

Rocky Flats Environmental Technology Site

Natural Resource Management Policy

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**Rocky Flats Environmental Technology Site
Natural Resource Management Policy
Outline**

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE NATURAL RESOURCE MANAGEMENT POLICY

PREAMBLE

The Natural Resources Management Policy (NRMP) establishes natural resource policies for numerous issues important to the management of the Rocky Flats Environmental Technology Site (Site) Buffer Zone. The policies set forth in the NRMP will serve to guide selection and funding of Buffer Zone management activities while the Site is being cleaned up under the Rocky Flats Cleanup Agreement (RFCA). The NRMP is designed to guide natural resource policy decisions in accordance with closure activities. The Site will review the NRMP on an annual basis and revise the document as necessary. The Site will address proposed revisions in public meetings to provide opportunities for comments.

The open space cleanup objective expressed in the RFCA Vision serves as the foundation for the resource management policies enumerated in the NRMP. This vision anticipates that the Site 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 will be restricted. DOE will manage resources during cleanup in order to preserve currently available options for Buffer Zone use, so that these options can be considered during post-closure resource management discussions. In addition, the NRMP will establish policies for addressing natural resource damage issues under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The NRMP, as an extension of the RFCA Vision, is generally intended to be consistent with the Future Site Use Working Group (FSUWG) report and the DOE Land and Facility Use Policy issued in 1994 by then Secretary of Energy Hazel O'Leary, while conforming to applicable laws, requirements, and agreements.

SECTION I: EXECUTIVE SUMMARY

Many critical issues that have not yet been resolved will affect the sequencing, timing, and duration of work on the Site. These issues include decisions regarding interim plutonium storage on-site versus off-site shipment, budget prioritization, funding availability, future policy directives and future cleanup agreements. Moreover, given the eventual time horizon associated with cleaning up and dispositioning the Site, there will be unforeseen challenges and opportunities in the future. The NRMP addresses a diverse set of concerns and pressing issues, some of which may be subject to change in the future. This is particularly likely given the length of time before the Site Record(s) of Decision, currently targeted for the year 2010.

Implementing the NRMP, the Site may only act within the bounds set by applicable state and federal laws and regulations, and within the constraints of available funding. These considerations may place limits on the Site's ability to implement some of the recommendations, or the manner in which they are implemented. Strategies and technologies for cleanup may change, creating the need to modify some of the NRMP recommendations. DOE will update this document, as necessary, based on mission requirements, Site funding levels, and input from the public, regulators, and CERCLA natural resource trustees.

SECTION II: PURPOSE AND REQUIREMENTS

A. PURPOSE

The primary purpose of the Natural Resource Management Policy is to define an environmentally sensitive management policy, providing the basis for sound and balanced resource decisions. The NRMP establishes policy for Site management of Buffer Zone operations and natural resources in a manner that maintains ecological values, and maintains compliance with existing laws, regulations, and agreements. The NRMP provides guidance for interim management of natural resources and will serve as a basis for the future development of more detailed resource management plans. The NRMP provides DOE and other interested agencies and individuals with a policy document to determine baseline activities for natural resource and Buffer Zone management associated with the annual DOE budget submittal.

The NRMP addresses a diverse set of concerns and issues, some of which may be subject to change in the future, within the bounds set by applicable state laws, federal laws, and regulations. Natural resource management for the Site is iterative in nature and inextricably tied to issues concerning all of Colorado. Development and implementation of the NRMP involves public sector and private sector stakeholders. Many Site issues have not yet been resolved, including Preble's meadow jumping mouse (PMJM) habitat preservation, vegetation management issues, watershed management issues, budget prioritization, funding availability, future policy directives, future cleanup agreements, and related private and public land use issues such as mineral extraction and zoning.

B. REQUIREMENTS

The RFCA requires the DOE to develop and implement a Sitewide Natural Resource Management Policy by 30 September 1998. This RFCA commitment for DOE accomplishment is a Tier II regulatory requirement under the RFCA for Fiscal Year 1998. The NRMP provides the necessary information to satisfy this regulatory requirement.

The following principles guide the NRMP process

- Manage Site natural resources in a manner that allows for the maintenance and, in some cases, enhancement of those resources and does not preclude future ecological, economic, or interpretive uses
- Consider surrounding land uses such as preserved open space, regional recreational needs, scenic values, and economic uses
- Guide Site operations, as necessary, to implement the policies established herein
- Implement policy guidance to assist in efforts to minimize and mitigate natural resource damages related to cleanup under the RFCA agreement and CERCLA section 107 (f) – (j).
- Comply with all applicable laws and regulations, including the Endangered Species Act (ESA)

The Site is committed to the practice of stewardship of all ecological resources to sustain the health, function, and native diversity of Site natural communities

C. POLICY ASSUMPTIONS

The RFCA Vision states DOE will clean up the Site to allow open space uses in the Buffer Zone, restricted open space or industrial uses for most of the existing Industrial Area, and other appropriate uses. The NRMP will conform to the RFCA Vision, which incorporates the following three principles.

- Achieve accelerated cleanup and closure of the Site in a safe, environmentally protective manner and in compliance with applicable state and federal environmental laws,
- Assure the Site does not pose an unacceptable risk to the citizens of Colorado or to Site workers from either contamination or an accident, and
- Allow disposition of contamination, wastes, buildings, facilities, and infrastructure from the Site consistent with community preferences and national goals

D. CORRELATION TO OTHER DOCUMENTS

The Site and various working groups have delineated policies or stated positions regarding natural resources management in many documents over the years. This is the first time the Site has attempted to draw together all of its natural resource management policies in one place. In drawing together these policies, appropriate Site documents have been reviewed to ensure consistency between the NRMP policies and previously stated policies and positions. Where it is appropriate, reference is made in the individual NRMP sections to the pertinent document(s) and some explanation is provided to demonstrate the correlation to the other document(s).

SECTION III: HISTORY AND SETTING

A. SITE MISSION

From 1952 to 1992, the mission of the Rocky Flats Plant (Plant) was to produce nuclear weapons components from plutonium, uranium, beryllium and stainless steel. Specifically, the Plant produced plutonium triggers for nuclear warheads and recycled old triggers. Dow Chemical Corporation was the operating contractor from 1953 until 1975 and Rockwell International Corporation operated the plant from 1975 until 1990. Both contractors operated under a Management and Operating type contract under which performance was graded on criteria established by the DOE. In 1990, EG&G, Inc. assumed operation of the Plant after the contract with Rockwell was terminated. In 1992, the weapons production mission was curtailed and the mission transitioned to material stabilization and cleanup with the end of the Cold War.

In 1995, a new contract was established with Kaiser-Hill, LLC for the cleanup and closure of the Site, which will continue until June 2000. The contract with Kaiser-Hill is a performance based contract where the DOE defines specific performance targets, as well as the terms and conditions that apply to the completion of the work, that must be met by Kaiser-Hill in order to earn fee.

Today the Site mission is to manage waste and materials, clean up and convert the Site to beneficial use in a manner that is safe, environmentally and socially responsible, physically secure and cost-effective.

B. SITE LOCATION

The Site is in Jefferson County, Colorado, and 16 miles northwest of downtown Denver, Colorado. Adjacent to the foothills of the Rocky Mountains, the 6266-acre Site is part of the large and rapidly growing Denver metropolitan area. Approximately 2.1 million people now live within a 50-mile radius of the Site. Growth trends project a 20 percent population increase within the next 20 years.

The Site is west of Interstate 25 and north of Interstate 70, the major north-south and east-west connectors across Colorado. Roads bordering the Site include State Highway 93 to the west, State Highway 128 to the north, Indiana Street to the east, and State Highway 72 to the south. No roads exist along the immediate southern boundary, and no public access roads traverse the Site. The Site is about 45 miles from Denver International Airport and about five miles from the Jefferson County Airport, which serves commercial aircraft.

Map Regional Context (Attachment E-1)

C. SITE LAYOUT

The Site is situated on approximately 6,266 acres that are divided into three geographic areas, each fenced and protected by security personnel

1. Industrial Area

Encompassing 396 acres, the industrial area is located in the center of the Site. The industrial area has more than 400 structures including manufacturing, chemical processing, laboratory and support facilities. The acreage of the industrial area includes the protected area

2. Protected Area

Also located in the center of the Site, the protected area consists of 96-acres in the northern portion of the industrial area. The protected area contains the complex of former plutonium production or support buildings. Heavily fenced and guarded, this area is subject to many stringent safety requirements, intense security and other protection measures to ensure national health and safety

3. Buffer Zone

The 5,870-acre Buffer Zone surrounds the industrial area and protects the Site from potential encroachment. The Buffer Zone also maintains physical security. Largely retained as open space, the Buffer Zone contains very few facilities, except for support facilities such as retention ponds, monitoring stations, sanitary landfills and dirt roads used for access and fire breaks. The entire Buffer Zone is fenced and access is regulated at the east and west entry gates

Maps Site Layout (Attachment E-2)

D. SURROUNDING LAND USES

The Site is located near the cities of Arvada, Westminster, Broomfield, Golden, Superior, and Boulder, as well as unincorporated portions of Jefferson and Boulder Counties. Land around the Site primarily consists of ranchland, preserved open space, mining areas, and low-density residential areas. However, this rural pattern is beginning to change due to spreading development.

The towns of Superior and Broomfield have already experienced extensive development north and northeast of the Site. There is potential for similar development south and west of the Site within the Jefferson Center, an approved 18,000-acre industrial, office, commercial and residential community. State-owned lands southwest of the Site are used for grazing, mining, and potential environmental purposes. Along Highway 93, an area of land approximately 1,200 feet wide adjacent to the Site's western boundary is available for eventual development, open space or highway right of way.

The 280-acre DOE National Renewable Energy Laboratory Wind Site is located in the northwest corner of the Buffer Zone on lands transferred from DOE/RFFO. Preserved open space is the primary existing and proposed use of the lands north and east of the Site. Privately owned lands and subsurface minerals in the Buffer Zone and some adjacent lands primarily to the west of the Site have been permitted by the State and County for mineral extraction (mining).

There are two reservoirs just east and downstream from the Site, Standley Lake and Great Western Reservoir. Standley Lake serves as the drinking water supply for the Cities of Westminster, Northglenn and Thornton. Great Western Reservoir is located in the City of Broomfield. Although Standley Lake is the only reservoir that serves as a drinking water supply, both reservoirs are used for irrigation, recreation, and wildlife enhancement and preservation. To protect water quality at Standley Lake, a reservoir was constructed downstream on Woman Creek between the Site and Standley Lake. A diversion ditch routes Walnut Creek waters around Great Western Reservoir, which is no longer used as a drinking water supply. The Kinnear Ditch Pipeline was constructed to bring Coal Creek Water to Standley Lake and to the nearby wetlands, diverting this water from the Woman Creek drainage.

SECTION IV: EXISTING SITE PHYSICAL CONDITIONS

A. ECOLOGICAL AND NATURAL RESOURCES

The Site provides a unique refuge along the central Front Range for a large number of bird and mammal species. The presence of this refuge is due in large part to more than two decades of protection from grazing, development, and other disturbances. The area enclosed by the 1950's Buffer Zone has experienced this singular habitat protection for over 40 years. The exclusion of grazing and development has allowed the native prairie/montane ecotonal area in the Buffer Zone to rebound from its previously grazed state.

