FINAL

PHASE II RFI/RIFS WORK PLAN
(Alluvial)

ROCKY FLATS PLANT

903 PAD, MOUND, and EAST TRENCHES AREAS
(OPERABLE UNIT NO. 2)

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

ENVIRONMENTAL RESTORATION PROGRAM

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FINAL PHASE II RCRA FACILITY INVESTIGATION
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

WORK PLAN

ROCKY FLATS PLANT
903 PAD, MOUND, AND EAST TRENCHES AREAS
(OPERABLE UNIT NO.2)

ENVIRONMENTAL RESTORATION PROGRAM

U.S. Department of Energy
Rocky Flats Office
Golden, Colorado

REVIEWED FOR CLASSIFICATION/UCNI
By George H. Setlock
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EXECUTIVE SUMMARY

This document presents the work plan for the Phase II RCRA Facility Investigation/ Remedial Investigation and Feasibility Study (RFI/RIFS) of the 903 Pad, Mound, and East Trenches Areas (Operable Unit No. 2) at the Rocky Flats Plant. An initial (Phase I) field program was completed during 1987, and a draft RI report was submitted to EPA and CDH on December 31, 1987 (Rockwell International, 1987a). This Phase II RI Work Plan presents site-specific plans for further field work to characterize sources and the extent of soils, surface water, and ground-water contamination. It is based on results presented in the draft RI report as well as subsequent surface water and ground-water sampling and analysis. In order to fully characterize the location, extent, and orientation of bedrock sandstones and subsequently the extent of contamination within these units, a seismic geophysical program is currently being implemented at Operable Unit No. 2. A separate Phase III RI Work Plan will be prepared in 1990 presenting results of the ongoing seismic survey and plans for further bedrock ground-water investigations.

This Phase II RFI/RIFS Work Plan for the 903 Pad, Mound, and East Trenches Areas presents results of the Phase I RI; defines data quality objectives and data needs based on that investigation; specifies RFI/RIFS tasks; and presents a Field Sampling Plan. Section 1.0 presents site locations and descriptions, and Section 2.0 presents results of the Phase I RI. Included in Section 2.0 are Phase I characterization results for site geology and hydrology as well as the nature and extent of contamination in soils, ground water, surface water, and sediments. The nature and extent of contamination as described in Section 2.0 is based on a comparison between on-site data and Plant background data. Only one round of background ground-water and two rounds of background surface water sampling results are currently available. Because the background study is an ongoing program, these conclusions are considered preliminary and will be revisited during preparation of the final RFI/RI report. Section 3.0 discusses data quality objectives for the Phase II investigation. Section 4.0 specifies RFI/RIFS tasks to be performed, and Section 5.0 presents the Field Sampling Plan to meet the RFI/RIFS objectives.

The 903 Pad, Mound, and East Trenches Areas, located on the east side of the Rocky Flats Plant security area, were selected for investigation because of their suspected relationship to ground-water

contamination. Based on existing results, carbon tetrachloride, tetrachloroethene, and trichloroethene are the primary volatile organic contaminants found in the unconfined ground-water flow system at these areas. Trace elements commonly occurring above background levels include strontium, barium, copper and nickel, and to a lesser extent chromium, manganese, selenium, lead, zinc and molybdenum. Also, major cations and anions and total dissolved solids are somewhat elevated above background throughout and downgradient of the 903 Pad, Mound, and East Trenches Areas. Uranium 238 is the predominant radionuclide occurring above background in the unconfined ground-water flow system, but a few samples indicate plutonium and americium downgradient of the 903 Pad and possibly north of the Mound. An evaporative concentration conceptual model has been advanced that may explain high TDS, metals, and uranium in ground water at Operable Unit No. 2. This model does not alter the borehole and well placement strategy in the Phase II plan, and it's veracity will be tested in the background characterization study.

There is considerable interaction between surface water and ground water. As a result, organic contamination is observed in seeps downgradient of the 903 Pad and in the upper reaches of South Walnut Creek at the Mound Area. Also, there are somewhat elevated concentrations of total dissolved solids, major ions, strontium, zinc, and uranium at many of the surface water stations.

