selection of remedialalternative, and DNFSB provides comment in areas of expertise upon request.

†† Review and Concur if final disposition or disposal is in the State of Colorado.

‡ DNFSB has statutory oversight responsibility for nuclear waste storage. 42 U.S.C. § 2286g(2).

Legend:

CDPHE Primary EPA Secondary DNFSB Secondary	CDPHE Primary DNFSB Secondary	DNFSB Primary CDPHE Secondary

DNFSB/OGC 12/20/95

APPENDIX 2

Principles for Effective Dialogue and Communication at Rocky Flats

RFCA
Appendix 2
March 14, 1996

Principles for Effective Dialogue
and Communication at Rocky Flats

We the undersigned commit to using these "Principles for Effective Dialogue and Communication at Rocky Flats" in all interactions at Rocky Flats. Furthermore, all staff involved with Rocky Flats issues at the Colorado Department of Public Health and Environment, Environmental Protection Agency, and Rocky Flats Environmental Technology Site should use these Principles in their interactions and decision-making processes, both formal and informal.

1. It is recognized that all three Parties have distinct roles and independent decision-making responsibilities that they must consider throughout both the formal and informal aspects of decision-making of Rocky Flats issues.

2. At all phases of interaction and decision making, and especially at the early phase of work planning among the lowest working levels possible, staff should engage in interagency dialogue that is aimed at:

   sharing all relevant information;

   being honest about their own underlying needs and constraints by clarifying the rationale for such needs and limitations through open communication;

   striving to understand the views and rationales expressed by other Parties;

   being reasonable, flexible and creative; and

   solving real problems and achieving environmental results.

3. The goal of interagency dialogue is to achieve consensus on identifying problems and making decisions related to those problems. At the very least, consensus solutions are those that each party is able to live with. At their best, consensus solutions are "win/win" outcomes where truly creative solutions can be found to the complex problems that must be addressed at Rocky Flats.

4. It is understood that the use of a dialogue process is rooted in a shared vision for the site, and shared goals and objectives for achieving the vision. The shared vision, goals and objectives must be arrived at in a consensus process, clearly communicated, and frequently referred to.

5. It is recognized that there are legitimate differences in the underlying needs and interests of the Parties and consensus on specific actions may not always be possible. However, the

inability to achieve consensus should not be considered a failure of the dialogue process. Rather, the dialogue process should be considered a failure if there is a lack of clarity and understanding about why each party is taking the position they are taking.

6. The dialogue process above is a philosophy that should apply to all interactions at Rocky Flats. However, all Parties recognize that informal, consensus-oriented dialogue about specific issues cannot continue indefinitely. Such dialogue should continue until consensus is achieved in a reasonable period of time or until all participating Parties believe they have a complete understanding of their respective views and the reasons why they disagree. In those instances where consensus cannot be achieved, the Parties recognize that formal decision-making processes will be used to reconcile differences. The underlying approach described here should not end at this point, but be carried forward into the formal decision-making process.

/s/ EPA
/s/ DOE
/s/ CDPHE

APPENDIX 3

(RESERVED)

APPENDIX 4

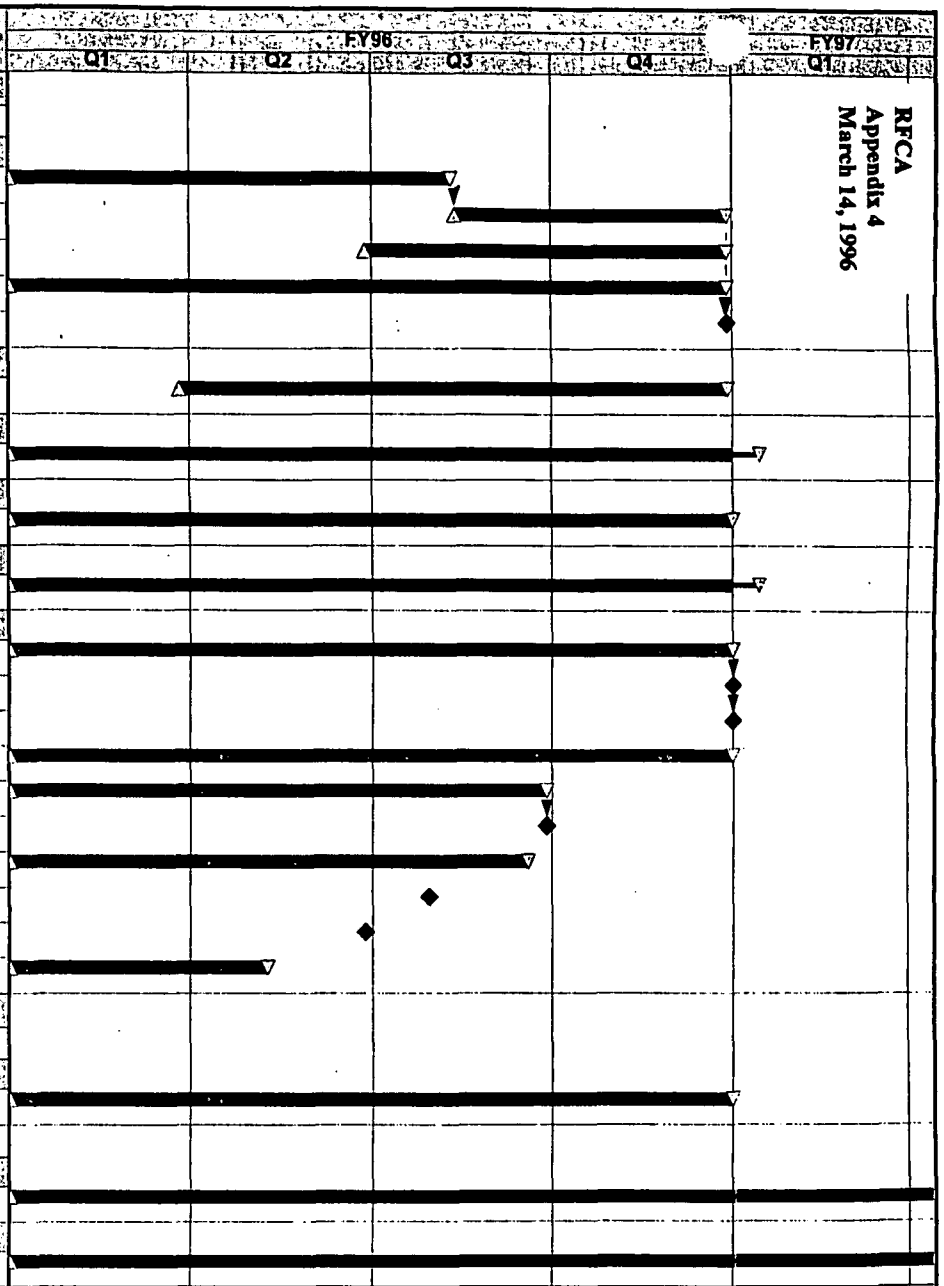
FY 1996
Summary Level Baseline

Rocky Flats Clean Up Agreement

Fiscal Year 1996 Baseline Schedule
for
Environmental Restoration, Waste Management, and Special Nuclear Materials Programs

February 1996

Activity ID	Activity Description	CA	Early start	Early fin
ER/WM PLANNING				
INTEGRATED SITEWIDE SURFACE & GROUNDWATER PROCES				
1217600050	DRAFT INTEGRATED WATER MGMT PLAN	DAB	02OCT95	10MAY96
1217600220	FINAL INTEGRATED WATER MGMT PLAN	DAB	13MAY96	27SEP96
1217600400	STAKEHOLDER BRIEFINGS/AGENCY REV &	DAB	29MAR96	27SEP96
1217600450	PROJECT MANAGEMENT	DAB	02OCT95	27SEP96
1217600M50	PROJECT COMPLETION	DAB		27SEP96
ER BASELINE 'A' STRATEGY				
12177BI999	ER ASAP SUPPORT	DAB	26DEC95*	27SEP96
+ER TRACKING/REPORTING/BUDGET PREPARATION				
		DAB	02OCT95	14OCT96
+WM TRACKING/REPORTING/BUDGET PREPARATION				
		DAB	02OCT95	30SEP96
+CAPITAL TRACKING/REPORTING/BUDGET PREPARATION				
		DAB	02OCT95	14OCT96
C LCWMP/LDR STRATEGY/STP				
13103105	LCWMP Planning	DAB	02OCT95	30SEP96
13103501	Complete FFC Act APR	DAB		30SEP96*
13103502	Complete FFC Act CFO Report	DAB		30SEP96*
13103520	STP Implementation Model	DAB	02OCT95*	30SEP96
13103205	Life-Cycle Waste Mgmt. Plan	DAB	02OCT95	27JUN96
13103125	Complete LC Waste Mgmt. Plan for K-H	DAB		27JUN96*
13103510	Annual LDR Progress Report	DAB	02OCT95*	18JUN96
13103325	Complete W.T. Privatization Plan	DAB		29APR96*
13103511	Complete STP APR/Work Plan	DAB		28MAR96*
13103250	Baseline Planning	DAB	02OCT95	08FEB96
STORAGE MANAGEMENT				
WM - 3 Reactive Disposition				
+RCRA Waste Acceptance OPS & Compliance				
		DBA	02OCT95	30SEP96
+WASTE MINIMIZATION OPERATIONS & CHARGE BACK SYST				
		DBA	02OCT95	01OCT97
+RADIOACTIVE/REGULATORY WASTE PROGRAMS				
		DBA	02OCT95	01OCT97



Project Start 01AUG88
Project Finish 24SEP01
Data Date 01OCT95
Plot Date 28FEB96

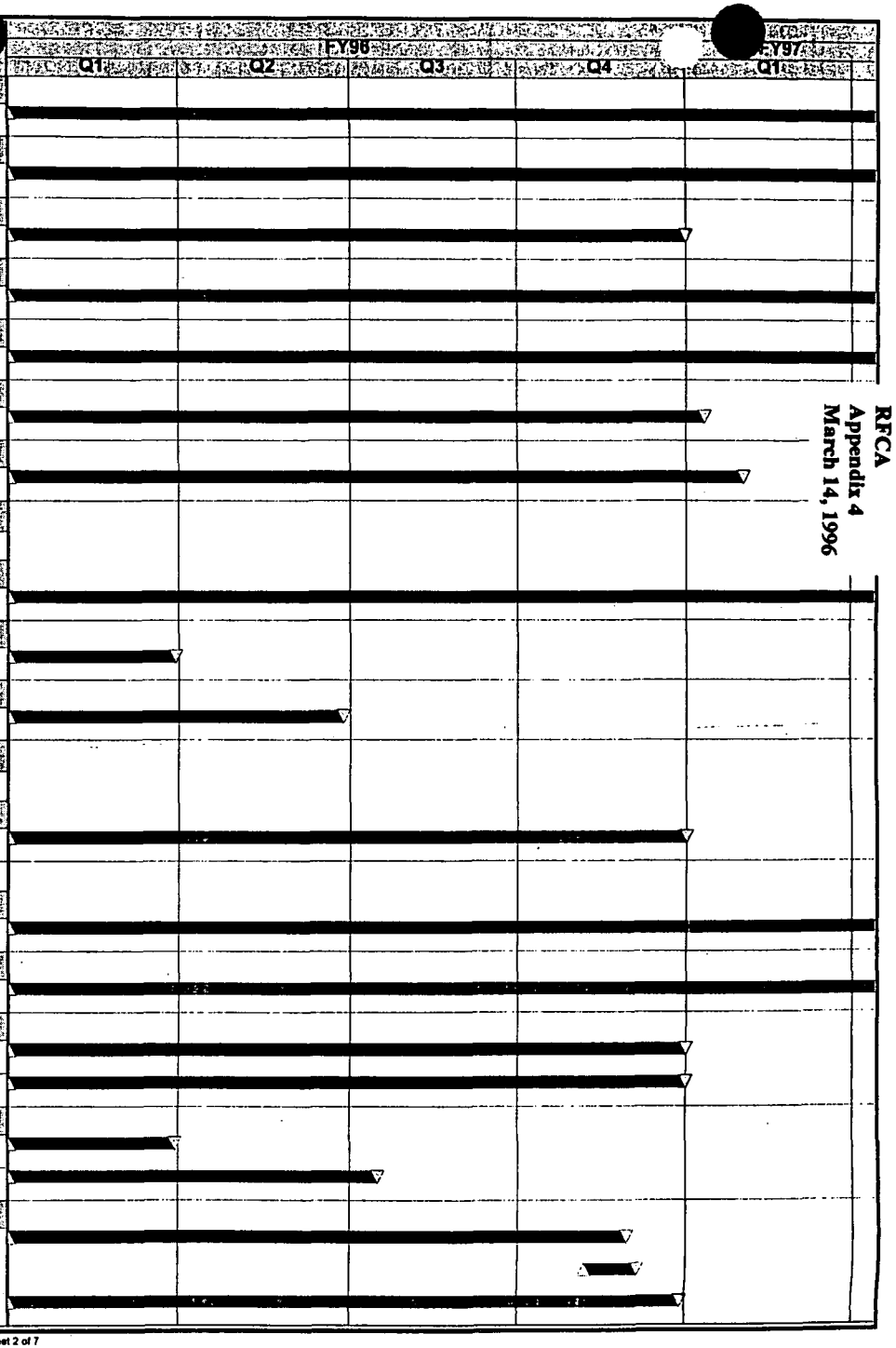
Early Bar
Progress Bar
Critical Activity