By the end of 1997, 249 terrestrial vertebrate species had been verified as using Site ecosystems (1997 Annual Wildlife Survey Report). This is an impressive diversity when compared to the 322 terrestrial vertebrate species found at Rocky Mountain National Park, an area 98% larger than the Site. Site diversity includes 188 species of birds (19 are raptors), 3 big game species, 11 species of carnivores, 3 rabbits, 6 large rodents, 22 small mammals, 9 reptiles, and 7 amphibians recorded since 1991. No definitive inventory of arthropods and other invertebrates has been made. This high species diversity and continued use of the Site by numerous special-concern species verifies habitat quality for these species has remained very acceptable and ecosystem functions are being maintained (Appendix C, Species Listing). Additionally, the PMJM, a species listed as threatened under the Endangered Species Act, is found in riparian habitat at the Site.

Although they are rarely observed, threatened and endangered species such as the bald eagle and peregrine falcon are periodically recorded at the Site. Other rare species include the eastern short horned lizard, a year-round resident, and the loggerhead shrike and the western burrowing owl, both of which are recorded occasionally

Colorado Species of Special Concern that use the Site include the northern leopard frog and the American white pelican. "Watch-listed", defined by the Audobon Society, species that use the Site seasonally are raptors such as the long-eared owl, the northern harrier, the Cooper's hawk, the prairie falcon, and the golden eagle. Other watch-listed species that use the Site seasonally are songbirds such as the lark bunting, chestnut-sided warbler, and Virginia's warbler, and water birds including the black-crowned night heron and white-faced ibis. The Swainson's hawk nests in the Great Plains riparian woodland, and the grasshopper sparrow breeds in the xeric tallgrass prairie and mesic grasslands.

The Colorado Natural Heritage Program (CNHP) assessed the Buffer Zone for its ecological value. The CNHP is a research entity of the Nature Conservancy housed at Colorado State University's College of Natural Resources. Natural Heritage programs across the country are part of an international network of conservation data centers. The CNHP study concluded the Site contains highly significant natural elements important for the protection of Colorado's natural diversity and encourages DOE to take actions to protect and appropriately manage the Site.

The CNHP classifies the xeric tallgrass prairie plant community at the Site as very rare. Most of the remaining xeric tallgrass prairie in Colorado is found in Boulder and Jefferson counties in small, dispersed parcels. The CNHP report on Site natural heritage resources identifies the Site macrosite as the largest known remnant of xeric tallgrass prairie in Colorado, and probably the largest remaining parcel in all of North America. Less than 20 occurrences of the xeric tallgrass prairie are known worldwide. Approximately 1,800 acres of this xeric tallgrass prairie unit is within Site boundaries.

The Great Plains riparian community, identified by CNHP as Great Plains Riparian Woodland, is classified as rare and declining. Examples of this community are found in the Rock Creek, Walnut Creek, Woman Creek, and Smart Ditch drainages. Cottonwood trees and willows predominate in this community. Another unusual shrub community is the Riparian Shrubland often found in association with the Great Plains Riparian Woodland community at the Site. These communities are dominated by leadplant and provide important habitat for many of the bird and mammal species found here, including the Preble's meadow jumping mouse. These habitats support a prey base for many Site birds of prey, such as prairie falcons, great horned owls, screech owls, and red-tailed hawks.

Wetlands on the Site are not rare or unique, but the large amount of seep/spring related wetlands in the Buffer Zone are rare along the Front Range of Colorado. These wetlands serve valuable and important functions, as do wetlands everywhere. They perform the role of a water purification system by retaining nutrients, sediments, and metals. They also provide forage, cover, and nesting habitat for wildlife, which is very important in maintaining the Site wildlife values.

The Tall Upland Shrubland community is found on north-facing slopes primarily in the Rock Creek drainage. This community commonly occurs just above wetlands and seeps. The dominant tall shrubs are Hawthorne and choke cherry, which are associated with other shrubs and plants common in the foothills to the west of the Site.

This community was identified by the CNHP as a potentially unique shrubland community, possibly not occurring anywhere else. This community is used by many animals and birds throughout the year for cover and is used during the spring by mule deer as fawning areas. Several rare bird species also inhabit this community during the breeding season. It is within this community that the globally rare hops blue butterfly has been collected.

Although some of the plant communities, such as the Mesic Mixed Grasslands of the eastern portion of the Site, are not rare, they add important buffer areas and habitat elements to the Site ecosystem. Large tracts of grasslands provide essential habitat to prairie species. Mule deer are very dependent on these grasslands at certain times of the year, many raptor species depend on open grasslands for foraging areas, several species of prairie birds rely on these grasslands as nesting and foraging habitat, and several species of reptiles require this habitat as well.

B. CULTURAL RESOURCES

Two archeological surveys were conducted at the Site, in 1989 and in 1991. While the surveys identified points of local interest in the Buffer Zone, such as Lindsay Ranch and an apple orchard, no sites or artifacts eligible for listing on the National Register of Historic Places were found in the Buffer Zone. The State Historic Preservation Office (SHPO) has agreed with these conclusions.

A survey of the industrial area was prepared in 1995. The survey report concludes several of the facilities in the industrial area are of historic importance because of the role they played in the Site's contribution to the Cold War. Sixty-four (64) facilities in the industrial area have been included in a historic district on the National Register of Historic Places. A Programmatic Agreement regarding the cleanup and closure activities at the Site between the Advisory Council on Historic Preservation, the SHPO, and DOE governs how Site historic information is being recorded.

The Site has prepared a Cultural Resource Management Plan (CRMP) that incorporates the information from both the archeological and industrial area surveys. The CRMP establishes guidelines regarding how to manage Site cultural resources

C. HEALTH AND SAFETY CONSIDERATIONS

The federal and state laws that govern environmental clean up and waste management (CERCLA, RCRA and CHWA) share the common goal of protecting human health and the environment. The ultimate use of the Site is a major determinant in setting clean up levels to achieve this goal. Land use scenarios establish an important part of the conceptual framework for identifying potential exposure pathways and estimating contaminant uptake by human and ecological receptors at a Site.

Therefore, the concentration and locations of hazardous chemicals released to the environment by Site activities must be known to estimate potential exposure levels under different land use scenarios. For RFCA to allow accelerated cleanup to progress, it was agreed that the Site will be cleaned up to levels that would allow open space use in the Buffer Zone and industrial or commercial use in the industrial area. However, specific future land use has not yet been determined.

D. RADIATION AND CONTAMINATION

Characteristic of this part of Colorado, the Site has moderate levels of radionuclides due to naturally occurring uranium in the Colorado mountains and due to fallout from past atmospheric testing of nuclear weapons. Two fires in the industrial area, as well as dispersal from leaking drums stored on the 903 pad, have deposited radionuclides in portions of the Buffer Zone. In general, most of the Buffer Zone is neither contaminated with radionuclides or hazardous wastes. The Site has several localized areas of radionuclide contamination near the old landfill area, the 903 pad area, and in impoundments B-1 and C-2.

E. REAL PROPERTY RIGHTS AND USES

When the government bought the Site, the purchases did not include subsurface mineral rights. About 94 percent of Site mineral rights are held by a number of private parties. Mining has occurred on or adjacent to the Site for the last 60 years. Mineral extraction has included oil, coal, iron ore, sand, clay and gravel.

Mining for sand, gravel and clay is ongoing and proposed expansions have been permitted by the State of Colorado and Jefferson County in the northwest corner of the Site Buffer Zone and in a section of State of Colorado land located immediately west of the southwest corner of the Site. As the surface owner, the Site continues to adhere to Colorado law which provides that a subsurface mineral owner may exercise its rights to extract subsurface minerals, while the surface owner retains reasonable use of the land surface.

SECTION V: SITE POLICIES

A. WATER RESOURCES AND MANAGEMENT

The Site water resources management policy is described under the subsections below. 1) surface water and pond management, 2) wetlands management, 3) watershed management, and 4) groundwater management. Emerging policy questions are identified at the end of the water resources and management section

Current Condition

The overall goal of water management at RFETS, as stated in the Integrated Water Management Plan (IWMP), is to protect human health and ecological resources through the implementation of a variety of management actions. All of these actions are aimed primarily at managing surface water quality to meet regulatory standards (the Clean Water Act, particularly the Site's National Pollution Discharge Elimination System (NPDES) Permit, and RFCA), although there are additional objectives, such as ecological concerns and dam safety. The IWMP provides a conceptual model for water management that identifies overall strategy and its key components as well as current programs, management plans and unresolved issues, and is updated annually.

The RFCA required the development of this IWMP by a surface water and groundwater working group which included regulators and other external stakeholders, for the purpose of developing consensus recommendations for decision-makers on actions related to water quality at, or downstream of the Site. The IWMP is intended to support the RFCA vision that the quality of water supplies of the communities surrounding the Site will be protected, and the water leaving the Site after cleanup activities have been completed will be acceptable for any use. An integral part of the water management program is communication with agencies and downstream water users on issues relating to onsite water management. This NRMP incorporates the vision, process and substance of the IWMP

The IWMP identifies the key components of Site water management as the following

- manage groundwater and soils to protect surface water,
- manage groundwater and surface water to protect ecological resources,
- manage site detention ponds to protect dam integrity and water quality,
- manage incidental waters (relating to spill incidents) to protect Waste Water Treatment Plant (WWTP) and surface water,
- manage process wastewater treatment to be protective of surface water,
- manage internal waste streams to protect WWTP and surface water,
- practice spill control Best Management Practices, stormwater pollution prevention, and maintain monitoring to protect surface water,
- implement accelerated cleanup actions and watershed improvements to control contamination sources,

- manage sanitary wastewater treatment/disposition to be protective of surface water, and
- implement monitoring and evaluations for surface water and groundwater exceedences of RFCA Action Level Framework (ALF) values

The IWMP provides a "big picture" strategy, which outlines and synthesizes Site ongoing water management activities. However, for implementing its water management programs, the Site also relies on additional more detailed water management activity guidance and direction provided by the Pond Operations Plan, Action Level Management of Site Ponds, the Site NPDES Permit, the Federal Facilities Compliance Act (FFCA) supplemental conditions, and the annually updated Sitewide Integrated Monitoring Plan. The IWMP is the implementing framework for the Integrated Monitoring Program, also required under the RFCA, which is tasked with collecting and reporting the data required ensuring the protection of human health and the environment.

One component of the IWMP that is particularly relevant to the NRMP is the management of groundwater and surface water to protect ecological resources. The Ecological Resource Management Plan (ERMP) for the Site provides a plan of action for conserving the ecological resources within the Site, which has numerous implications and interfaces with water resource management. The ERMP provides methodologies and procedures for the Site to evaluate potential water management strategies and to revise activities to minimize possible ecological impacts. The procedures include an ongoing ecological monitoring program, possible rehabilitation actions to restore disturbed areas, and protection strategies to assure conservation of the ecological resources. Additional actions may be recommended for protection of specific ecological resources after review of a proposed water management action.

Policy

The Site will continue to implement the IWMP, work with stakeholders to resolve water management issues as they arise, and integrate water management issues with other ecological and cleanup issues at the Site.

The subsections below are organized to highlight and discuss in greater detail those components of water resource management that are particularly relevant to natural resource management at the Site.