Plutonium and americium occur above background in surface soils. Other radionuclides and trace metals occur at low concentrations and infrequently above background, and may also be soil contaminants at the 903 Pad, Mound, and East Trenches Areas. Plutonium and americium were released to soils in the area via wind dissemination during clean-up efforts at the 903 Drum Storage Site. These radionuclides occur in surface soils throughout the 903 Pad, Mound, and East Trenches Areas and other areas downwind to the southeast.

The overall objectives of the Phase II are source characterization and determination of the magnitude and extent of ground-water and surface water contamination. Boreholes will be drilled into waste sources to characterize any waste materials remaining in place and to assess the maximum contaminant concentrations in soils directly beneath the sites. In addition, ground-water monitoring wells will be installed adjacent to some of the boreholes to characterize ground-water quality directly beneath the sites. This plan calls for drilling and sampling 45 boreholes and the installation of 36 "source" monitoring wells. Sixty-eight additional alluvial

monitoring wells will be installed to further characterize ground-water flow and quality in surficial materials at the 903 Pad, Mound, and East Trenches Areas, and additional bedrock monitoring wells will be completed in subcropping Arapahoe sandstone where it is encountered. These plume characterization wells will be installed, developed, and sampled as the first step of the investigation. Source characterization activities will be performed subsequently. This "step-approach" will facilitate evaluation of the need for and Interim Measures/Interim Remedial Action (IM/IRA) to mitigate contaminant migration in ground water of the alluvium and hydraulically interconnected bedrock sandstone (uppermost sandstone) before issuance of the final RFI/RI report.

Nineteen surface water stations were established south of the 903 Pad and East Trenches Areas in the Woman Creek drainage during the 1986 and 1987 investigations, and 12 stations were established north of the Mound and East Trenches Areas in the South Walnut Creek drainage. These 31 stations will also be sampled during the Phase II RI investigation.

In order to assess the extent of plutonium and americium in surficial soils within Plant boundaries, 57 surface soil samples will be collected over an 800 acre area to the southeast of the 903 Pad. To delineate the vertical distribution of plutonium and americium, 24 locations have been identified for subsurface sampling.

1.0 INTRODUCTION

This document presents the work plan for the Phase II RCRA Facility Investigation (RFI)/Remedial Investigation/ Feasibility Study (RIFS) of the 903 Pad, Mound, and East Trenches Areas (Operable Unit No. 2) at the Rocky Flats Plant. It addresses source characterization and the nature and extent of ground-water surface water, and soil contamination in these areas. In addition to this Phase II plan, a comparable work plan for the Phase III RFI/RIFS will be completed in 1990. Phase III work will focus on bedrock investigations.

This investigation is part of a comprehensive, phased program of site characterization, remedial investigations, feasibility studies, and remedial/corrective actions currently in progress at the Rocky Flats Plant. These investigations are pursuant to the U.S. Department of Energy (DOE) Environmental Restoration (ER) Program [formerly known as the Comprehensive Environmental Assessment and Response Program (CEARP)], a Compliance Agreement between DOE, the U.S. Environmental Protection Agency (EPA) and the State of Colorado Department of Health (CDH) dated July 31, 1986, and a draft Inter-Agency Agreement (IAG) being developed among DOE, EPA, and CDH. The program developed by DOE, EPA, and CDH in response to the agreements addresses RCRA and CERCLA issues and has been integrated with the ER Program. In accordance with the draft IAG, the CERCLA terms "Remedial Investigation" and "Feasibility Study" in this document are considered equivalent to the RCRA terms "RCRA Facility Investigation" and "Corrective Measures Study" (CMS).