BUD1

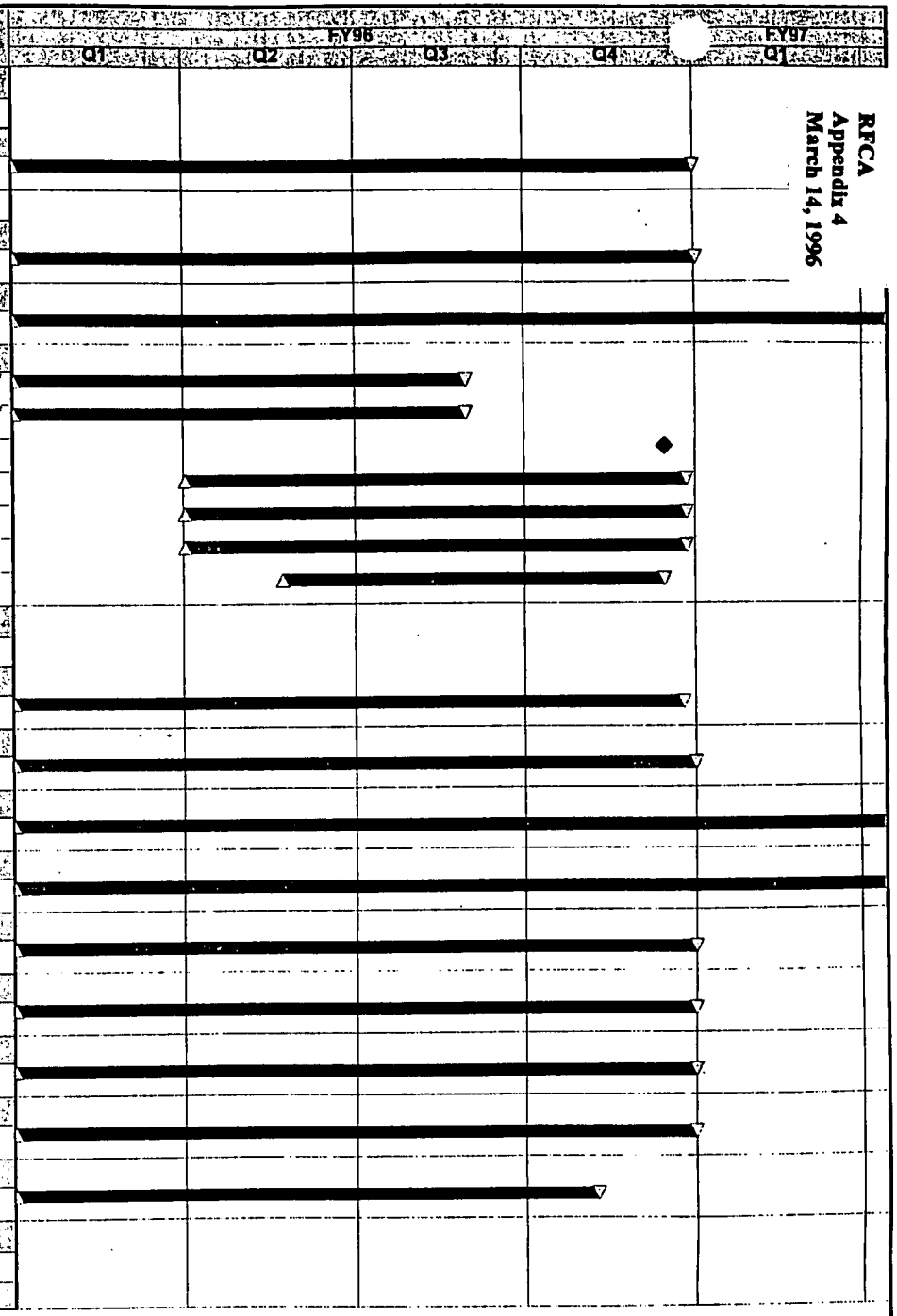
Kaiser-Hill RFETS
Rocky Flats Clean Up Agreement
FY96 ER/WM Activities

Sheet 1 of 7

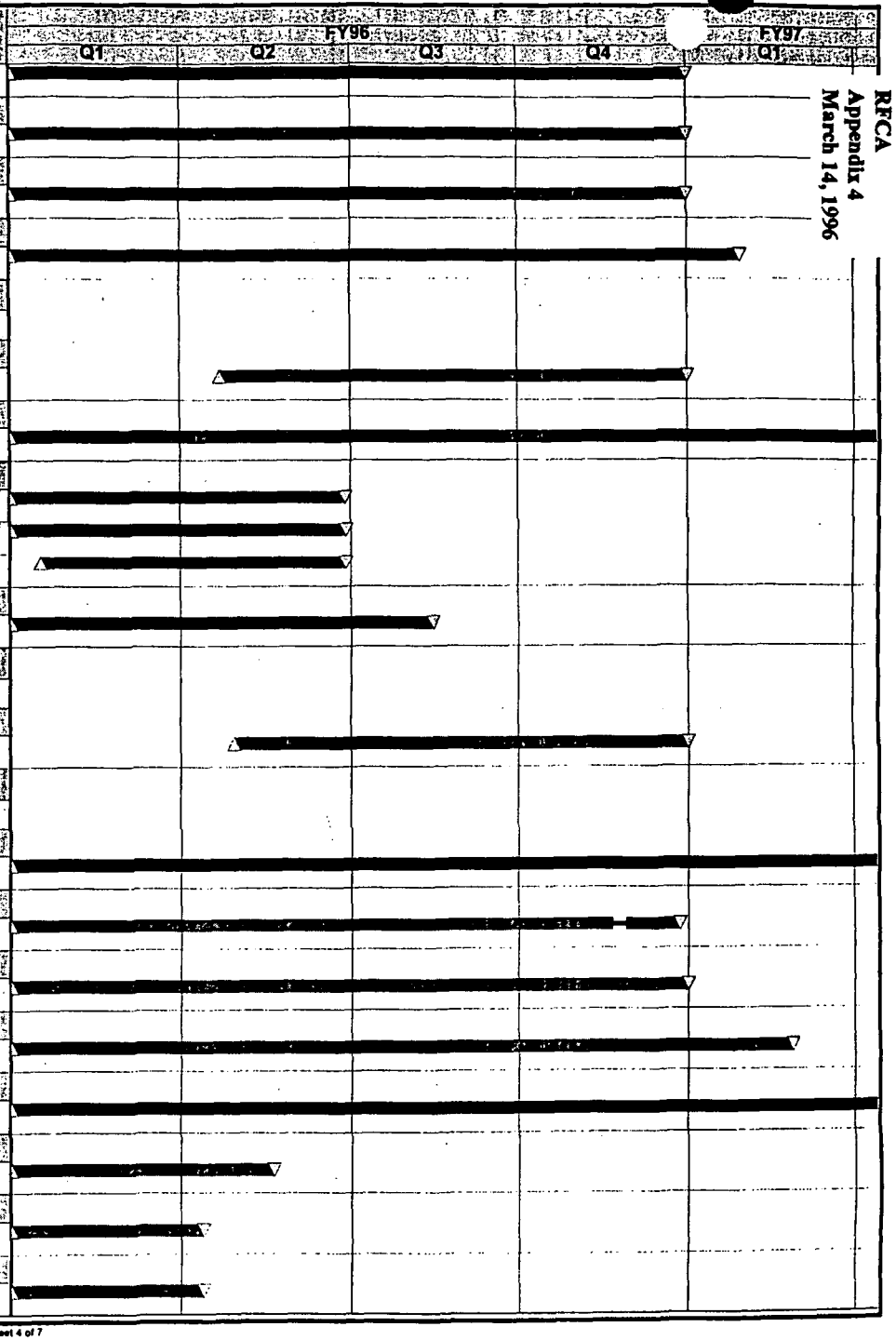
Activity	Activity Description	CA	Early start	Early fin.
+ LLM Storage and Operations				
		DBA	02OCT95	30SEP97
ENVIRONMENTAL STORAGE				
133021000	FY96 Environmental Storage.	DBA	02OCT95	30SEP97
SLUDGE/PONDCRETE STORAGE (EW20)				
13404000	FY96 Sludge/Pondcrete Storage (EW20)	DBA	02OCT95	30SEP96
+ SALTCRETE STORAGE (EW31)				
		DBA	02OCT95	30SEP97
+ TRU WASTE COMPLIANCE & STORAGE				
		DBA	02OCT95	01OCT97
+ B 440 LLW STORAGE				
		DBA	02OCT95	10OCT96
UST LINE ITEM				
7450104000	UST Characterization	DBA	02OCT95	31OCT96
ASSAY/CHARACTERIZATION				
+ NDA OPERATIONS				
		DBB	02OCT95	01OCT97
+ B 559 INDUCTIVELY COUPLED PLASMA				
		DBB	02OCT95	29DEC95
+ PASSIVE/ACTIVE DRUM COUNTER				
		DBB	02OCT95	28MAR96
MATERIAL TREATMENT				
WM - 2 Evac Waste/Solid Residues from B779				
+ SOLID WASTE OPERATIONS (EW31)				
		DBC	02OCT95	30SEP96
+ WASTE TREATMENT/STORAGE/DISPOSAL INITIATIVES				
		DBC	02OCT95	01OCT97
+ LDR TECHNOLOGY IMPLEMENTATION				
		DBC	02OCT95	30SEP97
IMMOBILIZATION OF MISC WASTES EXP SPT				
7221600800	Program Management	DBC	02OCT95	30SEP96*
72216011100	Project Management	DBC	02OCT95	30SEP96*
SURFACE CONTAMINANT REMOVAL EXP SPT				
72224100	Project Management	DBC	02OCT95	29DEC95*
72224150	Design & Regulatory Support	DBC	02OCT95	15APR96
IMMOBILIZATION OF MISC WASTES LINE ITEM				
7C4021100	Project Management Support	DBC	02OCT95	28AUG96*
7C4026096	FY96 Construction Engineering Support	DBC	06AUG96	03SEP96*
7C4022200	FY96 Title 1 Engineering	DBC	02OCT95	27SEP96



Activity ID	Activity Description	CA	Early start	Early fini
SHIPPING/DISPOSAL				
WM - 1 Shipment of Saltcrete - Offsite Disposal				
+ RAD DISPOSAL				
		DBD	02OCT95	30SEP96
+ WIPP DIRECTED SUPPORT				
		DBD	02OCT95	01OCT96
+ RCRA/TSCA Storage & Disposal				
		DBD	02OCT95	30SEP97
WASTE CERTIFICATION AND OVERSIGHT				
1635550200	Waste NCR Database	DBD	02OCT95	30MAY96*
1635550900	WCP Procedures	DBD	02OCT95	30MAY96*
1635550110	Certify LLW & LLMW Packages	DBD		13SEP96*
1635550100	Direct Certification	DBD	02JAN96*	25SEP96
1635550300	Process Monitoring	DBD	02JAN96*	25SEP96
1635550800	Waste Program Management	DBD	02JAN96	25SEP96
1635550450	Bi-Monthly Reporting	DBD	22FEB96*	13SEP96
TREATMENT				
OU1 CONSOLIDATED WATER TREATMENT PLANT				
1257996010	SITEWIDE WATER TREATMENT OPERATIONS	DCA	02OCT95*	23SEP96
+ INTERCEPTOR TRENCH OPS AND MAINTENANCE				
		DCA	02OCT95	30SEP96
+ B 374 OPS & MAINTENANCE				
		DCA	02OCT95	30SEP97
+ B 774 OPS & MAINTENANCE				
		DCA	02OCT95	30SEP97
+ WATER TREATMENT IMPLEMENTATION				
		DCA	02OCT95	30SEP96
STP UPGRADE LINE ITEM				
712091000	STP Upgrade and Support	DCA	02OCT95	30SEP96
+ B 374 LIQUID WASTE TREATMENT FACILITY				
		DCA	02OCT95	30SEP96
+ WASTE SYSTEM EVAPORATOR (MIE)				
		DCA	02OCT95	30SEP96
+ REPLACE B-374 EFFECT HEAT EXCHANGER				
		DCA	02OCT95	08AUG96
SURFACE AND GROUND WATER				
+ GROUNDWATER MONITORING				