Map IWMP Conceptual Model (Attachment E-3)

1. Surface Water and Pond Management

Current Condition

Surface water flows from the Site via five ephemeral streams which pass through or are adjacent to the Site. Three of these streams, North Walnut Creek, South Walnut Creek, and Woman Creek, contain detention ponds described below.

- North and South Walnut Creek join to form Walnut Creek, which naturally would flow into Great Western Reservoir. However, water now is rerouted through the Broomfield Diversion Ditch around the reservoir and into Big Dry Creek, and flows to the South Platte River
- Woman Creek flows eastward towards Standley Lake. However, water is collected in the Woman Creek Reservoir and rerouted to Walnut Creek below Great Western Reservoir, or to Mower Reservoir, located between Standley Lake and Great Western Reservoir

There are fourteen detention ponds located in the Site Buffer Zone, constructed to detain water to assist with the management of spills and storm water runoff. The ponds are arranged in four series (A, B, C, and D series). Only the eleven A, B, and C-series ponds are actively managed by the Site.

The ponds are grouped in series based on the drainage area location

- A-series (Ponds A-1, A-2, A-3, and A-4) in the North Walnut Creek Drainage
- B-series (Ponds B-1, B-2, B-3, B-4, and B-5) in the South Walnut Creek Drainage
- C-series (Ponds C-1 and C-2) in the Woman Creek Drainage
- D-series (Ponds D-1 and D-2) in the Smart Ditch Drainage
- Landfill Pond located immediately east of the Site sanitary landfill

Two man-made diversion channels, the West and South Interceptor Ditches, are used to divert runoff at the Site. The West Interceptor Ditch diverts runoff from the North Walnut Creek headwaters north of the Industrial Area to Walnut Creek west of Indiana Street. The South Interceptor Ditch diverts runoff from the southern part of the Industrial Area away from Woman Creek and into Pond C-2.

Raw water is purchased from the Denver Water Board and stored in the raw water pond located on the west side of the Site. Water from the raw water pond is split into two systems: the Process side and the Potable side. The Process side formerly included anything that was part of the old plant process buildings and laboratories. This side is now the focus of Deactivation & Decommissioning (D&D) and waste management activities. Process side wastewater's go to B374 for neutralization, treatment, and evaporation. The Potable side raw waters are treated for domestic uses in a separate treatment system (B424). Domestic wastewater's are treated in yet a third system (B995). Treated sanitary wastewater from B995 is currently discharged to the B-series ponds. All discharges from these sources are regulated under the Site NPDES Permit.

In 1997, the Site finished meeting requirements under the Clean Water Act's (CWA) Federal Facilities Compliance Agreement. These requirements included installing influent and effluent tanks at the Wastewater Treatment Plant, conducting a Drain Identification Study, and implementing an above ground tanks inspection and maintenance program.

Under routine conditions, water is isolated in Ponds A4 and C2, with pre-discharge samples collected and analyzed before discharge. The pre-discharge sample analyses take two weeks to complete. Water discharged from the Site terminal pond passes through two RFCA "points of compliance" before leaving the Site boundaries. A replacement for the Site's 1984 CWA NPDES Permit will soon be issued by EPA Region VIII.

The Broomfield Diversion Ditch routes water leaving the Site via Walnut Creek around Great Western Reservoir. Woman Creek Reservoir was constructed with DOE funding to protect Standley Lake's water quality during the Site deactivation and decommissioning closure activities

During major storm events, a high volume of runoff is delivered to the A and B-series ponds from the large impervious areas in the industrial area. Storm water added to treated effluent discharges in the B-series ponds could create dam safety concerns. To address dam safety concerns, the Colorado State Engineer's Office has required the Site to upgrade the outlet works of the terminal ponds (A4, B5, and C2). The upgrades have been completed for Dams A4 and B5, and Dam C2 is required to be completed by March 1, 2000.

The ability to use the ponds for spill control and storm water management (their intended purpose) is enhanced by maintaining lower water levels and increased capacity in the ponds. Maintaining lower water levels in the ponds and decreasing inputs to the pond system also enhances Dam safety. However, continuous releases from the ponds may be important to downstream habitats and aquatic communities. Aquatic and wildlife habitats below the terminal ponds may be enhanced by direct discharges from Ponds A4 and B5. Water management regimes that optimize spill control and storm water management through batch releases may be detrimental to downstream aquatic communities.

In the future, as the Site approaches closure, the number of workers and standing buildings on-Site will decrease, significantly diminishing the amount of water needed for Site operations. As a result, there will be diminished wastewater flows to the pond system and Walnut Creek.

The Site transition plan for modifying operations and management of the on-site surface water detention ponds is documented in the Pond Operations Plan (POP). The modified operation phases will result in ecological benefits, increased storm water detention capacity, dam safety enhancements, and more efficient use of Site funds while maintaining water quality.

The Site is preparing a Biological Evaluation to examine potential impacts of implementing a POP on threatened and endangered species in the vicinity of the Site and in the lower Platte River drainage. Preliminary conclusions are that proposed pond operations have no adverse impact on species or habitat.

Map Pond and Stream Network (Attachment E-4)

Policy

The Site monitors Surface water to assure compliance with RFCA, the CWA, water quality standards, and other applicable regulations. The Site also provides an opportunity for the State to collect pre-discharge samples before releases from the terminal ponds, and to communicate these activities to local municipalities and stakeholders.

To address the above concerns and others, the Site will work towards developing a long-term water-use strategy that includes (1) modifying the current pond operation system to a more passive and natural flow system that is protective of both human health and ecosystems, (2) protecting surface water and ecological resources in an integrated manner as key elements of soil and groundwater cleanup.

2. Wetlands Management

Current Condition:

The 6,266-acre Site has approximately 1,100 wetlands covering approximately 191 acres that were identified and mapped in a 1994 Sitewide wetland delineation performed by the U.S. Army Corps of Engineers Omaha District. These wetlands include riparian (streamside) habitat, ponds, seeps, and hillside wetlands. Riparian areas are well known for the diversity of plant and animal communities they support. The Site Great Plains Riparian Woodland complex encompasses three vegetation community types, and provides important habitat for numerous songbird species, deer, and raptors, in addition to supporting the greatest number of PMJM at the Site. The sustained quantity and timing of streamflows is required to support the riparian communities.

The Site goal for wetlands mitigation, identified in the Memorandum of Agreement for the Administration of a Wetland Bank at the Site (MOA) between DOE RFFO, EPA, the Corps, and the U.S. Fish and Wildlife Service (FWS), is to achieve no overall net loss of wetland functions and values [e.g., wildlife habitat, critical habitat for endangered species, flood control, water quality improvement, and groundwater recharge], resulting from Site activities. This MOA describes how the Site will account for wetland impacts for a portion of potentially impacted wetlands using a mitigation bank established and maintained by DOE, RFFO.

The wetland MOA specifies that compensatory mitigation projects should be located where there are appropriate physical, hydrological, chemical, and biological characteristics to establish and maintain wetland functions and values in advance of wetland disturbance. The MOA also establishes the administrative procedure for using the acreage established by a wetland bank to ensure the Site wetland functions and values are maintained.

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Two wetland mitigation projects have been established to date to compensate for two distinct wetland impact categories, "general impacts" and "flume impacts". The project intended to be used for mitigation of approximately 3.25 acres of "general impacts", is an approximately 7.5 acre site adjacent to the south side of the Standley Lake Protection Project (SLPP), sharing the southern tributary of the middle branch of Upper Big Dry Creek as a boundary. This project was initiated in 1996. The second project, used for mitigation of 0.03 acres of "flume impacts", is a 0.25-acre site adjacent to the north side of the SLPP project, sharing the northern tributary of the middle branch of the Upper Big Dry Creek as a boundary.

Wetlands are protected under Section 404 of the CWA, 10 CFR, Part 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements; Executive Order 11990, Protection of Wetlands, and Executive Order 11988, Floodplain Management. The Site has a Site-Wide Wetland Comprehensive Plan (February 1997) and a Wetlands Identification and Protection Procedure (January 3, 1997) that provides instructions for identifying jurisdictional wetlands at the Site and ensuring the protection of these wetlands.

Rock Creek and the Antelope Springs/Apple Orchard Springs complexes have been identified as high quality wetlands. The primary management concerns are sustaining species diversity, genetic diversity, cover, productivity of the native plant species, and preservation of the animal populations using these areas.

Policy:

The Site policy is to achieve a goal of no net loss of wetland functional values during RFETS closure. Off-site locations (such as near Standley Lake) may be used to accomplish this goal. The policy, based on federal requirements, is first, to avoid impacts if possible, and second, to mitigate unavoidable impacts.

The Site will apply an assessment methodology to both its potentially impacted wetlands and its mitigation wetlands that will help provide a basis for implementing the policy goal of no net loss of wetland functional values. The Site will also develop and implement option(s) acceptable to the regulators to mitigate additional anticipated unavoidable wetland impacts.

MAP. Site Wetlands (Attachment E-5)

3. Watershed Management

Current Condition

The Industrial Area of the Site is located between two stream cut valleys: North Walnut Creek and Woman Creek. Streamflow in these intermittent creeks is a combination of precipitation and discharge of groundwater. South Walnut Creek joins North Walnut Creek before draining into the Bromfield Diversion Ditch and flowing around Great Western Reservoir.

Woman Creek, in the southern portion of the Site, flows in an easterly direction into Woman Creek Reservoir and is pumped around Standley Lake, the raw water supply for the cities of Westminster, Thornton and Northglenn. Surface runoff from the northern portion of Industrial Area is retained in on-Site ponds on Walnut and Woman Creeks and released offsite pursuant to Clean Water Act and RFCA regulatory requirements and limits. Rock Creek, an unimpacted drainage in the northern part of the Buffer Zone, flows into Coal Creek offsite, which eventually drains to the South Platte. Walnut Creek and Woman Creek are tributaries to Big Dry Creek, which also flows into the South Platte River.

DOE funded two major construction projects (Standley Lake Protection Project and the Great Western Reservoir Replacement Project) to prevent Site water from reaching community water supplies. The Standley Lake Protection Project (SLPP) and Great Western Reservoir Replacement Project were completed in 1996/97. These Projects protect the potable water supplies of the cities of Westminster, Thornton, Broomfield, and Northglenn.

Upper Church Ditch, McKay Ditch, and Smart Ditch also convey water (non-Federal irrigation/ditch rights) across portions of the Site. The privately owned Mower Ditch was constructed to transport water from Woman Creek to the City of Westminster owned Mower Reservoir, located east of Indiana Street. The Mower Ditch diversion structure was repaired by DOE in 1997 to prevent water from being unintentionally discharged off-Site via the ditch. Water to Mower Reservoir is to be supplied from Woman Creek Reservoir by the City of Westminster as part of the SLPP.

Although geographically, the Site lies at the head of the Big Dry Creek Basin, functionally, the Site and downstream communities have focused on limiting, to the extent possible, the natural flow of surface water from the Site. Examples include past spray irrigation practices, the "Zero Discharge goal" and the continuing detention of treated sanitary effluent and stormwater pending demonstration of acceptable water quality. The Site is now working collaboratively with the Cities of Broomfield, Westminster, Northglenn, and Thornton to manage the Big Dry Creek drainage. In 1998 the Site entered into a formal partnership with these Cities to protect the water quality of Big Dry Creek.