1.1 ENVIRONMENTAL RESTORATION PROGRAM

The ER Program is designed to investigate and clean up contaminated sites at DOE facilities. The ER Program is being implemented in five phases. Phase 1 (Installation Assessment) includes preliminary assessments and site inspections to assess potential environmental concerns. Phase 2 (Remedial Investigations) includes planning and implementation of sampling programs to delineate the magnitude and extent of contamination at specific sites and evaluate potential contaminant migration pathways. Phase 3 (Feasibility Studies) evaluates remedial alternatives and develops remedial action plans to mitigate environmental problems identified as needing correction in Phase 2. Phase 4 (Remedial Design/Remedial Action) includes design and implementation of site-specific remedial actions selected on the basis of Phase

3 feasibility studies. Phase 5 (Compliance and Verification) implements monitoring and performance assessments of remedial actions, and verifies and documents the adequacy of remedial actions carried out under Phase 4. Phase 1 has already been completed at Rocky Flats Plant (U.S. DOE, 1986), and Phases 2, 3, and 4 are currently in progress for Operable Unit No. 2 (903 Pad, Mound, and East Trenches Areas).

With respect to Phase 2 activities at Operable Unit No. 2, an initial (Phase I) field program was completed during 1987, and a draft RI report was submitted to EPA and CDH on December 31, 1987 (Rockwell International, 1987a). This Phase II RFI/RI Work Plan presents site-specific plans for further field work to characterize sources and the extent of ground-water contamination in the uppermost aquifer (surficial materials and subcropping sandstones). It is based on results presented in the draft RI report as well as subsequent ground-water sampling and analysis. An interim remedial action is being planned to treat contaminated surface water in South Walnut Creek north of Operable Unit No. 2. A final remedial action will be proposed based on the Phase II and Phase III investigations.

Results of the Phase I RI indicate that a depositionally complex bedrock hydrogeologic system exists beneath the 903 Pad, Mound and East Trenches Areas. In order to further characterize the location, extent, and orientation of sandstones, and bedrock facies and stratigraphic relationships, a high resolution seismic reflection program is currently being implemented at Operable Unit No. 2 (Rockwell International, 1989a). A separate Phase III RFI/RI Work Plan will be prepared in 1990 presenting results of the ongoing seismic survey and plans for further bedrock ground-water investigations.

1.2 WORK PLAN OVERVIEW

This Phase II RFI/RIFS Work Plan for the 903 Pad, Mound, and East Trenches Areas presents results of the Phase I RI; defines data quality objectives and data needs based on that investigation; specifies RIFS tasks; and presents a Field Sampling Plan (FSP). This section (1.0 Introduction) presents site locations and descriptions, and Section 2.0 presents results of the Phase I RI. Included in Section 2.0 are Phase I characterization results for site geology and hydrology as well as the nature and extent of contamination in soils, ground water, surface water, and sediments. Section 3.0 discusses data quality objectives for the Phase

II investigation. Section 4.0 specifies RIFS tasks to be performed, and Section 5.0 presents the FSP to meet RIFS objectives. The appendices contain all available data pertaining to Operable Unit No. 2. These data are in the process of being validated in accordance with the ER Program Quality Assurance/Quality Control (QA/QC). At this time, only a small fraction of the data have been validated, and these data are identified in the appendices by a qualifier adjacent to each datum. The qualifier "V" means the datum is valid, "A" means the datum is acceptable with qualifications [breach of quality assurance (QA)], and "R" means the datum is rejected. Rejected data either did not conform to the significant aspects of QA/QC procedures identified in the ER Program QA/QC Plan (Rockwell International, 1989f), or there is insufficient documentation to demonstrate conformance with these procedures. These data, at best, can only be considered qualitative measures of the analyte concentrations.

1.3 BACKGROUND AND PHYSICAL SETTING

1.3.1 Background

The Rocky Flats Plant is a government-owned, contractor-operated facility, which is part of the nationwide nuclear weapons production complex. The Plant was operated for the U.S. Atomic Energy Commission (AEC) from its inception in 1951 until the AEC was dissolved in January 1975. At that time, responsibility for the Plant was assigned to the Energy Research and Development Administration (ERDA), which was succeeded by the DOE in 1977. Dow Chemical U.S.A., an operating unit of the Dow Chemical Company, was the prime operating contractor of the facility from 1951 until June 30, 1975. Rockwell International was the prime contractor responsible for operating the Rocky Flats Plant from July 1, 1975 until December 31, 1989. EG&G, Rocky Flats, Inc., became the prime contractor at the Rocky Flats Plant on January 1, 1990.