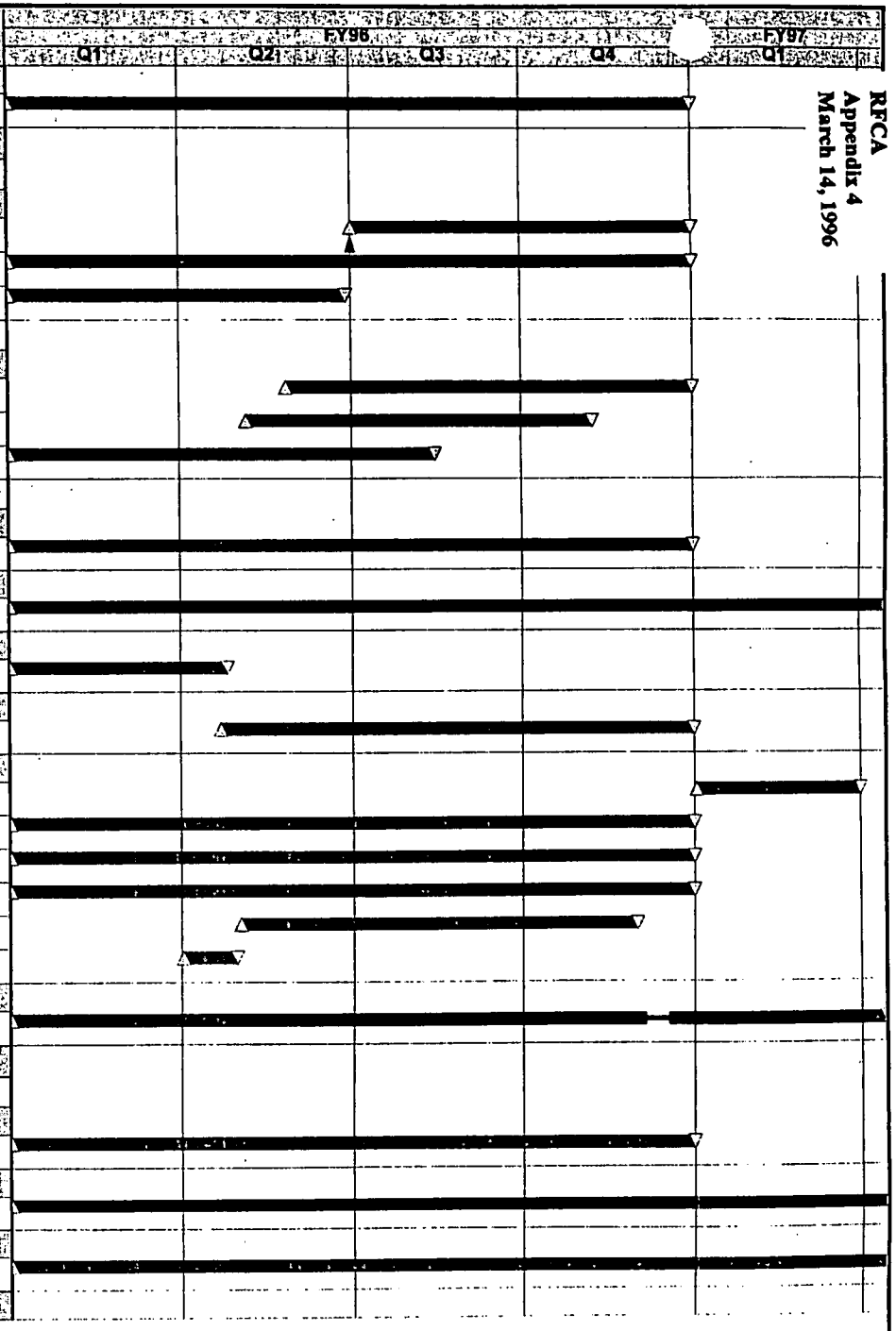


ID	Activity Description	CA	Early start	Early finish
		DCB	02OCT95	30SEP96
* GROUNDWATER MANAGEMENT/SUPPORT				
		DCB	02OCT95	30SEP96
SURFACE WATER MANAGEMENT & COMPLIANCE				
1232600100	POND OPERATIONS PLANNING & DEVELOPMENT	DCB	02OCT95	30SEP96
NPDES-FFCA MANAGEMENT				
1238410000	WATER MANAGEMENT	DCB	02OCT95	28OCT96
LONG-TERM STORAGE/DISPOSAL				
ON-SITE DISPOSAL CELL				
1243100000	ONSITE WASTE MANAGEMENT FACILITY	DDB	22JAN96*	30SEP96
* OU7 LANDFILL				
		DDB	02OCT95	30SEP97
NEW SANITARY LANDFILL LINE ITEM				
712101100	Project Management	DDB	02OCT95	29MAR96*
712104100	Construction Management	DDB	02OCT95	29MAR96*
712107100	Operations Readiness	DDB	18OCT95	29MAR96
NEW SANITARY LANDFILL EXP SPT				
722071000	Sanitary Landfill Mgmt. & Support	DDB	02OCT95	15MAY96
D&D PROJECTS				
D & D BUILDING 889				
T3003APRS	PROJECT SUPPORT B889	DEA	29JAN96*	30SEP96
CHARACTERIZATION & ANALYSIS				
* PRIORITIZATION AND INVESTIGATION				
		DFA	02OCT95	24SEP01
* SITE WIDE CLOSURE				
		DFA	02OCT95	25SEP96
* OU1 881 HILLSIDE CLOSE-OUT				
		DFA	02OCT95	30SEP96
* OU2 903 PAD CLOSE-OUT				
		DFA	02OCT95	26NOV96
* OU3 OFFSITE CLOSE-OUT				
		DFA	02OCT95	24SEP01
* OU6 WALNUT CREEK CLOSE-OUT				
		DFA	02OCT95	19FEB96
* OU11 WEST SPRAY FIELDS CLOSE-OUT				
		DFA	02OCT95	12JAN96
* OU15 INSIDE BUILDING CLOSE-OUT				
		DFA	02OCT95	12JAN96

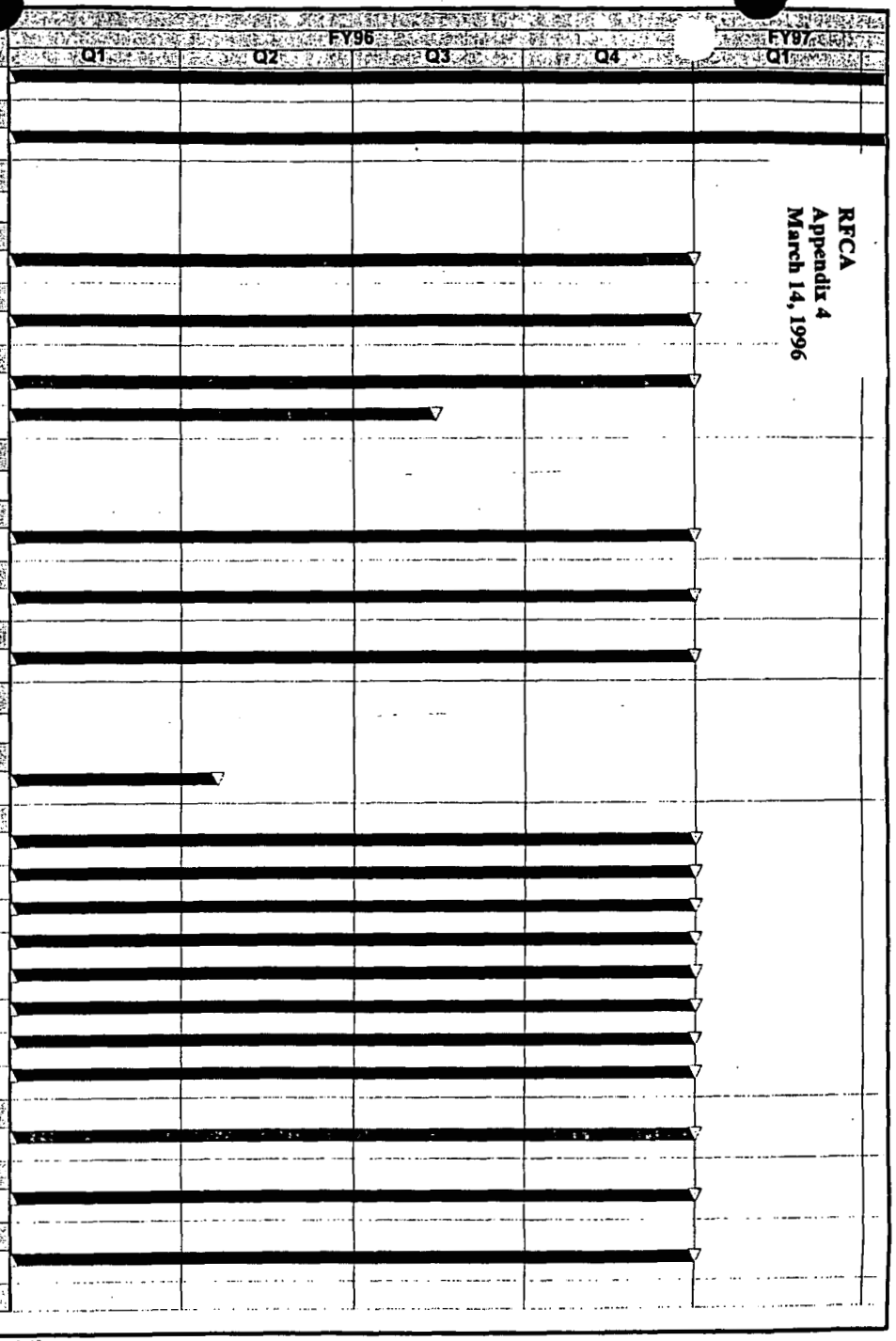


Sheet 4 of 7

Activity ID	Activity Description	CA	Early start	Early finish
+ TECHNICAL SERVICES				
		DFA	02OCT95	30SEP96
CONSTRUCTION/REMEDIAL ACTION				
ER - 1&2 Accel Action at Trench T-3&4 in OU2				
ACCELERATED ACTIONS				
12524A1100	T3 & T4 IMPLEMENTATION	DFB	01APR96*	30SEP96
12524A1300	T3 & T4 PROJECT MANAGEMENT	DFB	02OCT95*	30SEP96
12524A1000	T3 & T4 PROJECT PLANNING	DFB	02OCT95*	29MAR96
ER-3 Accel Actions IAG Tanks In Industrial Area				
ACCELERATED ACTIONS				
12524C3000	IAG TANK PROJECT CLOSEOUT	DFB	26FEB96*	30SEP96
12524C2000	IAG TANK PROJECT IMPLEMENTATION	DFB	05FEB96*	07AUG96
12524C1000	IAG TANK PROJECT PLANNING	DFB	02OCT95*	15MAY96
+ ER OPERATIONS				
		DFB	02OCT95	30SEP96
+ OU5 WOMAN CREEK				
		DFB	02OCT95	24SEP01
+ CONSTRUCTION FACILITIES				
		DFB	02OCT95	25JAN96
OU4 SOLAR PONDS				
1247400000	OU 4 SOLAR PONDS	DFB	22JAN96*	30SEP96
ACCELERATED ACTIONS				
12524A5006	IHSS 118.1 PLANNING	DFB	02OCT96*	31DEC96
1252499900	INFORMATION ASSESSMENT (QTY 10)	DFB	02OCT95	30SEP96
1252499910	OPERATIONAL FEASIBILITY (QTY 5)	DFB	02OCT95	30SEP96
1252499920	PROJECT CONTROLS	DFB	02OCT95	30SEP96
12524B1000	IHSS 129 PROJECT	DFB	01FEB96*	30AUG96
12524RP100	RYANS PIT THERMAL DESORPTION	DFB	02JAN96*	29JAN96
+ HOT SPOTS REMOVAL				
		DFB	02OCT95	14JAN97
STANDARDS & COMPLIANCE REQUIREMENTS				
+ TRAINING AND QUALIFICATION PROGRAM (PARA12910)				
		DGA	02OCT95	30SEP96
+ WASTE INVENTORY & TRACKING (WEMS)				
		DGA	02OCT95	01OCT97
+ WASTE CHARACTERIZATION (EW7.0) (WSRIC)				
		DGA	02OCT95	01OCT97
+ RCRA REGULATORY PROGRAM				



Activity ID	Activity Description	CA	Early start	Early finish
		DGA	02OCT95	01OCT97
+ RFETS PERMITTING FEES				
		DGA	02OCT95	01OCT97
ENVIRONMENTAL PROTECTION				
+ NATURAL RESOURCE PROTECTION & COMPLIANCE				
		DGB	02OCT95	30SEP96
+ RFETS NEPA SUPPORT				
		DGB	02OCT95	30SEP96
5400.1 ENVIRONMENTAL REPORTING				
6110850100	MONTHLY ENVIRONMENTAL MONITORING	DGB	02OCT95	30SEP96
6110850700	PREPARE EIA/ODIS	DGB	02OCT95	14MAY96
AIR QUALITY MGMT				
+ ENVIRONMENTAL AIR MONITORING				
		DGC	02OCT95	30SEP96
+ AIR PERMITTING AND COMPLIANCE				
		DGC	02OCT95	30SEP96
+ DOE/RFFO COMMUNITY RAD MONITORING				
		DGC	02OCT95	30SEP96
RADIATION PROTECTION PROGRAM & SAFETY				
FIRE HAZARD ANALYSIS				
44240100	Fire Haz/Fire Protection Assessments	FDA	02OCT95	19JAN96*
CHEMICAL MGT/REGULATORY REQUIREMENTS				
4424360100	INTEGRATED CHEMICAL MANAGEMENT	FDA	02OCT95	30SEP96*
4424360200	SITEWIDE CHEMICAL INVENTORY CONTROL	FDA	02OCT95	30SEP96*
4424360300	SARA TITLE III (SECTION 312)-TIER II REPORT	FDA	02OCT95	30SEP96*
4424360400	SARA TITLE III (SECTION 313)-FORM R	FDA	02OCT95	30SEP96*
4424360500	SARA TITLE III (SECTION 311)/OSHA HAZ COM	FDA	02OCT95	30SEP96*
4424360600	PROCUREMENT, EXCESS CHEMICALS, &	FDA	02OCT95	30SEP96*
4424360700	SARA TITLE III/POLUTION PREVENTION ACT	FDA	02OCT95	30SEP96*
4424360800	POLICY, PLANNING, INTEG., ADMIN. &	FDA	02OCT95	30SEP96*
+ RADIOLOGICAL HEALTH & ENGINEERING				
		FDA	02OCT95	30SEP96
+ RADIOLOGICAL OPERATIONS				
		FDA	02OCT95	30SEP96
+ 10CFR835/RCM IMPLEMENTATION				
		FDA	02OCT95	30SEP96
EXCESS CHEM MGMT PROGRAM				