In recognition of Walnut's Creek ecological importance as the headwaters of the Big Dry Creek Watershed, the Site is resuming aquatic sampling and monitoring of Walnut Creek to its confluence with Big Dry Creek in collaboration with the Big Dry Creek Partnership to assure Site compliance with the CWA. The Big Dry Creek Partnership is also expanding to include more stakeholders in the Basin in this collaborative watershed management process. The Denver Regional Council of Governments has now recognized the Big Dry Creek Watershed Association as a district watershed in the Regional Clean Water Plan. The Site also monitors discharges in accordance with RFCA.

Map Creek and Ditch Network (Attachment E-4)

Policy:

The Site will expand its community-based, watershed approach to biological and water quality monitoring and protection activities assuring CWA compliance, including participating in the development and implementation of the Total Maximum Daily Loads program. The Site will continue to support the Big Dry Creek Partnership and work with participating cities to coordinate water management activities addressing key concerns in the Big Dry Creek basin. The Site will protect the quality of surface water leaving the Site so downstream water quality will meet standards for aquatic life, recreation, and agricultural uses during active remediation and any uses following completion of active remediation.

Current water management practices have been necessary to protect human health and reassure downstream communities, but they may negatively impact the ecology of the basin, and are inconsistent with the ultimate Vision for the Site, as outlined in RFCA. As the Site moves towards closure, the focus will be to re-integrate the headwaters of Big Dry Creek with the rest of the watershed by modifying water management to allow a more passive natural flow system.

Two important near-term watershed management activities identified in the 1997 IWMP are 1) managing groundwater to protect surface water; and 2) managing groundwater and surface water to protect ecological resources. Achieving these objectives entails characterization of the current water regime (both surface water and ground water); estimation of stream flows and the capability of these flows to sustain wetlands and critical habitats; and the communication of this information to stakeholders.

Watershed management activities will continue to be consistent with applicable laws and regulations and will support the Clean Water Initiatives and Clean Water Action Plan led by Vice President Gore. The Site will maintain and participate in long-term partnerships between local governments, DOE, Environmental Protection Agency (EPA), Colorado Department of Public Health and Environment (CDPHE), and the Site contractor to establish an iterative and responsive process for interagency water management planning at and downstream from the Site.

4. Groundwater Management:

Current Condition

Groundwater at the Site, which is contaminated (with low levels of organic solvents and radionuclides) or could become contaminated, is relatively small in volume and slow to move, hence slow to move off the Site. The CDPHE and EPA have agreed that contaminated groundwater should be cleaned up only in order to protect surface water and other ecological resources. There are several sources of contamination with associated contaminated groundwater plumes, some of which will daylight to surface water if left uncontrolled.

There are a number of small near-surface groundwater reservoirs, which feed important ecological features, such as upland wetlands. Upland wetlands include primarily wet meadow/marsh ecotone and the tall and short marshes.

Policy

Contaminated groundwater plumes and associated sources of contamination will be remediated or otherwise managed to prevent adverse effects on surface water or ecological resources. Groundwater at the Site is not and will not be used for consumptive purposes, and will not be protected for those uses. Discussions with the FWS may impact Site management of groundwater resources, if groundwater management affects significant ecological resources, such as PMJM habitat.

Emerging Policy Questions: (Water Resources and Management)

Major unresolved issues and numerous sub-issues have been identified in the 1997 IWMP, Groundwater Integrated Monitoring Plan (IMP), RFCA Quarterly Groundwater Reports, and the Quarterly State Exchange of Environmental Monitoring Data Meeting. These issues are being, or will be, addressed through several mechanisms which involve ongoing discussions with numerous stakeholders, including the IWMP and IMP (both of which are updated annually) and their associated work groups, ongoing consultation with the FWS, and discussions with other stakeholder groups. The major water resources and management policy issue areas are identified as follows:

- 1 **Pond Operations:** How long should the Site continue using batch and release discharge protocols for Site pond releases? When should the Site initiate transition to controlled detention; how exactly should the controlled detention operations be designed and managed?
- 2 **McKay Ditch extension:** How long will Broomfield use a McKay Ditch Extension, and under what conditions will they begin routing water down Walnut Creek? (See Surface Water section for further detail)
- 3 **Understanding of actinide fate and transport and incorporation of findings of Actinide Migration Studies into water management activities:** How should the findings of the studies be incorporated into water management?

- 4 **Natural resource sustainability and long-term stewardship:** How can the sustainability of natural resources, as well as continued compliance with both onsite and offsite standards, be ensured? For example:
- For riparian and wetland areas, what is the required quantity, quality, and timing of water flows? Is further research and characterization of the water regime (both surface water and ground water) and ecological requirements necessary to 1) establish the existing baseline, 2) evaluate potential impacts of anticipated changes in site management due to D&D and other closure activities, and 3) develop approaches to sustain riparian and wetlands areas on the Site?
 - Do water rights need to be secured e.g. for Rock Creek, Rocky Flats Lake, or other areas, so natural resources of the Site can be sustained and preserved, and, if so, what is the best way to do so?
 - How can passive collection and treatment systems be designed and constructed to minimize impact to habitat and hydrologic systems?
 - How will Volatile organic carbon (VOC) plumes be managed over the long-term and post-closure?
- 5 **Timeframe and impacts of reduced water usage as the Site downsizes**
For example
- When should the Site stop using the current Sanitary Wastewater Treatment Plant (Building 995) and convert to other treatment/shipment options?
- 6 **New NPDES Permit** A number of new policy issues affecting water management will arise when the new NPDES permit is finalized, the exact nature of these issues will depend upon the outcome of current NPDES negotiations
- 7 **Wetlands assessment and management** Does a different assessment methodology need to be applied to help form the basis for implementing the established policy goal of no net loss of functional values, as part of the Site's Wetlands Management Program?
- 8 **Integrated management** Should water and ecological policy and management be better integrated, e.g., including via increased inter-program communication, to better achieve the IWMP and NRMP goal of managing groundwater and surface water to protect ecological resources?

B. AIR MONITORING MANAGEMENT

Current Condition

Site air monitoring activities assist in protecting the public and the environment by detecting and tracking any impact of Site operations on air quality at and near the Site, and characterizing any airborne materials that may be introduced and the meteorological conditions that influence their transport and dispersion

Data are used to plan, implement, and assess the effects of Site activities, including operations, construction, and Decommissioning, to maintain emergency preparedness; and to demonstrate compliance with relevant regulations

1. Ambient Air Monitoring:

The Site monitors ambient air quality both on- and off-Site, while CDPHE monitoring stations are located on-Site and at the Site perimeter. The purpose of these monitoring stations is to characterize any Site related airborne emissions. In addition, five monitoring stations are operated independently by community members for Arvada, Westminster, Broomfield, and Northglenn (the Community Radiation Program, or ComRad) to monitor airborne actinide concentrations. This does not include a sampling regime that differentiates fugitive dust from mining operations and Site activities.

2. Effluent Monitoring:

Air emissions (effluents) from all Site facilities that contain or handle radioactive materials are monitored continuously, to verify the effectiveness of radiation control mechanisms. Emissions data verify DOE efforts to keep radioactive emissions as low as reasonably achievable (ALARA). The ALARA principles state that emissions must be kept as low as reasonably possible, rather than simply demonstrating compliance with regulatory standards.

3. Meteorological Monitoring:

Meteorological conditions are monitored continuously to generate data that can be input into air dispersion models that predict the transport of airborne emissions. Model predictions are used in evaluating Site operations and D&D projects, and for emergency preparedness.

Policy

Ambient air monitoring and effluent monitoring are done to satisfy requirements both of DOE orders and of the National Emission Standards for Emissions of Radionuclides other than Radon from DOE Facilities (Rad-NESHAP).

Additional, independent air monitoring is performed by CDPHE and ComRad. Project specific air monitoring may be performed for environmental restoration and building decommissioning projects. The requirements for individual projects will be determined in individual RFCA decision documents, which will be subject to public review and regulatory approval.

Emerging Policy Questions: None at this time

C. THREATENED & ENDANGERED SPECIES/SPECIES OF SPECIAL CONCERN

Current Condition:

The Site, due to its geographic position between the Great Plains and the Front Range of the Rocky Mountains, includes a great diversity of terrain and provides a wide variety of wildlife habitats. The wide range of habitats provides year-round and seasonal habitat for a large number of wildlife and plant species, including threatened, endangered, and other special-concern species. To facilitate monitoring the status of Federal and State species of concern, Site ecologists maintain a list of such species that have the potential to occur at the Site. The Ecological Resource Management Plan for the Site identifies Site management concerns, monitoring approach, and management strategies for threatened and endangered species. The Site has conducted surveys for the Ute Ladies'-tresses orchid and the Colorado Butterfly Plant. Neither of these endangered plants has been found on Site. Monitoring data are reported in the Annual Wildlife Survey Report for the Site.

A Site procedure, Identification and Protection of Threatened, Endangered, and Special-Concern Species (T&E Procedure), ensures that all construction and other work activities are evaluated for potential to impact such species. This procedure provides instructions for conducting Site-specific surveys, contacting appropriate regulatory agencies should a protected species be found at the Site, and developing species-specific protection plans. Implementation of this T&E Procedure allows Site ecologists to evaluate new projects during the planning phase, and to help design personnel develop mitigation strategies that minimize potential impacts to sensitive species.

The Site has prepared and implemented a Protection Policy for the PMJM, which is listed as a threatened species under the ESA. The Preble's Protection Policy (Appendix D) and other protection policies, plans and procedures will be evaluated to determine whether implementation may need to be improved, and whether modifications are needed in light of new information, developments, and related conservation efforts, including off-Site studies and identified data gaps. These strategies and their implementation will be coordinated with other Site resource management efforts, including the IWMP.

Policy

The Site will consider re-introduction of special concern species on a species-by-species basis, but under no circumstances will the Site accept introductions that 1) interfere with cleanup or closure activities or 2) interfere with the overall policy of not limiting future site uses.

Special concern species re-introduction criteria are as follows

- a Wildlife reintroduced shall be indigenous to the general area
- b The reintroduction shall not negatively impact Site clean up and remediation
- c Reintroduction shall not adversely impact existing wildlife populations or the habitats upon which they depend
- d The reintroduction shall benefit the Site and shall not impact or preclude future land use

The Site will continue to consult/confer with the U S FWS under Section 7 of the ESA in situations involving threatened or endangered species. When a threatened or endangered species is identified or becomes resident at the Site, a species-specific protection plan is developed, as called for in the T&E Procedure

MAP PMJM Protective Areas (Attachment E-6)

Emerging Policy Questions

- 1 Do water rights and minimum in-stream flows need to be secured by a Federal or State entity to provide long-term protection for the PMJM and its habitat?

D. REAL PROPERTY RIGHTS AND USES

Current Condition:

1. Real Property Resources and Rights:

Current Site real property holdings include 6,266 acres, over 300 buildings and over 750 other structures and facilities. In addition, The United States holds easements for a railroad line that connects with the Southern Pacific line and easements for the West Access Road and a water line to the Site.

The acquisition policy for the United States is to acquire only sufficient real property and rights to meet the Site mission. The purpose of the original acquisition of the central core at Rocky Flats was for weapons production. Additional land was requested but was not approved for a Buffer Zone in 1951-1952. In 1973-1975, additional buffer was required for security and to provide a buffer between the weapons production Site and residential development in the area. In all cases, mineral rights or water rights are not required with the surface rights.

In many cases, mineral rights were reserved by the seller, re-vested back to the seller or a third party at the time of acquisition, or previously severed and not associated with the acquisition. Site mission requirements have not identified any additional necessary acquisitions at this time.

On the 6266-acre Site, outstanding easements exist as follows:

- A. Western Gas Supply Co. (50 Year Easement from 9/21/60)
- B Two Western Slope Gas easements
- C Coors Energy gas pipeline -formerly Industrial Gas Co. Perpetual Easement (500-PSI - 10 inch)
- D Mountain States Telephone Cable 50 Year Easement 5/4/64 (U.S. West-fiber optic in existing easement)
- E Coors Energy 230 kV transmission line
- F Public Service 115 kV transmission line
- G Union Rural Powerline license 50 Years 5/1/60
- H. Union Rural Powerline license 50 Years 5/1/66

On the 6266-acre Site, State and County permitted mineral interests known to DOE exist as follows

- A Lakewood Brick and Tile - Operated by Frei & Sons
- B TXI (formerly Western Aggregates)
- C Conda
- D Colorado brick

If mineral rights had not been severed at the time of acquisition by the United States, or in some cases where the mineral rights had been partially severed, the surface acquisition may have included the minerals for the United States. In most cases, however, the seller retained the mineral rights and in some cases damages were paid to third party mineral owners for extinguishing the rights. In other cases, the mineral rights were reserved by the seller, revested back to the seller or a third party at the time of acquisition, or previously severed and not associated with the acquisition. The resulting ownership is surface ownership by the United States and approximately 94% subsurface mineral ownership by third parties. In addition, third parties have applied for and been granted mining permits and zoning variances from the State of Colorado Mined Land Reclamation Board and the Jefferson County Commissioners (mining regulators)

Under Colorado law, subsurface mineral owners have the right to extract and develop their subsurface mineral interests, including the right of access to the subsurface property and reasonable use of the surface as may be necessary to extract minerals. Surface owners under Colorado law have the right to reasonable use of the surface estate, to have the subsurface mineral estate developed in a reasonable manner, and to have the subsurface mineral owner mitigate adverse impacts to the surface property associated with the development of the subsurface estate

2. Zoning:

Most of Rocky Flats surface land is zoned agricultural as that was the zoning at the time of acquisition. The Jefferson County Commissioners have made zoning changes in several areas where mining operations and permits have been granted

This zoning is Mineral Conservation (west spray field area), and Planned Unit Development (for the TXI Western Aggregates mining permitted area), including areas designated as "Habitat Preservation Open Space" Zoning for future use after the real property is transferred from DOE ownership, is up to Jefferson County in most cases and Boulder County on the 39 acres south of Highway 128 in the north Buffer Zone, or a city if the land is annexed in the future

Policy

1. Land and Mineral Rights Acquisition:

The Site has no Congressional authority to buy real property rights or subsurface mineral rights unless essential to Site mission requirements. Purchase of mineral rights from the Site budget may have negative impacts on risk reduction and closure activities by allocating these resources at the expense of mission critical requirements

Commentary during County hearings on recently expanded mining permits indicated that the impacts of mining on the Site's tall grass prairie habitat may be potentially irreversible, despite the best efforts taken to reclaim mined areas. Additionally evident is the legitimate interest of the owners of subsurface minerals and the economic value of those interests. DOE would support and participate in a process to seek an equitable resolution to this situation, and is willing to join mining interests, special interest groups, and local governments to evaluate opportunities for innovative solutions to equitably protect natural resources, including valuable tall grass prairie.

The DOE will submit information to mining regulators on unique ecological values/areas and habitat in areas of proposed mining operations, new mining permits, and permit amendment applications, including information on sensitive or threatened and endangered species. Generally, permits should address whether the mine/permittee/operator adequately demonstrates that habitat and unique ecological areas can be appropriately reclaimed to comparable pre-mining habitat quality. Additionally, permits should address whether appropriate performance bonds are established in the mine permit or permit amendment application.

Generally, performance bonds should address that, in the event that the mine permittee/operator defaults on reclamation performance prescribed in the permit, a third party can reclaim the mined land and meet all mine permit specifications, and should reflect whether the reclamation described in the mine reclamation plan of the mine permit is realistic and achievable in a specified period of time. In addition, DOE will enforce its rights under Colorado law as necessary so that subsurface mineral activities are reasonable, result in mitigation of adverse impacts to the surface, and allow for reasonable use of the surface by the Site. If issues related to surface use by a subsurface mineral owner are not addressed under a State or County permit, DOE may either request that a State or County permit is amended, or DOE may issue a license for the subsurface mineral activity that may impact surface rights or interests.

2. Management and Disposal of Existing Rights:

The real property management policy for the Site is that all real property interests will be retained as long as they are required for the Site mission, after which disposition activities will be pursued as they would for any excess asset. Appropriate planning, environmental and CERCLA compliance and Federal screening of the property will occur in the disposition process. No parameters are yet established concerning the real property disposition.

Individual buildings, improvements, and facilities will be dispositioned according to the RFCA and Federal rules and regulations as scheduled in the integrated Site baseline. The DOE will continue to seek public input regarding real property disposition and reuse issues.

Emerging Policy Questions

1. The exact status of Site closure is not going to be determined for utilities, infrastructure, and long term ownership until the Site has accomplished a significant portion of the closure project. Therefore, the parameters of disposition have not been determined, including
 - a Disposition as a single unit or not;
 - b Disposition to a single entity or not,
 - c Deed Restrictions that may be required,
 - d Potential long term ownership of any facilities or land by DOE;
 - e Transfer of buildings or leases to entities for reuse; and
 - f Transfer of the jurisdiction of the Site to another Federal entity. •
- 2 Resolution of a Condemnation Settlement requiring that the Site import 20,000 gallons of water per day may effect real property.

E. LANDFILLS

Current Condition.

The Site has three landfills (1) the existing sanitary landfill in the north Buffer Zone, (2) the new, not-in-use sanitary landfill, in the northwest Buffer Zone and, (3) the "old" landfill on the hillside above Woman Creek (this landfill received both sanitary waste and non-sanitary waste and is a subject of Site environmental clean up). The new landfill was built to receive future plant sanitary waste but is currently not used.

Policy

Sanitary waste will be transported off-Site and disposed at a commercial sanitary landfill. The existing, in-use landfill will be used as a stand-by sanitary landfill and managed in compliance with applicable laws and regulations.

Emerging Policy Questions

1 Shall the unused landfill be used for clean (uncontaminated) waste that will be generated during closure, such as those from D&D initiatives?

MAP Site Landfills (Attachment E-7)

F. VEGETATION AND HABITAT MANAGEMENT

Current Condition

The uniqueness and diversity of the plant communities at the Site has been documented by a number of studies. The topography and close proximity of the Site to the mountains has resulted in an interesting mixture of prairie and foothills plant communities at the Site. Over 570 species of plants are reported for the Site. Threatened or endangered plant species are not known to occur at the Site. Plant communities at the Site range from xeric (dry) grassland communities to more hydric (wet) communities such as wet meadows and marshes.

The plant communities of greatest ecological significance on Site are the xeric tallgrass prairie, the Great Plains riparian community, the tall upland shrubland community, and wetlands. The CNHP lists the xeric tallgrass prairie at the Site as the largest known remnant of xeric tallgrass prairie in Colorado and possibly North America, the CNHP has classified this plant community as very rare.

The Site prairie habitat includes

- xeric tallgrass prairie;
- xeric needle-and-thread grass prairie,
- mesic mixed grassland,
- reclaimed mixed grassland,
- xeric mixed grassland,
- shortgrass prairie;
- a grassland composed of annual plants and forbs,
- a wet meadow-marsh ecotone,
- a short marsh and tall marsh,
- both short and tall upland shrublands,
- Savannah shrublands,
- several types of riparian (stream bank) shrublands
- annual grass/forb,
- riparian woodland, ponderosa pine woodland, and
- mudflats

Policy:

The Site prairie habitat is managed to maintain healthy, diverse native habitat and so as to not preclude future uses of the Buffer Zone, and to maintain habitat essential to endangered and rare species.

Emerging Policy Questions: None at this time

MAP: Site Vegetation (Attachment E-8)

1. Prescribed Burning

Current Condition

Wildfires at the Site have been suppressed for many years. As a result, plant litter (dead plant material) has built up in most areas of the grasslands for most of that period. This plant litter causes a number of management problems. Plant litter shades and stifles prairie plants when the accumulation builds too high, affecting the viability of such dominant species as big bluestem, little bluestem, mountain muhley, and others. This affects the viability of the Site xeric tallgrass prairie, mesic grasslands, and even wetlands. The thatch buildup also provides a heavy fuel load that can carry a prairie wildfire at a dangerous rate across open lands. The thatch buildup is of concern not only to Site resource managers, but to local fire companies who are called in to help control range fires on the Site and to neighboring owners of private and public land threatened by wildfires that start on the Site.

Grasslands at the Site evolved under conditions where prairie fires periodically swept across the prairie every five to ten years. Fire is an important tool in prairie management and maintenance through removal of thatch and recycling of nutrients. Fires stimulate the growth and vigor of prairie species by releasing nutrients and making nutrients available to plants.

Prescribed burning (fires set intentionally as part of a fire plan, a specific set of "rules" and prescribed weather conditions) can be used to rejuvenate overgrown habitats, reduce fuel loads, and reduce the chance of an uncontrolled wildfire. The greater the fuel load, the hotter the fire, and (1) the greater the potential of environmental damage and (2) the rapid spread of a wildfire to either the industrial area or neighboring lands. Prescribed burns on the Site could be used to increase the abundance and vigor of the prairie species while reducing fuel loads and fire potential.

Prescribed burning was routinely used over a 20-year period at the Site to remove weeds, reduce fire hazard, and remove vegetative litter. Neighboring local governments, including Jefferson County and Boulder County, routinely use prescribed burning. However, many area residents are concerned about the possibility that fires in the Buffer Zone could spread contamination.

The historic policy was to annually burn excess vegetation from fences and secure areas, last used in 1989. Site environmental documents note prescribed burning is recommended for a number of highly beneficial, previously described, purposes.

Mutual aid agreements with local fire districts are designed to specifically support the Site during emergencies, not prescribed burns. However, dependent on the availability of local departments, these departments may be able to support the Site in conducting prescribed burning

Policy

The Site is preparing a Vegetation Management Plan describing the use of fire and other management tools. The use of prescribed burning and other techniques will be open to public comment through the NEPA Environmental Assessment (EA) process. The Site is currently considering a return to prescribed burns as a vegetation management tool. DOE welcomes public involvement on this issue. Considering the Site has limited rangeland fire-fighting vehicles, the current Site policy is to aggressively suppress un-planned fires using support services from local fire districts, under mutual aid agreements

Emerging Policy Questions

1. Should the Site implement prescribed burning for the purposes described?
2. What criteria should be used to select areas in which prescribed burning shall be practiced?
3. If prescribed burning is conducted, what air monitoring and other practices should be implemented?