RFCA
Appendix 4
March 14, 1996

Activity ID	Activity Description	CA	Early start	Early finish
4424760100	OVERSIGHT OF EXCESS CHEMICALS	FDA	02OCT95	30SEP96*
4424760200	OVERSIGHT OF REACTIVE CHEMICALS	FDA	02OCT95	30SEP96*
4424760300	SPILL MANAGEMENT	FDA	02OCT95	30SEP96*
4424760400	POLICY, PLANNING, & ADMINISTRATION	FDA	02OCT95	30SEP96*

FY96 Q1 Q2 Q3 Q4 FY97 Q1

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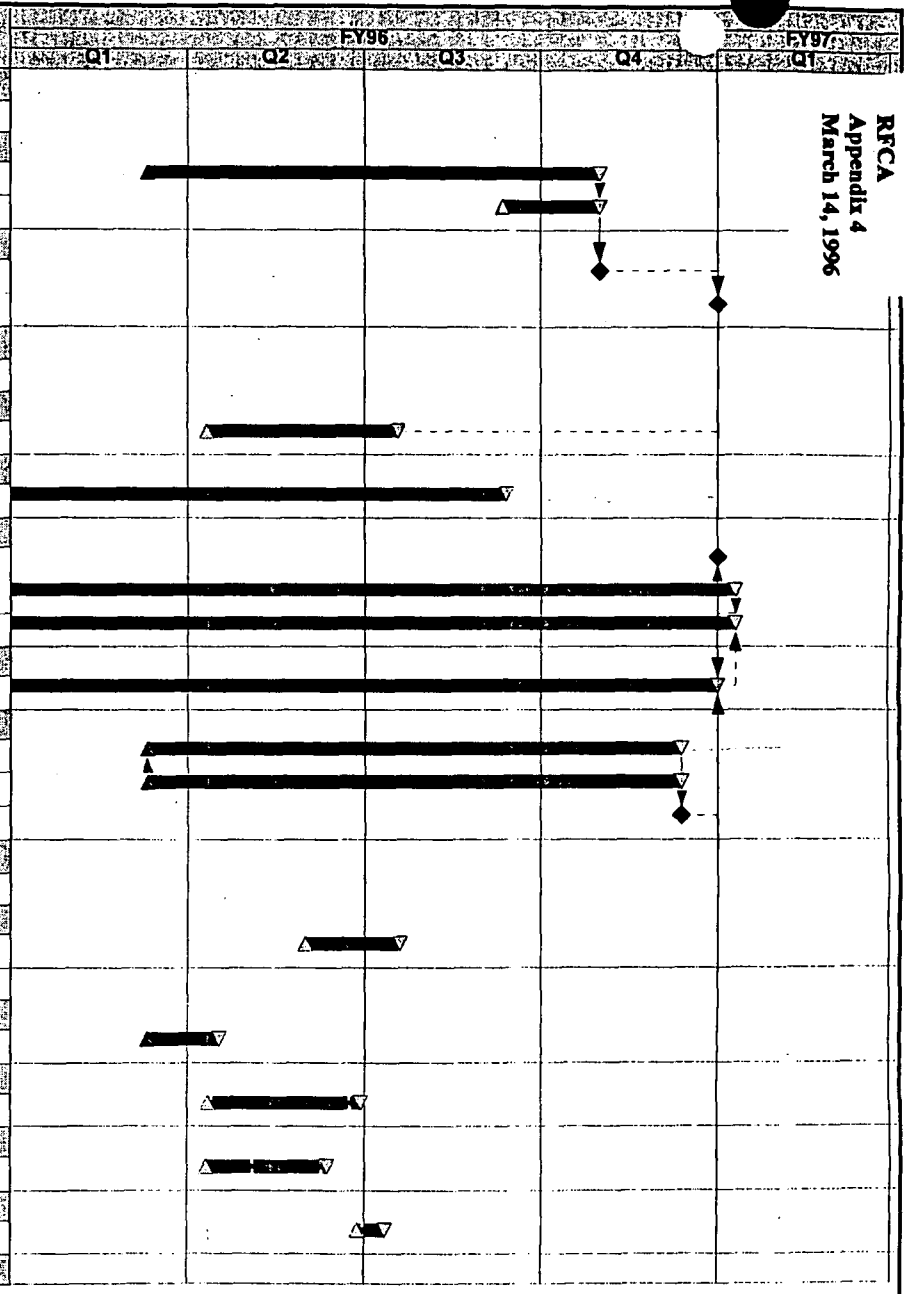
Activity ID	Activity Description	CA	Early start	Finish
Disposition HSP 31.11 Items				
1.2 BRUSH & REPACKAGE 700 AREA ITEMS				
1.2.2 BRUSH REMAINING 700 AREA NC ITEMS				
S201020200	BRUSH REMAINING 700 AREA NC ITMS -- 700	AAA	11DEC95A	31JUL96
S201020225	BRSH,REPKG,&STORE 291 ITEMS XY RTRVR, J&H	AAA	11JUN96	31JUL96
1.2.3 HSP 31.11 COMPLIANCE ACHIEVED				
S201020300	PMR96-1 9/30/96 DISP HSP 31.11/STBLZ Pu OXIDE	AAA		31JUL96
S201020301	RFCA COMMITMENT HSP 31.11 ITEMS DISPOSITIONED	AAA		30SEP96*
Stabilize Pu Oxides				
1.4 UNRESTRICTED THERMAL STAB (800 C)				
1.4.5 TRANSFER PREPS & CHARACTERIZE Pu OXIDE				
S201030200	TRANSFER PREPS AND CHARACTERIZATION PU	AAA	11JAN96*	17APR96
+ CONDUCT CALORIMETRY ON POST PROCESSED ITEMS				
		AAA	03JUL95A	12JUN96
1.4.2 PROCESS UNSTABILIZED OXIDE				
S201040202	RFCA COMMITMENT STABILIZE 80% OF PU OXIDE	AAA		30SEP96*
S201040200	PROCESS UNSTABILIZED OXIDE-- &	AAA	24APR95A	09OCT96
S201040201	B707 THERMALLY STABILIZE & REPACKAGE OXIDE	AAA	03JUL95A	09OCT96
1.4.4 CHARACTERZE & ANALYZE BCKLOG PYROPHORIC PU				
S201040400	BACKLOG OXIDE THERMALLY STABILIZED	AAA	03JUL95A	30SEP96
1.4.6 TRANS BKLOG ITMS TO 707 FRM 771/776-7/779				
S201030300	TRNSFER/T.S. BACKLOG PYROPHORIC OXIDE	AAA	11DEC95A	11SEP96
S201030316	THERMALLY STABILIZE PYROPHORIC OXIDE AS	AAA	11DEC95A	11SEP96
S201030307	COMPLETE PRE-SAMPL & ANAL N/S OXIDE	AAA		11SEP96
Remove HEUN Solutions from RFETS				
MATERIAL ACCESS AREA				
+ REDUCE MAA				
		BDA	01MAR96	18APR96
BUILDING REPAIRS AND PREPS				
+ INST TEMP MON DEVICE ALARM SYSTEM				
		BDA	11DEC95A	17JAN96
+ BOTTLE SKID				
		BDA	12JAN96	29MAR96
+ PUMP SKID				
		BDA	11JAN96	12MAR96
+ INSTALLATION OF EQUIPMENT & COLD TAP				
		BDA	28MAR96	10APR96
+ BOTTLE RACKS				



Project Start 01JAN93
Project Finish 21JAN03
Data Date 11JAN96
Print Date 28FEB96

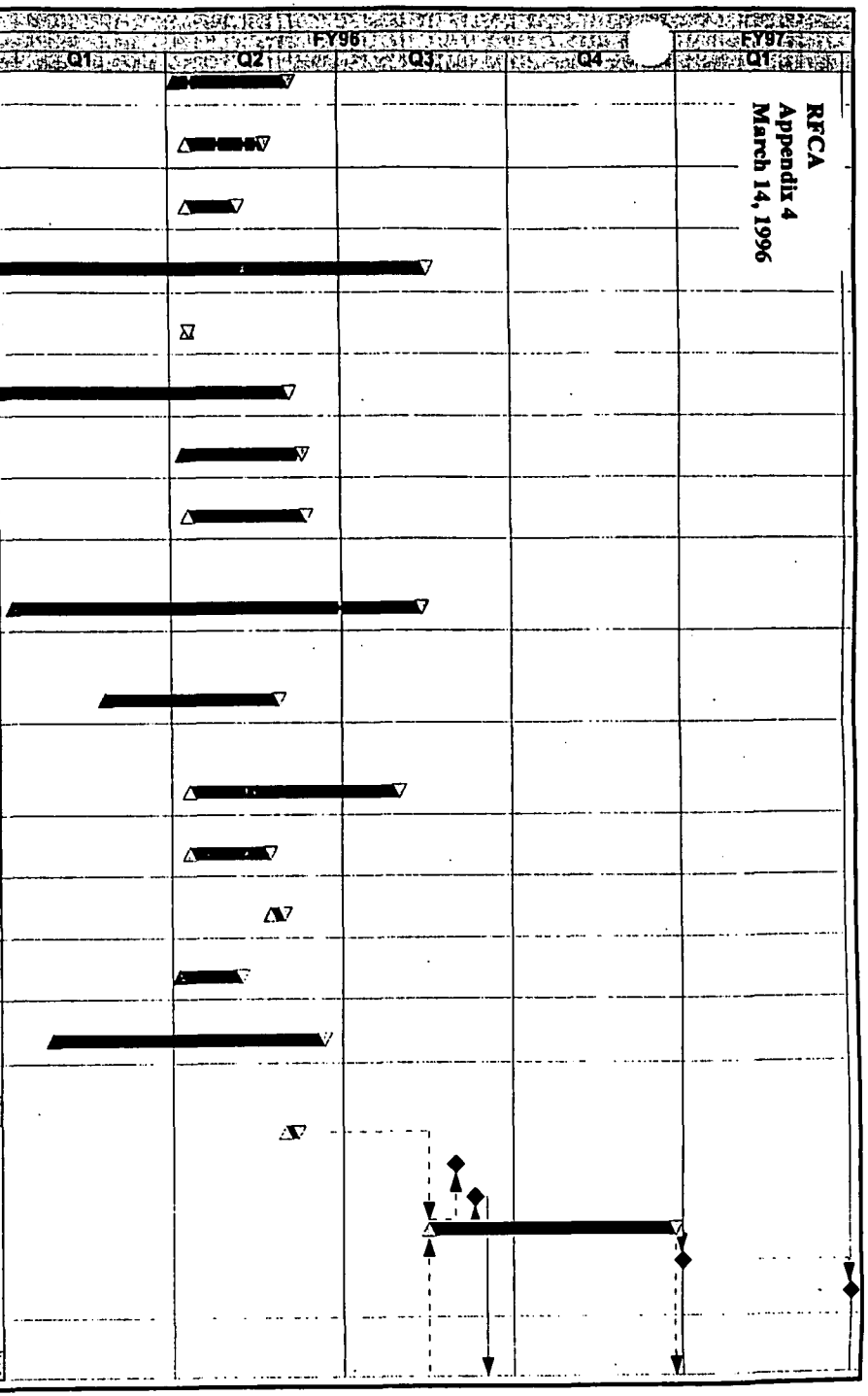
Early Bar
Progress Bar
Critical Activity

RFCA

Kaiser-Hill RFETS
Rocky Flats Cleanup Agreement
FY96 SNM Activities

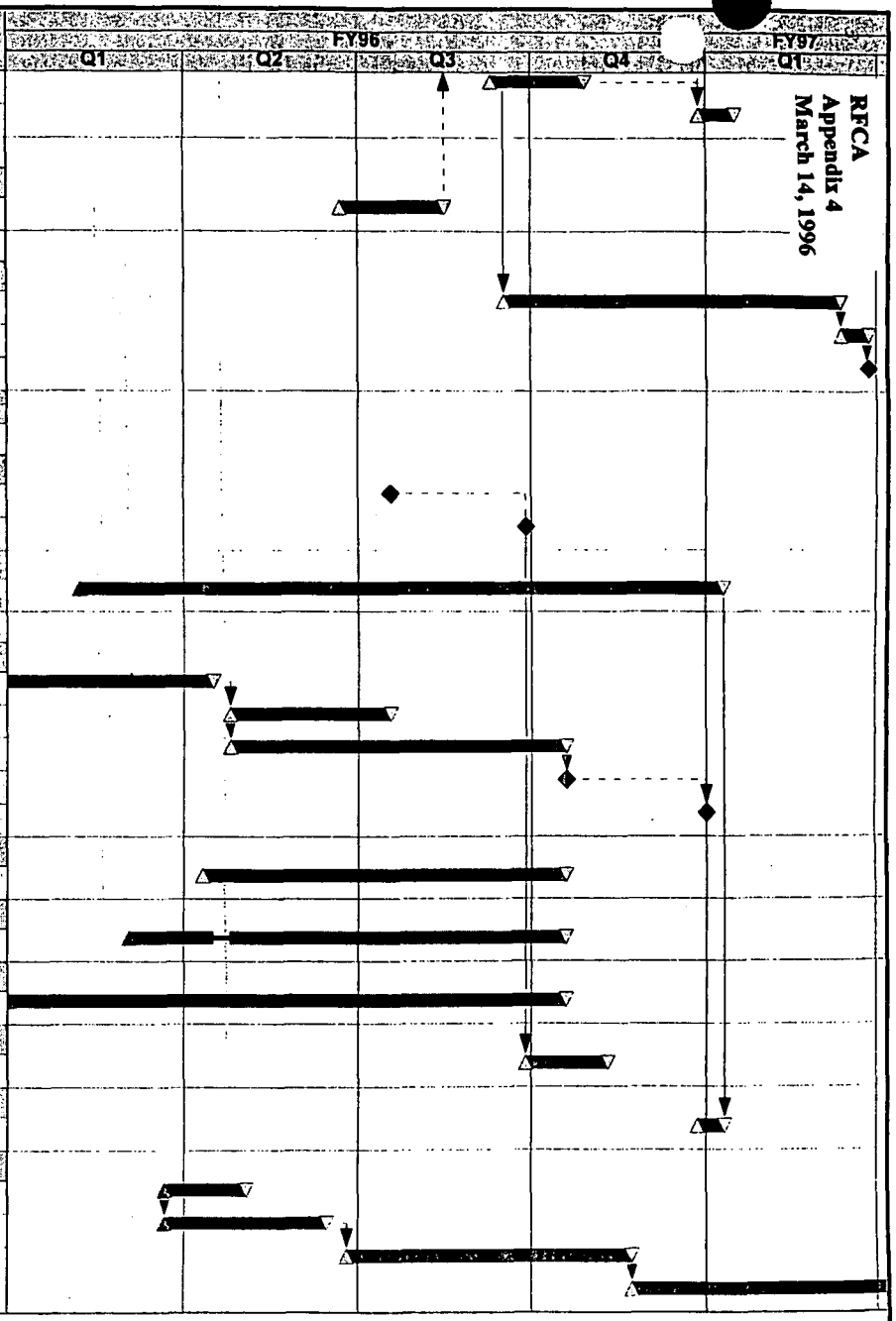
Sheet 1 of 3

Act ID	Activity Description	CA	Early start	Early fish
		BDA	05JAN96A	05MAR96
+ VALVE & PUMP LABELING		BDA	11JAN96	21FEB96
+ DETERMINE BUILDING 991/371 READINESS		BDA	11JAN96	07FEB96
+ BUILDING PREPS & REPAIRS		BDA	03JUL95A	17MAY96
+ INSTALL SECONDARY HEATING SYSTEM		BDA	11JAN96	11JAN96
+ ROOM 102 CLEANOUT		BDA	02OCT95A	04MAR96
+ CRIT BEACONS		BDA	08JAN96A	11MAR96
+ WASTE REMOVAL		BDA	11JAN96	13MAR96
PACKAGING				
+ DETERMINE REQS, ORDER AND RECEIVE PKG MATERIALS		BDA	09OCT95A	13MAY96
SAMPLING				
+ SAMPLING		BDA	27NOV95A	27FEB96
SAFETY ASSESSMENT				
+ REVIEW,REVISE AND IMPLEMENT BIOs		BDA	11JAN96	30APR96
+ ACE TEAM		BDA	11JAN96	22FEB96
+ PREPARE PLAN OF ACTION & SUBMIT ORR NOTIFICATION		BDA	23FEB96	29FEB96
+ DEVELOP NMSLs FOR PROCESSING ACTIVITIES		BDA	05JAN96A	07FEB96
+ PREPARE PROCESSING PROCEDURES AND TRAINING			30OCT95A	21MAR96
BOTTLING				
BOTTLING				
SP06010	Order SST	BDA	01MAR96	07MAR96
SP06105	IP 3.5-006 (5/31/96): Begin Btl & Ship HEU Slns	BDA	31MAY96*	
SP06106	PM R96-4(a)(5/31/96): First Shipment	BDA	10JUN96*	
SP06100	Bottle	BDA	17MAY96	26SEP96
SP06111	PM R96-4(b)(9/31/96): Last Shipment - Tnks Empty	BDA		30SEP96*
SP06111B	RFCA COMMITMENT HEUN Slns Removed From RFETS	BDA		31DEC96*
RINSING				
RINSING				



Sheet 2 of 3

ID	Activity Description	CA	Early start	Early finish
SP07000	Order & Receive Rinsate	BDA	10JUN96	29JUL96
SP07200	Rinse Procedure & Tank Rinsing	BDA	27SEP96	15OCT96
	READINESS REVIEW			
	READINESS REVIEW			
SP08000	Readiness Review	BDA	22MAR96	16MAY96
	CONVERSION			
	CONVERSION			
SP09100	Offsite Conversion of HEUN	BDA	17JUN96	12DEC96
SP09200	Package Converted Material for Shipment	BDA	13DEC96	27DEC96
SP09300	Offsite Conversion Complete	BDA		27DEC96
	Remove Category I and II SNM from Bldg 779			
	2.11 PREREQUISITES FOR LONG TERM REPACKAGING			
	2.11.4 CONSTRUCTION PROJECTS			
S202020502	DOE APPROVAL KD-4 PALLETS (TIE DS29571172)	AAA		17APR96*
S202020402	DOE APPROVAL KD-4 PALLET INS. GB-TIE DS29587900	AAA		27JUN96*
	2.11.1 NMSL S/R			
S202021200	B371 Capacity - Prepare S/R NMSL for 4.5kg	AAA	08NOV95A	09OCT96
	2.12 CONSOLIDATION B-779			
	B779 PREPARATORY TASKS TO SHIP MAT'L			
S202030000	B779 Shipping Preparations	AAA	01SEP95A	16JAN96
S202040000	B707/777 Transfer & Receipt	AAA	25JAN96	17APR96
S202050000	B371/707/777 Transfer & Receipt	AAA	25JAN96	18JUL96
S202040560	INTERNAL PLANNING MILESTONE - CAT I&II SNM	AAA		18JUL96
S202040561	RFCA COMMITMENT - CAT I & II REMOVED FROM B799	AAA		30SEP96*
	+ B371 PREPARATORY TASKS TO RECEIVE MAT'L			
		AAA	11JAN96	18JUL96
	+ B779 TRANSPORTATION PREPORATORY TASKS			
		AAA	04DEC95A	18JUL96
	+ 2.12.3 B-779 CONS - B-371 VAULT OPTIMIZATION			
		AAA	02OCT95A	18JUL96
	2.12.6 B-779 CONS - B-371 S/R OPTIMIZATION			
S202020300	Load Pallets into Stacker/Retreiver (S/R)	AAA	28JUN96	09AUG96
	2.12.5 B-779 CONS - B-371 APPROVAL TO LOAD S/R			
S202011001	READINESS/APPROV LOAD SNM IN S/R @ 4KGS	AAA	26SEP96	09OCT96
	2.12.8 B-779 CONS - DECATEGORIZATION			
S2SUS2000	Planning & Prepatory Work	AAA	22DEC95A	02FEB96
S2SUS3000	Hold-up, Calibration, Gloves/Bags	AAA	22DEC95A	15MAR96
S2SUS4000	Scan, Sweep, Assay & Verify	AAA	26MAR96	22AUG96
S2SUS5000	Evaluation & Replanning	AAA	23AUG96	09JUN97



RFCA
Appendix 4
March 14, 1996

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APPENDIX 5

Water Management

WATER MANAGEMENT

A Surface Water and Groundwater Working Group (Group) is hereby created. The Group is composed of representatives of the U.S. Department of Energy, the U.S. Environmental Protection Agency, the Colorado Department of Public Health and Environment, Kaiser-Hill, Inc., the U.S. Fish and Wildlife Service and the cities of Westminster, Northglenn, Thornton, Broomfield, Boulder, Arvada, and Jefferson and Boulder Counties. Any other entity that anticipates downstream water quality obligations from the Rocky Flats site will be invited to join the Group.

The Group will evaluate the proposed "Action Level Framework for Surface Water, Groundwater and Soils" and make recommendations to the decision-makers on this proposal. The Group will also develop and recommend to the decision-makers a Surface Water and Groundwater Management Plan (Plan). The Group will be guided by relevant agreements, statutes and regulations such as provisions in the Rocky Flats Cleanup Agreement (RFCA) and its Vision preamble. In addition, the Group will integrate numerous water quality documents currently under development including but not limited to the Integrated Monitoring Plan, the Pond Operation Plan, and if appropriate, revisions to existing water standards.

The Group will strive for consensus recommendations to the decision-makers regarding any decisions and actions related to water quality at, or impacted by, the Rocky Flats Environmental Technology Site.

The Group is directed to present its recommendations regarding the proposed "Action Level Framework for Surface Water, Groundwater and Soils" on or before the end of the public comment period for the RFCA, and the Group's proposed Plan on or before June 1, 1996, to the decision-makers whereupon the decision-makers will evaluate the Group's recommendations and Plan and make a final decision on them (the Group will evaluate these time frames, determine what is most effective and recommend timing adjustments to the decision-makers). In its deliberations, the decision-makers will consult with the Group on any changes the decision-makers deem necessary on the Group's recommendations and Plan before a final decision is made.

APPENDIX 6

SNM MAJOR ACTIVITIES FOR FY 96

RFCA
Appendix 6
March 14, 1996

SNM MAJOR ACTIVITIES FOR FY96

1. Disposition HSP 31.11 Items

1100 plutonium metal items that are not in compliance with the surveillance requirements of the Health & Safety Practices Manual Section 31.11 (HSP 31.11) will be dispositioned. Depending upon the metallurgical characteristics of each item, dispositioning can range from simple weighing to verify that additional weight has not been gained beyond threshold values, to physical removal of loose oxide.

TARGET	DATE
Disposition 1100 HSP 31.11 items	September 30, 1996

2. Stabilize Pu Oxides

80% of potentially pyrophoric plutonium oxides generated from HSP 31.11 disposition activities will be thermally stabilized at a high temperature to produce a stable and safer form of oxide. Oxides are accumulated and safely stored until a full stabilization batch is available. If, at the effective date of September 30, 1996, a full batch has not been accumulated, it will not be stabilized.

TARGET	DATE
Stabilize Pu oxides generated from Disposition of HSP 31.11 items	September 30, 1996

3. Remove HEUN Solutions from RFETS

Highly enriched uranium (HEUN) will be shipped to Nuclear Fuels Service (NFS) in Irwin, Tennessee. The HEUN solution will be transferred from tanks in B886 to bottles and then packaged in approved containers for offsite shipment. A small amount of HEUN solution will remain in piping low points and will not be drained during this activity. This solution will be dispositioned during deactivation.

TARGET	DATE
Remove the HEUN solutions from Building 886 and ship offsite	December 31, 1996

4. Remove Category I and II SNM from Building 779

All SNM designated under DOE Order 5633.32 as Category I or II that is not in untoward locations (i.e., that is in vault type rooms or gloveboxes) will be removed from B779 to support reduction of security requirements and subsequent deactivation.