2. Weed Control

Current Condition

Ten years ago, there was little diffuse knapweed in the Buffer Zone, now, this Colorado-listed noxious weed inhabits over 38 percent of the Buffer Zone. Noxious weeds are defined by the State as exotic, aggressive plants that invade native habitat and cause adverse economic or environmental impacts. Typically, these exotic plants are resistant to the native plant predators and tolerant of or resistant to grazing. These weeds can displace native plant species by taking nutrients, water, light, and space from native vegetation. Invasion of these aggressive, damaging plants poses a serious threat to Buffer Zone plants and animals that depend on native plants.

Several species of noxious weeds in the Buffer Zone are highly aggressive and are contributing to the degradation and loss of native species richness and composition in the plant communities. Weed species at the Site include diffuse knapweed, musk thistle, dalmation toadflax, Canada thistle, St. Johnswort, and common mullein. Diffuse knapweed, an aggressive tumbleweed, is currently given highest control priority. Canada thistle is common throughout most of the wetlands, musk thistle is sparse but widespread across mesic grasslands, and dalmation toadflax occurs in patches in xeric grasslands.

An Integrated Weed Control Strategy is applied at the Site including education, biological controls, mechanical controls, chemical controls, use of weed-free seed and mulch, and prompt revegetation of disturbed sites. The Site also has an annual Integrated Weed Control Plan that addresses weed control methods, target species, and treatment areas to direct weed control efforts each year. Additionally, the Site has worked cooperatively with Jefferson County weed control personnel, and surrounding landowners to participate in regional weed control strategies and implement integrated weed control

Prescribed burning, described in another part of this section, can help control some weed species while promoting other weed species, depending upon specific conditions in each case that prescribed burning is applied. Prescribed burning, if the policy is approved, will be integrated with other weed control measures as part of an integrated weed control plan

The integrating contractor has requested approval for, and the Site has approved the concept of, aerial application of herbicides. Aerial application offers an opportunity to effectively control noxious weeds and reduce treatment costs while maintaining the health and safety of our applicators, workers, and neighbors. Aerial application will be subject to review in the Vegetation Management Plan and associated NEPA EA

Policy

The Site will develop a Vegetation Management Plan to evaluate and integrate weed control strategies, revegetation activities, and prairie maintenance. The Vegetation Management Plan will be the subject of an Environmental Assessment under the National Environmental Policy Act to analyze Vegetation Management options and alternatives and to actively educate and engage the public. DOE will actively evaluate a range of options, including controlled burning and herbicide spraying, will be evaluated, and it may be necessary to use an array of techniques for long-term habitat maintenance. DOE understands that there are some community concerns regarding controlled burns and herbicide use and will attempt to address these in developing the Vegetation Management Plan

The Site now controls noxious weeds in the Buffer Zone through ground application of herbicides as part of an integrated weed management program and will work with its neighbors in implementing an integrated weed management plan in compliance with applicable noxious weed control laws and regulations

Emerging Policy Questions

- 1 Should the Site implement aerial herbicide application for the purposes described?
- 2 What criteria should be used to select areas in which aerial herbicide application shall be practiced?

3 If aerial herbicide application is conducted, what air monitoring and other practices should be implemented?

3. Revegetation of Disturbed Areas

Current Condition

Well over 90 percent of the 5,870-acre Buffer Zone is in native prairie habitat in excellent range condition; a highly diverse group of prairie plant communities support a rich and varied combination of native animals. The Site, like many native sites across the West, is experiencing the invasion and establishment of noxious weeds, aggressive, exotic plants, with few if any native predators. The speed in reclaiming disturbed sites and the quality of the reclamation influences the quality of the habitat in the Buffer Zone, by slowing the invasion of noxious weeds.

Restoring plant communities on this Site can be a long and difficult process due to the challenging environmental conditions characteristic of the shortgrass Colorado High Plains, such as low precipitation, high evapotranspiration and desiccating winds.

Policy

The current policy is to promptly reclaim disturbed sites (sites predominantly disturbed as part of clean up and remediation of the industrial area) by seeding grasses, forbs and shrubs indigenous to this part of Colorado, to prevent the invasion and spread of noxious weeds.

In reclaiming sites within the industrial area, native vegetation will be selected based on criteria that the roots of applied vegetation will not harm installed barriers or potentially release contaminants due to root growth or penetration. Please refer to the section on mining for further reclamation policies.

Emerging Policy Questions None at this time

4. Potential Buffer Zone Habitat Enhancements

Current Condition

The majority of the Buffer Zone is native prairie in good condition. However, before the 1973 expansion of the Buffer Zone, wheat was farmed on a portion of the southeast Buffer Zone, an area of approximately 100 acres. After acquisition, these farmed acres were seeded with non-native species that have almost completely excluded native species succession. In the 25 years since that purchase, those lands disturbed by farming have not reverted to native prairie species.

The Buffer Zone contains a number of surface impoundments, but only the two holding private water rights provide the highest quality waterfowl habitat. The State of Colorado has proposed using Greater Outdoors Colorado funds to enhance waterfowl habitat in the southeast Buffer Zone. These funds could be used to construct two low-head impoundments, with berms about 4 feet high and water depths about 2-feet deep, and to purchase water to fill the ponds. The issue of the water supply source would require resolution before such a project could go forward in addition to involving other agencies, surrounding communities, and public comment.

Policy

The Site does not plan to re-seed the previously farmed lands, but would consider proposals to do so. The Site will continue to evaluate waterfowl habitat improvements. The Site will consider Buffer Zone habitat enhancements on a case-by-case basis. As with species re-introductions, habitat enhancements would only be considered if they did not affect Site cleanup and closure, and if they did not limit future uses of the buffer zone.

Emerging Policy Questions None at this time

G. CULTURAL RESOURCES

Current Condition

Cultural resources consist of prehistoric and historic buildings, sites, structures, districts, objects or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Generally, cultural resources must be more than 50 years old to be considered for protection under existing cultural resource laws.

Cultural resources can be divided into three major categories: archeological resources, architectural resources, and traditional cultural resources. Archeological resources, both prehistoric and historic, are locations where human activity has measurably altered the earth or left deposits of physical remains.

Cultural resource efforts at the Site have been conducted primarily to identify archeological resources within the Buffer Zone and to identify cultural resources of recent significance in the industrial area. Between 1988 and 1995, all undisturbed ground surface within the Buffer Zone was inspected for cultural resources. Resources found during these surveys within the Buffer Zone at the Site were primarily historic Euroamerican resources; Native American resources are rare at the Site.

Surveys to locate cultural resources have been conducted over the entire acreage of the Site Buffer Zone. A total of 35 archeological sites and 29 isolated finds (usually one or two artifacts) have been recorded in the Buffer Zone. Identified archeological sites in the Buffer Zone include stone rings and alignments, the remains of ranch buildings, trash dumps, stock ponds, corrals, irrigation ditches, an orchard, and a railroad grade. Isolated finds include chipped and ground stone artifacts, barbed wire, stone cairns, and pieces of farm equipment. None of the sites or isolated finds in the Buffer Zone has been determined eligible for listing in the National Register of Historic Places by the Colorado SHPO, and no special management or protective actions are required for these resources.

All known cultural resources at the Site have been evaluated for National Register eligibility. The Colorado SHPO has concurred with the findings. No additional evaluation is required, unless previously unknown resources are identified, or objects of potential scientific importance are identified. Even though all undisturbed areas within the Site have been surveyed for cultural resources, the vegetation in some locations precludes a determination that there are absolutely no undiscovered resources.

Because the density of known archeological resources at the Site is very low, long-term construction monitoring is not cost-effective and is not required by the Colorado SHPO. The Site will implement procedures from Section 4.10.6 of the CRMP in the event of an unanticipated discovery during Buffer Zone activities.

Policy:

In general, the Site will not provide protection for cultural resources that are ineligible for listing on the National Register of Historic Places. The Site will monitor surface disturbing activities in the Buffer Zone for occurrences of undiscovered cultural resources. If any suspected cultural resources are discovered, the work will be stopped or rerouted to avoid the area. The suspected cultural resources will be evaluated for significance and managed according to the CRMP.

Emerging Policy Questions

- 1 Is there sufficient community interest to justify stabilizing the Lindsay Ranch?

H. TOURS AND VISITS

Current Condition:

Tours of and visits to the Site are currently arranged and coordinated through the Tours and Visits office in the DOE Office of Communications with significant support from the counterpart contractor organization.

Site tours are given on an as needed/as requested basis and often include tours of the Buffer Zone area and its unique natural resources. Types of tours include formal visits by elected officials, DOE officials, and regulatory representatives to building or project specific tours for local stakeholders.

Policy:

It is the policy of the Site, in accordance with the DOE Openness Initiative, to accommodate as many requests for Site tours and visits as possible. As we move through cleanup of Rocky Flats, operation of the Tours and Visits function should remain fairly constant. Tours and visits include restricted access or controlled access on Site property and roads during Site closure operations.

Visitors to Rocky Flats will likely include, but are not limited to, members of assessment and review teams, congressional delegates, representatives from the Department of Energy, regulators, the Defense Nuclear Facilities Board, foreign dignitaries, members of the media, employee family members (Shadow/Career Day), the general public, and stakeholder groups.

Emerging Policy Questions: None at this time

I. NATIONAL ENVIRONMENTAL RESEARCH PARK DESIGNATION

Current Condition:

The National Environmental Research Park (NERP) is an outdoor field laboratory on a DOE facility. The NERP program is a voluntary DOE program designed to encourage researchers to come onto a NERP Site to do research. The research may be carried out to achieve national environmental goals, as articulated by the National Environmental Policy Act, the Energy Reorganization Act, the Department of Energy Organization Act, and the Nonnuclear Energy, Research and Development Act.

The DOE has established seven NERPs, beginning in 1972 at the Savannah River Site in South Carolina. NERPs allow and encourage the study of the environmental impacts of energy development, education of the public on environmental issues and land-use options, ecological research, and training in the ecological and environmental sciences. Designation as a NERP does not open a Site to the general public. However, a NERP designation allows access to Sites for researchers working on approved projects. Designation as a NERP lasts only as long as DOE owns a facility.

Such a designation was fully supported by and compatible with the final recommendations of the FSUWG. The quality and diversity of Buffer Zone ecology, and the rarity of some of its elements, would make this area an excellent and perhaps unique study Site for ecological research and education.

Designation would create a mechanism to allow researchers to come to the Site and conduct field research, develop cleanup technologies, waste treatment, and other activities to support the Site mission and the 10 year closure goal.

However, researchers would need to provide their own sources of funding. The NERP designation would not create any new legal designation of Site property, nor would it create any new legal requirements, and would have no legal impact on Site use.

Policy:

The current Site policy is to license private researchers not conducting DOE-funded research work who wish to conduct private research in the Site Buffer Zone. The Site is not currently designated as a NERP. DOE supports the establishment of a NERP at the Site.

Consistent with the majority of public sentiment, the Site will seek to acquire NERP designation, and implement mechanisms to support associated research activities. The Site plans to encourage research activities that will support Site closure as well as more general ecological research.

The Site accepts that Buffer Zone research pursuant to a NERP designation could enhance the effectiveness of cleanup, and could provide additional insight into long-term management. The Site will inform the community of the nature of on-going NERP activities, and will encourage researchers to share their results with the community on a regular basis. The Site will propose the nomination of the Buffer Zone, or a portion of the Buffer Zone (most likely to include the Rock Creek drainage) for designation as a NERP.