Target	Date
Remove Category I and II SNM from Building 779	September 30, 1996

APPENDIX 7

Acronym List

Acronym List

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
APCD	Air Pollution Control Division (in CDPHE)
ARAR	Applicable or Relevant and Appropriate Requirement
CAMU	Corrective Action Management Unit
CAPPCA	Colorado Air Pollution Prevention and Control Act
CCR	Colorado Code of Regulations
CDPHE	Colorado Department of Public Health and Environment
CDNR	Colorado Department of Natural Resources
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (Superfund)
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
CRP	Community Relations Plan
DNFSB	Defense Nuclear Facilities Safety Board
DOE	(U.S.) Department of Energy
DOI	(U.S.) Department of Interior
DOJ	(U.S.) Department of Justice
DRC	Dispute Resolution Committee
EM	Environmental Management (an office within DOE)
EPA	Environmental Protection Agency
ER	Environmental Restoration
FFC	Federal Facility Compliance (Act)
FR	Federal Register
FS	Feasibility Study
HRR	Historical Release Report
HSWA	Hazardous and Solid Waste Amendments of 1984
IAG	The 1991 Interagency Agreement between DOE, EPA and CDPHE
IGD	Implementation Guidance Document
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
FSUWG	Future Site Use Working Group
FY	(federal) Fiscal year
LRA	Lead Regulatory Agency
MOU	Memorandum of Understanding
NA/NFA	No Action/No Further Action

nCi	nanoCurie
NCP	National Contingency Plan
NPL	National Priorities List
OMB	Office of Management and Budget
OSWER	Office of Solid Waste and Emergency Response (in EPA)
OU	Operable Unit
PAM	Proposed Action Memorandum
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act of 1986
SEC	Senior Executive Committee
SEDCR	State-EPA Dispute Resolution Committee
SESEC	State-EPA Senior Executive Committee
SNM	special nuclear materials
SRA	Support Regulatory Agency
TRU	transuranic
TSD	treatment, storage or disposal unit
UST	underground storage tank
WIPP	Waste Isolation Pilot Project

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-3300
Fax (303) 759-5355

222 S. 6th Street, Room 232
Grand Junction, Colorado 81501-2768
Phone (303) 248-7164
Fax (303) 248-7198

Colorado Department
of Public Health
and Environment

March 1, 1996

Mr. Mark Silverman
U. S. Department of Energy
Rocky Flats Office, Bldg 116
P.O. Box 928
Golden, Colorado 80402-0928

Dear Mr. Silverman,

In the course of RFCA negotiations, DOE indicated an interest in obtaining some assurance from the state that a proposal to co-locate facilities for the retrievable monitored storage (RMS) or disposal of hazardous or mixed remediation and process wastes would be acceptable to the regulators. Co-location is of concern to DOE because it may impact the orderly progress of cleanup and building decommissioning. CDPHE supports the notion of centralizing any long-term waste management units, such as RMSs and disposal units, so we support, as a conceptual matter, co-locating such facilities for remediation and process wastes. Of course, co-location must be consistent with technical and regulatory requirements.

For remediation wastes, the Parties have discussed at some length the use of a corrective action management unit (CAMU). As you know, the CAMU allows storage or disposal of remediation wastes without triggering certain RCRA requirements, such as the requirement to treat wastes to meet the land disposal restriction (LDR) treatment standards promulgated at 6 CCR 1007-3, Part 268. However, a CAMU cannot be used to manage hazardous or mixed process wastes. The draft Rocky Flats Cleanup Agreement (RFCA) embodies the Parties' agreement regarding designation of a CAMU for remediation wastes, and co-location of such a facility with a RCRA/CHWA Subtitle C facility for storage or disposal of hazardous or mixed process wastes at paragraph 79 (Rev. 12). The draft RFCA also specifies that wastes generated from activities regulated under RFCA -- environmental cleanup and building decommissioning -- are remediation wastes. We have concluded that pondcrete and other hazardous or mixed process wastes now stored at RFETS are not remediation wastes.

DOE has also expressed interest in an RMS for hazardous or mixed

process wastes. Assuming use of a Subpart X unit (6 CCR 1007-3, § 264.600) as the regulatory mechanism for approving and permitting such an RMS, design criteria must ensure retrievability of wastes and protection of human health and the environment through a combination of requirements that include, but are not limited to: waste treatment as described in the following paragraph; detection and monitoring/inspection requirements; operating and design requirements, including cap/liner system that meets the requirements as set forth in 6 CCR § 1007-3, Part 264, Subpart N; a ground water monitoring system; and requirements for responding to releases of wastes or constituents from the units.

To ensure safe storage of hazardous or mixed process wastes in an RMS, treatment of wastes as may be necessary to meet the statutory LDR standard of "substantially diminish[ing] the toxicity of the waste or substantially reduc[ing] the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized" (RCRA § 3004(m)) would be required prior to placement in the RMS.

Under current law, if the Subpart X RMS were ever converted to a disposal facility, the wastes in it would have to meet the statutory and regulatory LDR treatment standards in effect at the time of conversion from storage to disposal. In addition, a CHWA permit modification and a certificate of designation would have to be obtained.

We hope this letter has adequately addressed your questions. If you would like to discuss this matter further, please call me at 692-3356.

Sincerely,

Joe Schieffelin, Unit Leader
Permitting and Compliance Unit
Federal Facilities Program

Appendix 9

Vision

THE ROCKY FLATS VISION

Draft for Public Comment

The vision for Rocky Flats is:

- To achieve accelerated cleanup and closure of Rocky Flats in a safe, environmentally protective manner and in compliance with applicable state and federal environmental laws;

- To ensure that Rocky Flats does not pose an unacceptable risk to the citizens of Colorado or to the site's workers from either contamination or an accident; and

- To work toward the removal of contamination, wastes, buildings, facilities and infrastructure from Rocky Flats consistent with community preferences and national goals.

The following goals will be accomplished in the shortest possible time, in the most cost effective manner, and within a streamlined, flexible and effective regulatory framework:

1. The highest priority at Rocky Flats is to reduce the risks posed by plutonium, other special nuclear materials, and transuranic wastes. These materials will be collected, consolidated and safely stored in a retrievable and monitored manner and in the fewest number of buildings for removal to off-site locations at the earliest possible date.

2. Other wastes presently stored on-site, generated during cleanup, and removed from buildings during cleanup and demolition will be collected, consolidated, treated where necessary, and stored in a retrievable and monitored manner to support the goal of ultimate removal to off-site locations where feasible. In some cases, on-site disposal may be appropriate in light of risk reduction, safety, costs, and feasibility considerations. In any case, the federal government will continue to be responsible for any contamination or wastes potentially left on-site.

3. The quality of water supplies of the communities surrounding Rocky Flats will be protected. In addition, the water leaving the site will be of acceptable quality for any use.

4. All buildings will be cleaned up as needed so that they can either be demolished or converted to other appropriate uses.

5. At a minimum, given current technology and resources, Rocky Flats will be cleaned up to allow open space and other appropriate uses. Where possible, the site will be cleaned up to the maximum extent feasible. Should cost effective technologies and additional fiscal resources become available, a goal of achieving average background levels of contamination for the Front Range of Colorado will be supported. The site's unique ecological values will be preserved.

6. The future uses for Rocky Flats will be decided with the full and active involvement of local governments and the public. Cleanup and closure activities will support a wide range of appropriate future uses.

DISCUSSION AND ANALYSIS

As a former contributor to our nation's defense, Rocky Flats is one of the larger U.S. Department of Energy nuclear industrial facilities undergoing cleanup and closure. Constructed in 1952 along what was then a sparsely populated area of the foothills near Denver, Rocky Flats now sits on the edge of a major metropolitan area. Over 2 million people live within 50 miles of the facility. The site is directly upstream of water supplies that serve four municipalities and over 300,000 people. As a result, a coherent course of action is needed to promote accelerated cleanup, consolidation, reuse and closure of the site.

This vision provides a broad statement for the future of Rocky Flats. All activities, agreements, planning documents and other legal arrangements shall be guided by this vision and preserve, to the maximum extent possible, the full range of options and opportunities necessary to help accomplish and attain this vision. Specific and day-to-day activities at the site will be governed by relevant agreements and other legal arrangements. This vision also will accommodate changing priorities, activities and strategies to reflect community values.

Below is a further elaboration of this vision and a discussion its adaptability to meet future budgetary, technological, safety concerns and community preferences. Local elected officials and the public will be fully involved in making decisions and addressing issues in all of the topics that follow.

1. Removal of Plutonium, Transuranic Wastes and Other Special Nuclear Material

The highest priority of this vision is to make Rocky Flats safe. This principally involves the collection, stabilization, and safe, secure and retrievable and monitored storage of plutonium, transuranic wastes and other special nuclear materials for as long as they remain at Rocky Flats. Presently, there is no off-site facility available to receive these materials from Rocky Flats. As a result, this material may remain at the site in a safe configuration for years. However, the agencies are committed to help secure the availability of off-site locations to receive these materials. These materials must be removed from Rocky Flats as soon as a location is found to receive them and it is safe to do so. The U.S. Department of Energy is committed to begin removing the plutonium and special nuclear materials as soon as possible with a target set to begin removal no later than the year 2010 with final removal completed by the year 2015. In the year 2000, these dates will be evaluated to determine if these time frames need to be adjusted and then reestablished as enforceable commitments from that date forward. The Waste Isolation Pilot Plant (WIPP) in New Mexico may be available sooner than the year 2010 to receive transuranic wastes. The U.S. Department of Energy is committed to begin removing transuranic wastes to WIPP or, if necessary, to another off-site location, as soon as it is available.

2. On-Site Disposal of Wastes and Materials

Efforts will be made to remove wastes, building debris and other materials from Rocky Flats to off-site disposal locations. However, budgetary, technological, safety and other circumstances may require that some of these wastes be disposed of in-place or stored on-site in a safe and retrievable and monitored manner for many years. At some point in the future, it may be necessary, from a risk reduction, budgetary, technological, safety and environmental standpoint, to dispose of these wastes and materials on-site. If so, every effort will be made to minimize the amount of material that must be disposed of on-site. Future retrieval of wastes disposed of on-site will not be precluded if and when technological development, budgetary availability, and location of an off-site disposal facility permits such activity. Should any wastes or contamination remain on-site, the federal government will be responsible for effective monitoring, maintenance of facilities, and maintenance of institutional controls adequate to prevent exposure from, and any release of, contamination.

3. Water

The water supplies of the communities downstream of Rocky Flats will be protected during cleanup and closure activities and for the long-term. Water planning and standard setting processes will be conducted with the active participation and involvement of local governmental authorities and the public. The U.S. Department of Energy will maintain any systems that are needed to protect water resources.

4. Buildings

The cleanup of buildings, the consolidation of wastes and materials within them, and the safe demolition of buildings will occur to reduce risks and reduce site operating costs. All radioactive and hazardous wastes stored in buildings and much of the equipment and hardware within them – such as duct-work, piping and equipment, some of which may be contaminated with radioactive and hazardous components – will be removed or decontaminated before the buildings are reused or demolished. The contaminated equipment and hardware removed from the buildings will be stored in a retrievable and monitored manner. Some on-site disposal of this material, including building debris, may be necessary. Those buildings that may have value for other economic uses will be identified and the option of converting and transferring these buildings to other appropriate uses once cleanup and closure work has been completed will be preserved.

5. Level of Cleanup

While cleaning up the site to average background levels for the Front Range of Colorado is a goal of this vision, it is beyond the reach of today's technology, budgetary resources, and legal requirements. As a result, the site will be cleaned up to allow open space and other appropriate uses given current technology and fiscal resources. Further cleanup efforts will be made where feasible as fiscal resources and cost effective technology allows. The U.S. Department of Energy

is committed to assuring ongoing monitoring and maintenance of any wastes or contamination remaining on-site, the containment of contamination, and allowing for the further treatment of wastes as new and emerging cost effective technologies become available. In addition, Rocky Flats contains a unique ecological habitat that cannot be easily replaced. Its ecological values will be preserved and protected to the maximum extent possible during cleanup and closure activities.

6. Land Use

All land use decisions pertaining to Rocky Flats will be made with the active involvement of local governmental authorities and the public. This vision anticipates that Rocky Flats will be cleaned up so that it can be used as open space or converted to other appropriate uses consistent with community preferences, although opportunities for residential use may be limited. There will be a need to restrict access to certain areas of the site while cleanup and closure activities are conducted and while plutonium, transuranic wastes, and special nuclear materials remain on-site. Access and use restrictions also may need to be applied where residual contamination may be present and constitute a risk to the public and for areas that house storage facilities or possible landfills. However, most of the land should be able to accommodate a wide range of appropriate future uses and economic opportunities.

7. Budget

All efforts will be made to secure the funds necessary to accomplish this vision within the shortest possible time. However, the limitations of the federal budget and the need to reduce the costs of cleanups at federal facilities are realities that will affect the scope and pace of work. When budget shortfalls occur, the site's activities may need to be adjusted and time frames may need to be extended. The agencies will involve the communities and the public on needed revisions and alternatives to the site's activities due to budget shortfalls. However, no matter how the site's activities and time frames may need to be adjusted because of budget realities, adherence to the vision's goals of reducing risk, preserving future opportunities, and achieving cleanup will always be preserved.

8. Technological Development

Every effort will be made to develop and apply new and emerging cost effective technologies to address waste treatment, cleanup and closure needs at the site. However, recognizing the urgent need to reduce risks, promote safety and advance activities to accomplish this vision, treatment, cleanup and closure activities may need to be accomplished using the best technology presently available. The agencies are committed to investigating and applying new and emerging cost effective technologies to treat and further cleanup any wastes or contamination remaining on-site, including wastes in storage and possible disposal facilities. New and emerging cost effective technologies will be explored on an ongoing basis as long as waste or contamination remain at Rocky Flats. Activities to accomplish this vision should not wait for the development of new technologies. However, permanent and irretrievable decisions will be kept to a minimum to take advantage of possible new and emerging cost effective technologies.

9. Local Elected Official and Community Involvement

Rocky Flats is located in Jefferson County and near several municipalities. It lies within 50 miles of a metropolitan area of over 2 million people. As a result, the need for public involvement in site activities is critical. Local elected officials, a wide range of stakeholder organizations including a site specific advisory board and a community reuse organization, and the public have been and will continue to be consulted. In particular, future decisions regarding land use, water quality, public safety, and infrastructure must be closely coordinated with local governmental officials, stakeholder organizations and the public. The local governments which surround or are near Rocky Flats have permanent stewardship responsibilities that will be affected by Rocky Flats. These responsibilities demand that local government officials help shape and influence cleanup and closure decisions. In addition, stakeholder organizations play a vital role in providing broad community input on site decisions. Local government officials, stakeholder organizations and the public will be invited to fully comment and advise on the selection and direction of projects and activities. Local officials, stakeholder organizations and the public will be involved early in the policies and activities for the site.

10. Ethical Considerations

Reducing risks, protecting the public and workers, accelerating cleanup and closure activities, and increasing cost effectiveness are inherent in this vision. In addition, this vision reflects a number of overarching ethical considerations. Ethical stewardship at Rocky Flats requires a mechanism for continual governance and responsibility. Decisions must include consideration for the welfare of future generations. This stewardship acknowledges the communities and governments' mutually reinforcing responsibilities regarding our nuclear legacy. To this end, a commitment to caretaking nuclear materials is made for the future that includes:

- fairness;
- openness;
- trust and trust worthiness;
- accessibility of information;
- seeking sufficient resources; and
- consideration of options to reduce any uneven impacts to communities.

Signed this 14th day of March, 1996

Gail Schoettler
Lt. Governor
State of Colorado

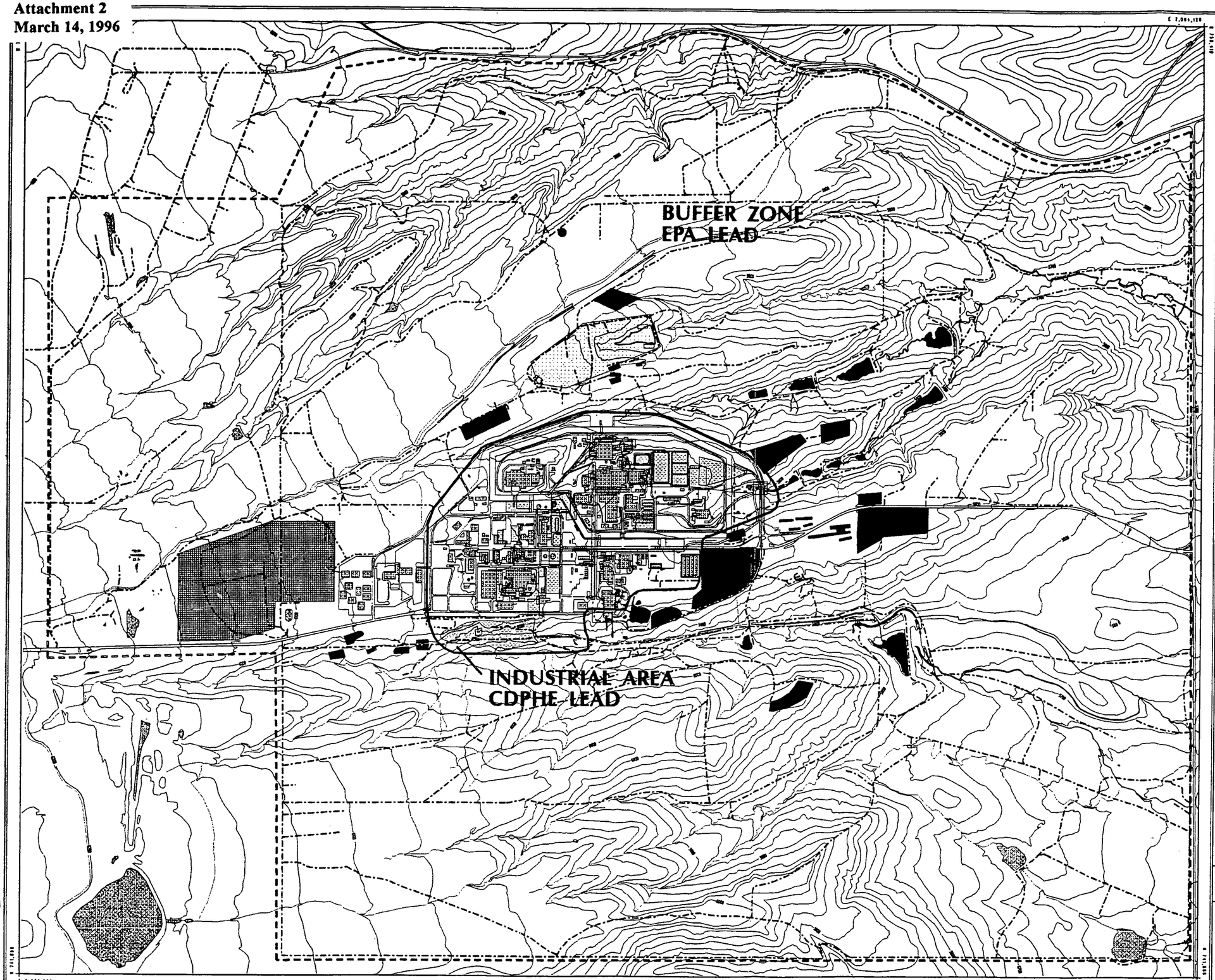
Thomas Grumbly
Acting Under Secretary
U.S. Department of Energy

Steven Herman
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency

Jack McGraw
Deputy Regional Administrator
U.S. Environmental Protection Agency

Mark Silverman
Manager, Rocky Flats Field Office
U.S. Department of Energy

Tom Looby
Director, Office of Environment
Colorado Department of Public Health and Environment



Proposed Consolidated Operable Units
Conceptual Strategy Purposes for Discussion Only

Note: OU3 not shown

See paragraph 61 of RFCA

EXPLANATION

- Industrial Area
- Buffer Zone OU
- Operable Unit 1
- Operable Unit 7
- Operable Unit 11 Closed through CAD/ROD Process
- Operable Unit 15 Closed through CAD/ROD Process
- Operable Unit 16 Closed through CAD/ROD Process
- Individual Hazardous Substance Sites (IHSS)

Standard Map Features

- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Contours (20' Intervals)
- Rocky Flats boundary
- Paved roads
- Dirt roads

DATA SOURCE:
Buildings, roads, and fences provided by Facilities Engr., EG&G Rocky Flats, Inc. - 1991.
Hydrology provided by USGS - (date unknown)
Proposed Consolidated OU's data provided by Annette Primrose of RMRS/SA - 8-1995.

Scale = 1 : 18840
1 inch represents approximately 1653.33 feet

800 0 1600 2000ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:
RMRS Rocky Mountain Remediation Services, L.L.C.
Geographic Information Systems Group
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

MAP ID: PC-OUs December 06, 1995

/home/rh1161f2/projects/ou2/mxds/combind-ou/multi-ou.aml

FINAL **ER Ranking** **Rev. 9/95**

Rank	IHSS Number and Name	Total Tank Contents	Total Ground Water	Total Subsurface Soil	Total Surface Soil	Total Chemical Score	PPRG Score	Mobility Score Multiplier	Potential for Further Release Multiplier	Total Priority Score	General Comments	Further Investigation Needed?	ROM Cost	ROM Schedule	Worker Safety Concerns	Waste Issues	Risk Reduction	Env Risk from Remediation	Potential Remediation Methodology	Phase 2 Comments
1	121/124.3 Process Waste Tank T-14	781	<1	<1	n	781	10	3	3	90		Yes	$500 K	6 months	high	yes	yes	Low	Disconnect plumbing, residue/inventory removal, RCRA closure	
2	118.1, 132 and 121 Tanks 9 & 10	523	3	442	2	970	10	3	3	90	IHSSs evaluated together	yes, define extent	$2 M	1.5 years	high	yes	yes	Low	Product recovery, followed by excavation	
3	121/124.1/124.2/125 PW Tank T-16N	375	<1	<1	n	375	9	3	3	81		Yes	$500 K	6 months	high	yes	yes	Low	Disconnect plumbing, residue/inventory removal, RCRA closure	
4	109 Ryan's Pit		25	85	<1	111	8	3	3	72	Remediation in progress		$1.4 M	5 months	moderate	yes	yes	Moderate	Excavate, thermal desorption of waste	Worker safety issues regarding PPE
5	121 Tanks T-2/T-3, 122-Underground ConcreteTanks	86	5	28	<1	119	7	3	3	63		Yes	$600 K	9 months	high	yes	yes	Low	Remove above ground tank, remove residue and abandon others	
6	112/155/183/140 903 Pad and Lip Area		200	3	1136	1339	10	3	2	60	IHSSs evaluated together	Yes, limited	$3.5 M	9 months	high	yes	yes	High	Excavate hot areas, cap or grade and stabilize remaining	
7	113 Mound		77	4	<1	81	7	3	2	42		Yes, limited	$1.1 M	4 months	high	none	yes	Moderate	Excavate, thermal desorption of soils prior to disposal	
8	108 Trench T-1		77	4	<1	81	7	3	2	42		Yes, limited	$2.7 M	6 months	high	yes	yes	High	Excavate, shred, thermal desoption of soil, oxidize uranium	Possibly pyrophoric uranium in trench
9	111.1 Trench T-4		25	2	n	27	4	3	3	36	Free product present		$2.5 M	6 months	high	yes	yes	Moderate	Excavate, treat waste	Possible liquid disposal waste issues
10	110 Trench T-3		16	10	<1	25	4	3	3	36	Large quantities of free product present		$2.5 M	6 months	high	yes	yes	Moderate	Excavate, treat waste	Possible liquid disposal waste issues
11	129 - 2 tanks outside steam plant	<1	n	n	6	6	2	3	3	18	Known contaminant plume	Yes, define extent	$5.1 M	1.5 years	moderate	none	minor	Low	Remove tanks, remove and remediate soil	cost depends on how many tanks removed
12	119.1 - OU 1- Solvent Spill Site		77	2	7	86	7	2	1	14	Uses current extraction well data only	Yes, pinpoint area	$9 M	6 months	moderate	yes	yes	Moderate	Excavate soil	
13	131 Rad Site #1 - 700 Area		14	n	4	19	3	2	2	12		Yes	n/a	n/a	no issues	none	minor/no	Low	If no subsurface contamination, probably won't require remediation	
14	189 Nitric Acid Tanks		2	n	5	7	2	3	2	12	Contamination probably ass'td with 157.2		n/a	n/a	no issues	none	minor/no	Low	Investigate futher prior to decision	Probably not the contaminant source
15	137 Bldg 712/713 Cooling Tower Blowdown		n	n	64	64	6	2	1	12	Contamination probably due to B779	Yes	$150 K	5 months	low	none	yes	Low	Hot spot soil removals	
16	174.1 (174a) PU&D Storage Areas		n	n	34	34	5	2	1	10			$500 K	6 months	low	none	minor/no	Low	Hot spot removal or cap if required	
17	101 Solar Ponds		1	<1	46	48	5	2	1	10	Upgradient groundwater from 118.1 not used		$31 M	3 years	moderate	yes	yes	Moderate	Remove liners, waste stabilization and disposal	
18	114-Present Landfill (includes IHSS 203)		4	29	<1	33	5	2	1	10	Compliance, presumptive remedy for closure		$32 M	3 years	low	none	minor	Low	Presumptive Remedy, cap, slurry wall, and leachate collection system	
19	121, 128.1, 128.2 Tank T-8	1	n	<1	<1	1	1	3	3	9		Yes	$700 K	9 months	moderate	yes	yes	Low	Leave tank, remove residue, RCRA close, remove contaminated soils	
20	121 Tank T-40	1	n	n	<1	1	1	3	3	9		Yes	$800 K	10 months	moderate	none	yes	Low	Remove tanks, treat soil	
21	176 S&W Yard		n	n	24	24	4	2	1	8			$500 K	6 months	low	none	minor	Low	Hot spot removal or cap if required	
22	120.1 North Fiberglassing area		n	n	21	21	4	2	1	8	Contamination probably from 400 Complex		$500 K	6 months	low	none	minor	Low	Hot spot removal or cap if required	
23	153 Oil Burn Pit		77	4	n	81	7	1	1	7	Remediate with Mound Site, in PA fence									
24	139.1 KOH, NaOH condensate tanks spill		n	n	19	19	3	2	1	6		Yes								
25	139.2 Hydrofluoric Acid Tank spills		n	n	19	19	3	2	1	6		Yes								
26	150.3 Rad Site Between B771 & B774		n	n	16	16	3	2	1	6										
27	214 750-Pad pondcrete/saltcrete storage		n	n	13	13	3	2	1	6										
28	157.2 Rad Site south		n	n	12	12	3	2	1	6										
29	121 Tank T-29	8	<1	<1	<1	8	2	1	2	4										
30	144 Sewer line overflow		n	n	8	8	2	2	1	4		Yes								
31	157.1 Rad Site North-Central Ave Ditch		n	n	6	6	2	2	1	4										
32	120.2 West Fiberglassing Area		n	n	6	6	2	2	1	4										
33	160 Rad Site Bldg 444 Parking Lot		2	n	16	18	3	1	1	3	Paved									
34	158 Rad Site - B551		11	n	3	14	3	1	1	3	Paved									
35	172 Central Avenue Waste Spill		n	n	18	18	3	1	1	3										
36	136.2 Cooling Tower Pond East of B444		n	n	6	6	1	2	1	2										
37	164.3 Rad Site #2 800 Area, 887 Pad		n	n	5	5	1	2	1	2										
38	163.1 Rad Site 700 North B774		n	n	4	4	1	2	1	2										
39	143 771 Outfall		1	<1	3	4	1	2	1	2										
40	127 Low level Rad waste leak		n	n	2	2	1	2	1	2										
41	188 Valve Vault 11, 12 and 13		n	n	1	1	1	2	1	2										
42	150.4 Rad Site NW of B750		n	n	1	1	1	2	1	2										
43	159 Rad Site B559		6	<1	n	6	1	1	1	1										
44	111.3 SE Trenches T-6		n	3	<1	3	1	1	1	1										
45	111.4 SE Trenches T-7		<1	3	<1	3	1	1	1	1										
46	111.5 SE Trenches T-8		<1	3	<1	3	1	1	1	1										
47	111.6 SE Trenches T-9		<1	3	<1	3	1	1	1	1										
48	138 Bldg 779 Cooling Tower Blowdown		n	n	2	2	1	1	1	1		Yes								
49	164.2 Rad Site #2, 800 Area, Bldg 886 Spill		2	<1	<1	2	1	1	1	1										
50	111.7 SE Trenches T-10		n	tbd	tbd	0					Investigation done, analysis not, free product?									
INV	**121 Old Process Waste Lines-includes:**										IHSS 121 includes the following italicized IHSSs	Yes								
INV	*66 segments (35,000') & 22 tank units-not investigated*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	*123.2 Valve Vault w. of 707*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	*146.1 Process Waste Tank #31*	n	n	n	n						Tank removed	Yes								
INV	*146.2 Process Waste Tank #32*	n	n	n	n						Tank removed	Yes								
INV	*146.3 Process Waste Tank #34W*	n	n	n	n						Tank removed	Yes								
INV	*146.4 Process Waste Tank #34E*	n	n	n	n						Tank removed	Yes								
INV	*146.5 Process Waste Tank #30*	n	n	n	n						Tank removed	Yes								
INV	*146.6 Process Waste Tank #33*	n	n	n	n						Tank removed	Yes								
INV	*147.1 MAAS Area*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	*149.1 OPWL to SEPS*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	*149.2 OPWL to SEPS*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	*215 Abandoned sump near 774*	n	n	n	n						Not characterized, probably highly contaminated	Yes								
INV	128 Oil Burn Pit #1		<1	n	<1						Tied to Building 335 D&D Project	Yes								
INV	171 Fire Training		n	n	<1						Tied to Building 335 D&D Project	Yes								
INV	123.1 Valve Vault #7		n	n	<1							Yes								
INV	135 Bldg 335 Cooling Tower		n	n	<1							Yes								
INV	150.1 Rad Site N. of 771		n	n	<1							Yes								
INV	150.2 Rad Site W. of 771/776		n	n	<1						Rad Screens only	Yes								
INV	150.7 Rad Site S. of 779		n	n	<1						Rad Screens only	Yes								
INV	150.8 Rad Site S. of 776		n	n	<1							Yes								
INV	151 Fuel Oil Leak		n	n	<1							Yes								
INV	163.2 Americium Slab		n	n	<1						HPGe Survey	Yes								
INV	173 Rad Site Bldg 991		n	n	<1							Yes								
INV	184 Rad Site 991 Steam		n	n	<1							Yes								
INV	170 PU & D Storage Yard		n	n	<1							Yes								
INV	174.2 (174b) PU & D Storage Yard; Dumpster		n	n	<1							Yes								
INV	210 Bldg 880 Cargo Container		n	n	<1							Yes								
INV	213 904 Pad; Pondcrete Storage		n	n	n						Active Storage Unit, not sampled	Yes								
INV	116.1 Bldg 447, W. Loading Dock		n	n	<1							Yes								
INV	116.2 Bldg 444, S. Loading Dock		n	n	<1							Yes								
INV	136.1 Cooling Tower Pond W. of 444		n	n	<1							Yes								
INV	117.1 North Site/Scrap Metal		n	n	<1							Yes								
INV	117.2 Middle Site Chemical Storage		n	n	<1							Yes								
INV	148 Waste Leaks		n	n	<1							Yes								
INV	152 Fuel Oil Tank 221 Spills		n	n	<1							Yes								
INV	197 Scrap Metal Storage		n	n	<1							Yes								
INV	161 Rad Site #2 - W. of 664		n	n	<1							Yes								
INV	162 Rad Site #2 - 700 Area		n	n	<1							Yes								
INV	164.1 Rad Site #2 - 800 Area		n	n	<1							Yes								
INV	154 Pallot Burn Site		n	n	<1						Removed during PA construction, verify only	Yes								
LOW	177-OU 10		<1	n	<1						Does not meet PPRGs									
LOW	118.2 Solvent Spills North End of Bldg. 707		n	n	<1						Evaluate using approved NA/NFA process	Yes								
LOW	188 Acid Leak Southeast of Bldg. 374		n	n	<1						Evaluate using approved NA/NFA process									
LOW	121-P08 OPWL Pipeline; 135 ft; Bldg. 881		n	n	n						Evaluate using approved NA/NFA process	Yes								
LOW	121-P57 OPWL Pipeline; 112 ft; Bldg. 122		n	n	n						Evaluate using approved NA/NFA process	Yes								
LOW	121-T12 Invalid tank location		n	n	n						Evaluate using approved NA/NFA process									
LOW	121-T31 Invalid tank location		n	n	n						Evaluate using approved NA/NFA process									
LOW	121-T33 Invalid tank location		n	n	n						Evaluate using approved NA/NFA process									
LOW	121-T34 Invalid tank location		n	n	n						Evaluate using approved NA/NFA process									