Emerging Policy Questions

- 1 How should community concerns and preferences be considered in implementing the NERP?
- 2 How can the Site best facilitate the use of NERP designation to help address important site management issues?

J. INFRASTRUCTURE, ROAD MANAGEMENT

Current Condition

There are approximately 35 miles of paved roads with an additional 10 miles of maintained unpaved roads. The Site maintains approximately 240 vehicles; and a large number of commercial vehicles to conduct daily business. The Site maintains non-paved roads in the Buffer Zone both as vehicle access and fire breaks. The Site has closed some roads to travel in order to increase prairie habitat. Also, the Site has reduced the width of road grading to 40 feet and driving vehicles off the road network is controlled to protect prairie habitat.

Policy

The Site will continue road-grading activities in the Buffer Zone to maintain roads and continue control of noxious weeds. The Site will minimize the width of road grading to protect prairie habitat while balancing fire control needs. The roads deemed necessary for closure will be maintained sufficient to allow for a safe operation, other roads will be allowed to return to nature, consistent with the Site vegetation management policy. The Site will control off-road vehicle traffic and maintain vehicles in a safe state until closure and then process vehicle inventory for proper disposition.

Emerging Policy Questions None at this time

K. UTILITIES

Current Condition

The Site has its own underground and aboveground utilities systems and supporting facilities. The scope of Site utilities includes: Water Utility Operations, Maintenance and Projects - Domestic water treatment and distribution; Nitrogen Plant Operations, Maintenance and Projects - Nitrogen Plant; Steam Utility Operations, Maintenance and Projects - Steam generation and Distribution; Gas Utility Operations, Maintenance and Projects - Natural Gas and propane distribution; Electric Utility Operations, Maintenance and Projects - Power Distribution; Utilities Management/Oversight and Administration; and Energy Management.

Policy

The operation and maintenance of Site utility systems must be maintained through the life of the Site in accordance with Site Closure Plans and approved deactivation schedules. As facilities are deactivated and decommissioned it is envisioned that the affected portions of the utility systems can also be deactivated and decommissioned. Utility requirements for the Site will decline over time as buildings are demolished.

Subsurface utilities between facilities may be capped and left in place. Removal of utilities in order to remediate contaminated areas will occur on case-by-case basis and according to closure plan cost effectiveness. Remaining utility requirements, including utility sources and services will be determined by utility contractual arrangements.

Emerging Policy Questions None at this time

L. ENVIRONMENTAL RESTORATION

Current Condition

The RFCA provides the framework for the conduct of environmental remediation activities. Through RFCA, environmental restoration activities are conducted as accelerated actions under the CERCLA. CERCLA, one of the two major environmental laws on which the RFCA is based, provides tools to clean up environmental contaminants, restore natural resources and remove Rocky Flats from the National Priorities List (NPL). Three major elements of CERCLA involve (i) the remedial or cleanup program which governs environmental remediation activities, (ii) the Natural Resource Damage (NRD) program which addresses the assessment and restoration of natural resources damaged or lost as a result of the release of contaminants into the environment or caused incident to the environmental cleanup program, and (iii) removing a facility from the NPL once environmental remediation has been successfully completed.

The CERCLA cleanup program focuses on concerns related to human health and the environment and is overseen at the Site by the EPA and the CDPHE. The cleanup program emphasizes local source control to prevent the further spread of contaminants and the removal of contaminants from the environment. The cleanup levels and standards in use are interim, meaning not final. These levels and standards are found in the Action Levels and Standards Framework which is Attachment 5 of RFCA. Final Cleanup levels will be chosen in the Corrective Action Decision Document/Record of Decision for the Buffer Zone and industrial area operable units.

The Action Levels and Standards Framework (ALF) establishes action levels for ground water and soil as well as action levels and cleanup standards for surface water. The ALF action levels describe numeric action levels of contamination in ground water, surface water, and soils which, when exceeded, trigger an evaluation, remedial action and/or management action. DOE develops, and EPA and CDPHE approve, RFCA decision documents that incorporate the ALF standards action and levels.

The CERCLA NRD program focuses on (i) measuring the extent of natural resource injury (e.g., which ones are affected, how badly they are affected, where they are located) and (ii) determining the necessary restoration measures (e.g., repair, replacement, or acquisition of equivalents) and how much the restoration measures will cost. The NRD program is carried out under the oversight of Federal and State Natural Resource Trustees for fish, wildlife, other living resources, water, lands, and protected areas.

The entire Site has been placed on the NPL. The final goal of the cleanup effort is to remove the entire Site from the NPL. Since many NPL listed facilities were listed "fence post-to-fence post", without complete Site characterization, there are provisions for the partial delisting of NPL facilities.

One of the goals of cleanup is to meet all requirements to eventually delist the facility from the NPL. There are also regulations that provide for the partial delisting of a facility by removing areas from a listing which do not meet the criteria for listing. Consistent with the discussion below, a policy decision has not been made whether to seek partial delisting at present. When Rocky Flats was placed on the NPL in 1989, it was listed in its entirety. Since that time, careful study has revealed most of the facility does not meet the criteria for listing as an NPL Site. Therefore, DOE will work with the public, EPA and CDPHE to determine whether the removal of these portions of the buffer zone areas from the NPL is proper. DOE will not, however, use partial delisting to accelerate final land use decisions for these areas.

Policy

The DOE, as outlined in the Rocky Flats Vision, the RFCA Preamble, and the Memorandum of Understanding with the NRD program Natural Resource Trustees, will conduct cleanup activities in a manner that, to the extent possible, will preserve and protect Site natural resources. To this end, DOE, when planning and carrying out its cleanup program at the Site, including response action investigation, selection, and implementation, will invite the early participation of the Natural Resource Trustees. This participation provides an opportunity for the Natural Resource Trustees to identify foreseeable or potential risks to natural resources associated with DOE's cleanup activities so adverse impacts can be avoided or at least mitigated prior to cleanup decisions being finalized.

In addition, RFCA decision document will specifically disclose to the public any injury to natural resources that may result from implementing a response action at the Site, including any irreversible and irretrievable commitments of natural resources.

Emerging Policy Questions

1 Action Levels and Standards Framework

The above policy statement is taken from RFCA and is the position agreed upon by the RFCA parties. There are currently no outstanding policy issues involving ALF. There are two activities that may spawn issues: (1) the independent Radiological Soil Action Levels (RSAL) review, and (2) the review of RSAL in light of the new Nuclear Regulatory Commission rules.

2 Natural Resource Damages

What additional proactive measures shall DOE take in an effort to limit potential liability associated with the CERCLA NRD program?

M. SAFEGUARDS AND SECURITY

Current Condition.

Under the Atomic Energy Act of 1954, the Buffer Zone serves two purposes (1) it provides a zone of security to protect the industrial area and the special nuclear material contained therein and (2) it provides a zone to protect the health and safety of local communities and local residents in the event of a release to the environment from the Site

The current Safeguard and Security use of the Buffer Zone is limited to the operation of a Live Fire Range, Shoot House and Obstacle Course in the north Buffer Zone. Security Police Officers (SPOs) are required to re-qualify with their duty weapons semi-annually. The Site will have armed SPOs at the Site as long as there is Special Nuclear Material (SNM) on Site. Currently, the only firing range in the Denver Metro area that meets DOE range requirements is the Site range. As a result, the range will exist as long as SNM remains on Site. In addition, the Site has entered into License Agreements with a substantial number of Local, State and Federal Law Enforcement Agencies who also utilize the Site range/ training facilities. The net result of these agreements is that the number of range use days is increasing rather than decreasing.

Policy

Although much of the Buffer Zone is outside points of compliance or locations used for safety analysis envelopes, in 1998, the Site reduced the Surface Danger Zone (SDZ) to an area nearer the new North Shooting Range in accordance with the improvements made to the range in 1996. The Site will amend the Range Risk Analysis to reflect this reduction of the SDZ and publish and distribute copies of the Range Risk Analysis as a controlled document.

Emerging Policy Questions

1. Should DOE consider keeping the firing range in operation after its own security needs have ended?

N. WILDLIFE MANAGEMENT

Current Condition

Section IV describes the wildlife present at the Site. However, there are policies specific to wildlife management. Species re-introduction in general is discussed in Section V. Hunting of wildlife has not been allowed on Site lands since acquisition of the inner Buffer Zone and outer Buffer Zone in 1952 and 1973 respectively. This policy will remain in effect through the interim period.

Policy.

There is a proposal to reintroduce prairie dogs to the Site. Because introduction of prairie dogs can introduce bubonic plague to the Site, DOE will likely not authorize the re-introduction of the prairie dog; further, natural reintroduction is likely to occur. Prairie dogs are native to the Buffer Zone. Several years ago, an outbreak of plague nearly eliminated the prairie dog colonies found on Site. Natural re-colonization has been occurring over the past few years, and prairie dogs have become reestablished, albeit in small numbers, in most formerly occupied locations.

There was a proposal to reintroduce bison to the Site. DOE will not authorize reintroduction of Bison due to funding constraints to provide fencing and management requirements. In addition, reintroduction of Bison may preclude future land use.

Emerging Policy Questions None at this time.

SECTION VI: APPENDIX

- A References
- B Acronyms
- C Site Maps
- D Species Information

REFERENCES

Annual Wildlife Survey Report of 1997

Atomic Energy Act of 1954

Clean Air Act

Colorado Hazardous Waste Act

Colorado Mined Land Reclamation Act

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

Endangered Species Act of 1973

Federal Facilities Compliance Act of 1992

Federal Water Pollution Control Act (Clean Water Act)

Future Site Use Working Group Report, July 1995

Stewart B McKinney Homeless Assistance Act (McKinney Act)

Migratory Bird Treaty Act

Memorandum of Agreement between State of Colorado and Department of Interior on Colorado's Declining Native Species dated November 1995

National Environmental Protection Act of 1969

National Historic Preservation Act of 1966

Resource Conservation and Recovery Act of 1976

Rocky Flats Cleanup Agreement, July 1996

Rocky Flats Integrated Water Management Plan

Rocky Flats Closure Project

Toxic Substance Control Act

ACRONYMS

ALARA	As Low As Reasonably Achievable
ALF	Action Level and Standards Framework
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CNHP	Colorado Natural Heritage Program
CRMP	Cultural Resource Management Plan
CHWA	Colorado Hazardous Waste Act
CWA	Clean Water Act
D&D	Deactivation & Decommissioning
DOE	Department of Energy
DOW	Colorado Division of Wildlife
EA	Environmental Assessment
ELG	Environmental Liaison Group
EPA	Environmental Protection Agency
ERMP	Ecological Resource Management Plan
ESA	Endangered Species Act
FFCA	Federal Facilities Compliance Act
FSUWG	Future Site Use Working Group
FWS	Fish and Wildlife Service
IMP	Groundwater Integrated Monitoring Plan
IWMP	Integrated Water Management Plan

MOA	Memorandum of Agreement
NERP	National Environmental Research Park
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRD	Natural Resource Damages
NRMP	Natural Resource Management Policy
PMJM	Prebles Meadow Jumping Mouse
POP	Pond Operations Plan
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
ROD	Record of Decision
RSAL	Radiological Soil Action Level
SDZ	Surface Danger Zone
SHPO	State Historic Preservation Officer
SLPP	Standley Lake Protection Project
SNM	Special Nuclear Material
SPO	Security Police Officer
SITE	Rocky Flats Environmental Technology Site
T&E	Threatened and Endangered
WWTP	Waste Water Treatment Plant

SPECIAL-CONCERN SPECIES LISTS

Federal Endangered Species Known to Occur at Rocky Flats

- Birds
American Peregrine Falcon (*Falco peregrinus*)

Federal Threatened Species Known to Occur at Rocky Flats

- Birds
Bald Eagle (*Haliaeetus leucocephalus*)
- Mammals
Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*)

Federal Special-Concern Species Known to Occur at Rocky Flats

- Birds
Northern Goshawk (*Accipiter gentilis*)
Baird's Sparrow (*Ammodramus bairdii*)
Western Burrowing Owl (*Athene cunicularia hypugea*)
Ferruginous Hawk (*Buteo regalis*)
Black Swift (*Cypseloides niger*)
Loggerhead Shrike (*Lanius ludovicianus*)
White-faced Ibis (*Plegadis chihi*)
- Herptiles
Eastern Short Horned Lizard (*Phrynosoma douglassii brevirostra*)
- Mammals
Small-footed Myotis (*Myotis subulatus*)

Colorado Species of Special Concern Known to Occur at Rocky Flats

- Amphibians
Northern Leopard Frog (*Rana pipiens*)
- Birds
Long-billed Curlew (*Numenius americanus*)
Greater Sandhill Crane (*Grus canadensis tibida*)
American White Pelican (*Pelecanus erythrorhynchos*)

Federal Endangered Species with Potential Habitat at Rocky Flats

- Birds
 - Whooping Crane (*Grus americana*)
 - Least Tern (*Sterna antillarum*)
 - Piping Plover (*Charadrius melodus*)
- Mammals
 - Black-footed Ferret (*Mustela nigripes*)

Federal Threatened Species with Potential Habitat at Rocky Flats

- Insects
 - Pawnee Montane Skipper (*Hesperia leonardus montana*)
- Plants
 - Ute Ladies'-tresses (*Spiranthes diluvialis*)

Federal Candidate Species with Potential Habitat at Rocky Flats

- Birds
 - Mountain Plover (*Charadrius montanus*)
 - Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
- Plants
 - Colorado Butterfly Plant (*Gaura neomexicana* var. *coloradensis*)

Federal Special-Concern Species with Potential Habitat at Rocky Flats

- Birds
 - Western Snowy Plover (*Charadrius alexandrinus nivosus*)
 - Black Tern (*Chlidonias niger*)
- Fish
 - Plains Topminnow (*Fundulus sciadicus*)
- Insects
 - Regal Fritillary (*Speyeria idalia*)
- Plants
 - Bell's Twinpod (*Physaria belli*)
 - Tulip Gentian (*Eustoma grandiflora*)
 - Adder's Mouth Orchid (*Malaxis brachypoda*)

- Mammals

Spotted Bat (*Euderma maculatum*)
Long-eared Myotis (*Myotis evotis*)
Fringed Bat (*Myotis thysanodes*)
Long-legged Myotis (*Myotis volans*)
Pale Townsend's Big-eared Bat (*Plecotus townsendii pallescens*)
Plains Spotted Skunk (*Spilogale putorius interrupta*)
Swift Fox (*Vulpes velox*)

Colorado Species of Special Concern with Potential Habitat at Rocky Flats

- Fish

Common Shiner (*Notropis cornutus*)
Stonecat (*Noturus flavus*)

- Birds

Barrow's Goldeneye (*Bucephala islandica*)
Plains Sharp-tailed Grouse (*Tympanuchus phasianellus jamesi*)

Watch-Listed Species Known to Occur at Rocky Flats

- Birds

Short-eared Owl (*Asio otus*)
Olive-sided Flycatcher (*Contopus borealis*)
Virginia's Warbler (*Vermivora virginiae*)
Chestnut-sided Warbler (*Dendroica pensylvanica*)
Field Sparrow (*Spizella pusilla*)
Lark Bunting (*Calamospiza melanocorys*)
Baird's Sparrow (*Ammodramus bairdi*)
Grasshopper Sparrow (*Ammodramus savannarum*)
Chestnut-collared Longspur (*Calcarius ornatus*)
Swainson's Hawk (*Buteo swainsoni*)

Sources:

Colorado Natural Heritage Program 1996 List of Rare and Imperiled
Animals, Plants, and Natural Communities

Federal Register, February 28, 1996, pp 7596-7613

Migratory Nongame Birds of Management Concern the 1995 List

**PREBLE'S MEADOW JUMPING MOUSE
PROTECTION POLICY, REVISION 5a
U.S. DEPARTMENT OF ENERGY, ROCKY FLATS FIELD OFFICE**

- 1 This Protection Policy applies to the Department of Energy (DOE) and its contractors at Rocky Flats Environmental Technology Site (Site).
- 2 Site activities will be evaluated under Procedure 1-D06-EPR-END 03, *Identification and Protection of Threatened, Endangered, and Special-Concern Species* (T&E Procedure) to protect the Preble's meadow jumping mouse and its habitat at the Site. The Preble's meadow jumping mouse (*Zapus hudsonius preblei*) is listed as a threatened species under the Endangered Species Act (ESA).
- 3 Site activities are also evaluated under Procedure 1-S73-ECOL-001, Wetland Identification and Protection, which ensures wetland protection at the Site. Primary habitat of the Preble's mouse includes wetlands. Wetland protection is also required under the Clean Water Act (CWA).
- 4 The DOE, Rocky Flats Field Office (RFFO) ESA Coordinator, as identified in the T&E Procedure, is the Regulatory Liaison Group Lead (or a designee).
- 5 Map E-6 provides the *Designated Protection Areas* for the Preble's mouse. These designations include *Known Habitat*, *Suitable Habitat* and *Supporting/Other Protected Vegetation*. See Appendix A for definitions of these terms.
- 6 Only necessary work is permitted in *Known Habitat*. Necessary work is defined as that which is designed to study the Preble's mouse; required to protect or enhance natural resource values; or is expressly required by regulatory direction or agreement. Any necessary work that may cause disturbance, destruction, or other impacts to *Known Habitat* must be approved in advance of any work, and reviewed by the U.S. Fish and Wildlife Service (USFWS) during the *consultation* process required under the ESA. DOE's contract ecologists shall review and approve/disapprove projects proposed in *Known Habitat*, then refer such projects to the ESA Coordinator for concurrence. No project in *Known Habitat* may proceed until the ESA Coordinator has concurred. The ESA Coordinator shall review the project, *consult* with the USFWS, and concur/object within 10 working days of notification. DOE may allow the project to proceed, with or without modification, after *consultation* with the USFWS has been completed. The ESA Coordinator shall notify the project manager of the results of the consultation process including whether the project may proceed and if project modifications are required.

7. Any Site activity that will occur in *Suitable Habitat* shall be subject to review and approval under the T&E Procedure. The Site's contract ecologists shall review and approve/disapprove projects proposed in *Suitable Habitat*. Projects in *Suitable Habitat* that are *disapproved* by DOE's contract ecologists shall be referred to the ESA Coordinator for further review. This review shall be completed within 10 working days of notification. No disapproved project may proceed unless the ESA Coordinator has reversed the disapproval. DOE may require modification before allowing the project to proceed.
8. Any Site activity that will occur in *Supporting and Other Protected Vegetation* shall be subject to review and approval under the T&E and Wetland Procedures. If disapproved it should be referred to the ESA Coordinator. The Site's contract ecologists shall review and approve/disapprove projects proposed in *Supporting and Other Protected Vegetation*. Project modification may occur to allow the project to proceed.
9. Any activity, in any of the *Designated Protection Areas*, may be referred to the ESA Coordinator for *consultation* with the USFWS.

Preble's Meadow Jumping Mouse Designated Protection Areas

For the purpose of the *Preble's Meadow Jumping Mouse Protection Policy, Revision 5, U.S. Department of Energy, Rocky Flats Field Office*, Preble's mouse habitat has been identified in Map E-6, *Preble's Meadow Jumping Mouse Designated Protection Areas at Rocky Flats Environmental Technology Site*. For the purposes of this Policy and Map, these protection areas are defined as follows:

Known Habitat

Known Habitat is characteristic habitat where the Preble's mouse has been documented based on studies conducted at Rocky Flats Environmental Technology Site (Site) since 1991. This habitat typically includes the vegetation types classified as riparian woodland, riparian shrubland, tall upland shrubland, short upland shrublands adjacent to streams, and a grassland band that is immediately adjacent to the woody vegetation types. These areas are along stream channels and pond margins in all stream drainages of the Site.

Suitable Habitat

Suitable Habitat at the Site includes the remaining units of riparian woodland, riparian shrubland, and upland shrublands, and an inclusion of grasslands that are immediately adjacent to these woody vegetation types. Suitable Habitat is classified as high quality habitat that is very similar to Known Habitat, yet differs in that the Preble's mouse has not been documented in these areas. Suitable Habitat is particularly important because these areas may be needed for dispersal of juveniles and establishment of new population centers during times when optimum conditions allow population expansion,

Suitable Habitat, combined with Known Habitat, apparently provides the viable combination and extent of Preble's mouse habitat needed to sustain a population in a given stream drainage over time. Suitable Habitat has been mapped on the basis of plant community, hydrology, and topography which in combination, according to recent studies at the Site, can be expected to support populations of the Preble's mouse. Based on the 1996 Vegetation Types Map, Suitable Habitat was designated by selecting all woody riparian vegetation types and adding a 100-foot strip of grassland surrounding these riparian types. This represents the habitat used by the Preble's mouse on the Site. The 100-foot strip is based on the current knowledge of the maximum foraging distance from streams.

Supporting and Other Protected Vegetation

Supporting and Other Protected Vegetation includes wetlands, most of which are adjacent to, contiguous with, or upstream of Known or Suitable Preble's mouse habitat. Although these areas already receive protection under the Clean Water Act, they shall receive additional protection at the Site both as potential habitat for the Preble's mouse, and because they contribute to, and help control the quality of, the adjacent Known and Suitable Preble's mouse habitat. Wetlands play an important role in capturing upstream waters, and regulating their release downstream. Wetlands are also a natural filtration system that helps settle silt and purify water. Thus, wetlands have a direct effect on Known and Suitable Habitats by ensuring that a clean, consistent source of moisture is available to sustain the downstream areas. This naturally controlled release of water throughout the year may be an essential factor in long-term maintenance of the riparian vegetation communities requisite for the survival of the Preble's mouse. Wetlands within the riparian zone act as travel corridors between areas of Known and Suitable Habitat. For all these reasons, wetlands play a supportive role in maintaining and enhancing Preble's mouse habitat at the Rocky Flats Environmental Technology Site. Based on the 1996 Vegetation Types Map, Supporting and Other Protected Vegetation was designated by selecting appropriate herbaceous riparian vegetation types. Note this map feature does not include all Site wetlands, and should not be used to address wetland concerns or issues with the Clean Water Act.

SITE MAPS

- 1 Regional Context
- 2 Rocky Flats Site
- 3 IWMP Conceptual Model
- 4 Pond and Stream Network and Creek and Ditch Network
- 5 Site Wetlands
- 6 PMJM Protected Areas
- 7 Site Landfills
- 8 Site Vegetation

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