n = data not available

FINAL **ER Ranking** **Rev. 9/95**

Rank	IHSS Number and Name	Total Tank Contents	Total Ground Water	Total Subsurface Soil	Total Surface Soil	Total Chemical Score	PPRG Score	Mobility Score Multiplier	Potential for Further Release Multiplier	Total Priority Score	General Comments	Further Investigation Needed?	ROM Cost	ROM Schedule	Worker Safety Concerns	Waste Issues	Risk Reduction	Env Risk from Remediation	Potential Remediation Methodology	Phase 2 Comments
LOW	121.T35 Invalid tank location		n	n	n						Evaluate using approved NA/NFA process									
LOW	175 S&W B.980 Container Storage Facility		n	n	<1						Evaluate using approved NA/NFA process									
LOW	181 Building 334 Cargo Container Area		n	n	<1						Evaluate using approved NA/NFA process									
LOW	182 444/453 Drum Storage Area		n	n	<1						Evaluate using approved NA/NFA process									
LOW	205 Sump #3 Acid Site, SE B460		n	n	<1						Evaluate using approved NA/NFA process									
LOW	206 Inactive D-386 HW Tank B374		n	n	<1						Evaluate using approved NA/NFA process									
LOW	207 Inactive B444 Acid Dumpsters		n	n	<1						Evaluate using approved NA/NFA process									
LOW	208 Inactive 444/447 Waste Stor.		n	n	<1						Evaluate using approved NA/NFA process									
LOW	147.2 Bldg 881 Conversion Activity		n	n	<1						Evaluate using approved NA/NFA process									
LOW	187 Sulfuric Acid Spill; B443		n	n	n						Evaluate using approved NA/NFA process									
LOW	117.3 S Chemical Storage Site		n	n	<1						Evaluate using approved NA/NFA process									
LOW	169 Hydrogen Peroxide Spill		n	n	n						Evaluate using approved NA/NFA process									
LOW	190 Caustic Leak		n	n	<1						Evaluate using approved NA/NFA process									
LOW	191 Hydrogen Peroxide Leak		n	n	n						Evaluate using approved NA/NFA process									
LOW	134(N) Lithium Metal Destruction Site		<1	<1	<1						Evaluate by NA/NFA process/tie B335 D&D									
LOW	134(S) Lithium Metal Destruction Site		n	n	<1						Evaluate by NA/NFA process/tie B335 D&D									
LOW	156.1 Radioactive Site		n	n	<1						Evaluate using approved NA/NFA process									
LOW	150.6 Loading Dock		n	n	<1						Evaluate with NA/NFA/PCB Hot Spot only									
LOW	115 Original Landfill		<1	<1	<1						HHRA, 10E-4 to 10-6 Remedial Action required due to physical hazard									
LOW	196 in Old Landfill		<1	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.1 Ash Pit #1		<1	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.2 Ash Pit #2		<1	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.3 Ash Pit #3		<1	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.4 Ash Pit #4		<1	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.5 Incinerator		n	<1	<1						HHRA, 10E-4 to 10-6									
LOW	133.6 Concrete Wash Pad		n	<1	<1						HHRA, 10E-4 to 10-6									
LOW	142.1 Pond A-1		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond data									
LOW	142.2 Pond A-2		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond data									
LOW	142.3 Pond A-3		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond data									
LOW	142.5 Pond B-1		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond & sed data									
LOW	142.6 Pond B-2		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond & sed data									
LOW	142.7 Pond B-3		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond & sed data									
LOW	142.8 Pond B-4		n	<1	<1						HHRA, 10E-4 to 10-6 w/pond & sed data									
LOW	199 Offsite Land Surface		n	<1	<1						HHRA, 10E-4 to 10-6. No groundwater issues									
LOW	200 Great Western Reservoir		<1	<1	<1						HHRA, 10E-4 to 10-6, plus sediment samples									
LOW	167.2 Landfill Pond Spray Area		n	<1	<1						HHRA, 10E-4 to 10-6									
LOW	167.3 Landfill South Spray Area		n	n	<1						Focused HHRA, 10E-4 to 10-6									
LOW	111.2 Trench T-5		<1	<1	<1						Does not exceed PPRG ratio of 1									
LOW	111.8 Trench T-11		n	<1	<1						Does not exceed PPRG ratio of 1									
LOW	216.2 East Spray Field - OU 2		n*	n	<1						PPRG ratio less than 1, *2 downgrdnt wells									
LOW	216.3 East Spray Field - OU 2		n*	n	<1	0	1	1	1	1	PPRG ratio less than 1, *2 downgrdnt wells									
LOW	102 Oil Sludge Pit		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	103 Chemical Burial		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	104 Liquid Dumping		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	105.1 W Out-of-Service Fuel Tank		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	105.2 E Out-of-Service Fuel Tank		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	106 Outfall		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	107 Hillside Oil Leak		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	119.2 Solvent Spill Site		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	130 800 Area Rad Site #1		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	145 Sanitary Waste Line Leak		11	50	2	63	6	2	1	12	HHRA, less than 10-6									
LOW	142.10 Pond C-1		n	<1	<1						HHRA, less than 10-6. Includes pond & seds									
LOW	142.11 Pond C-2		n	<1	<1						HHRA, less than 10-6. Includes pond & seds									
LOW	167.1 N Landfill Spray Area		<1	2	<1	2	1	1	1	1	HHRA, less than 10-6									
LOW	165 Triangle Area		<1	<1	15	15	3	2	1	6	HHRA, less than 10-6									
LOW	141 Sludge Dispersal Area		<1	n	1	1	1	2	1	2	HHRA, less than 10-6									
LOW	156.2 Soil Disposal Area		<1	<1	<1						HHRA, less than 10-6									
LOW	Buffer Zone Pu plume area OU 2		na	na	<1						HHRA, less than 10-6 surface soil issue only									
LOW	201 Standley Lake		<1	<1	<1						Passed CDPHE screen									
LOW	202 Mower Reservoir		<1	<1	<1						Passed CDPHE screen									
LOW	209 Surface Disturbances		<1	<1	<1						Passed CDPHE screen									
LOW	166.1 Landfill Trench A		2	<1	n	2	1	1	1	1	Passed CDPHE screen									
LOW	166.2 Landfill Trench B		<1	<1	n						Passed CDPHE screen									
LOW	166.3 Landfill Trench C		<1	<1	n						Passed CDPHE screen									
LOW	F167.3 Former S. Spray Field		<1	<1	<1						Passed CDPHE screen									
LOW	142.4 Pond A-4		<1	<1	<1						Passed CDPHE screen w/ pond and sed data									
LOW	142.9 Pond B-5		<1	<1	<1						Passed CDPHE screen w/ pond and sed data									
LOW	142.12 Walnut and Indiana Pond		<1	<1	<1						Passed CDPHE screen									
LOW	216.1 East Spray Field - OU 6		n	3	<1	0	1	1	1	1	Passed CDPHE screen									
LOW	168 West Spray Field		<1	<1	<1						Passed CDPHE screen									
LOW	179 B865 Drum Storage, Rm. 145										RCRA Clean Closure CAD/ROD in Progress									
LOW	180 B883 Drum Storage, Rm. 104										RCRA Clean Closure CAD/ROD in Progress									
LOW	204 Original Uranium Chip Roaster										RCRA Clean Closure CAD/ROD in Progress									
LOW	178 B881 Drum Storage, Rm. 165										No source found-CAD/ROD in progress									
LOW	211 B881 Drum Storage #26-R211										No source found-CAD/ROD in progress									
LOW	217 B881 Cyanide Treatment - #32										No source found-CAD/ROD in progress									

n = data not available