1.3.1.1 Plant Operations

The primary mission of the Rocky Flats Plant is to fabricate nuclear weapon components from plutonium, uranium, and other non-radioactive metals (principally beryllium and stainless steel). Parts made

at the Plant are shipped elsewhere for assembly. In addition, the Plant reprocesses components after they are removed from obsolete weapons for recovery of plutonium.

Both radioactive and nonradioactive wastes are generated in the production process. Current waste handling practices involve on-site and off-site recycling of hazardous materials, on-site storage of hazardous and radioactive mixed wastes, and off-site disposal of solid radioactive materials at another DOE facility. However, both storage and disposal of hazardous, radioactive, and radioactive mixed wastes occurred on site in the past. Preliminary assessments under the ER Program identified some of the past on-site storage and disposal locations as potential sources of environmental contamination.

1.3.1.2 Previous Investigations

Various studies have been conducted at the Rocky Flats facility to characterize environmental media and to assess the extent of radiological and chemical contaminant releases to the environment. The investigations performed prior to 1986 are summarized in Rockwell International (1986a) and include:

1) Detailed descriptions of the regional geology (Malde, 1955; Spencer, 1961; Scott, 1960, 1963, 1970, 1972 and 1975; Van Horn, 1972 and 1976; U.S. DOE, 1980; Dames and Moore, 1981; and Robson et al., 1981a and 1981b);

2) Several drilling programs beginning in 1960 that resulted in the construction of approximately 60 monitor wells by 1982;

3) An investigation of surface and ground-water flow systems by the U.S. Geological Survey (Hurr, 1976);

4) Environmental, ecological, and public health studies which culminated in an environmental impact statement (U.S. DOE, 1980);

5) A summary report on ground-water hydrology using data from 1960 to 1985 (Hydro-Search, Inc., 1985);

6) A preliminary electromagnetic survey of the Plant perimeter (Hydro-Search, Inc., 1986);

7) A soil gas survey of the Plant perimeter and buffer zone (Tracer Research, Inc., 1986); and

8) Routine environmental monitoring programs addressing air, surface water, ground water, and soils (Rockwell International, 1975 through 1985, 1986b, 1987b, and 1989b).

In 1986, two major investigations were completed at the Plant. The first was the ER Program Phase 1 installation assessment (U.S. DOE, 1986) which included analyses and identification of current operational activities, active and inactive waste sites, current and past waste management practices, and potential environmental pathways through which contaminants could be transported. A number of sites were identified that could potentially have adverse impacts on the environment. These sites were designated as solid waste management units (SWMUs) by Rockwell International (1987c) and were divided into three categories:

1) hazardous waste management units that will continue to operate and need a RCRA operating permit,

2) hazardous waste management units that will be closed under RCRA interim status, and

3) inactive waste management units that will be investigated and cleaned up under Section 3004(u) of RCRA or CERCLA. No RCRA or CERCLA regulatory distinction in the use of the terms "site", "unit", or "SWMU" is intended in this document.

The second major investigation completed at the Plant in 1986 involved a hydrogeologic and hydrochemical characterization of the entire Plant site. Plans for this study were presented in Rockwell International (1986c and 1986d), and study results were reported in Rockwell International (1986e). Investigation results indicated four areas to be significant contributors to environmental contamination, with each area containing several sites. The areas are the 881 Hillside Area, the 903 Pad Area, the Mound Area, and the East Trenches Area.

Due to their proximity, the 903 Pad, Mound, and East Trenches Areas were grouped together and designated Operable Unit No. 2. A Phase I RI of Operable Unit No. 2 was completed in December 1987 (Rockwell International, 1987a), and a draft Phase II RI Sampling Plan was submitted to the EPA and CDH in June 1988 (Rockwell International, 1988a). A draft final Phase II RI/FS Work Plan was submitted to the EPA and CDH in December 1989 (Rockwell International, 1989c), and this final Work Plan incorporates agency comments on both draft plans.

1.3.2 Physical Setting

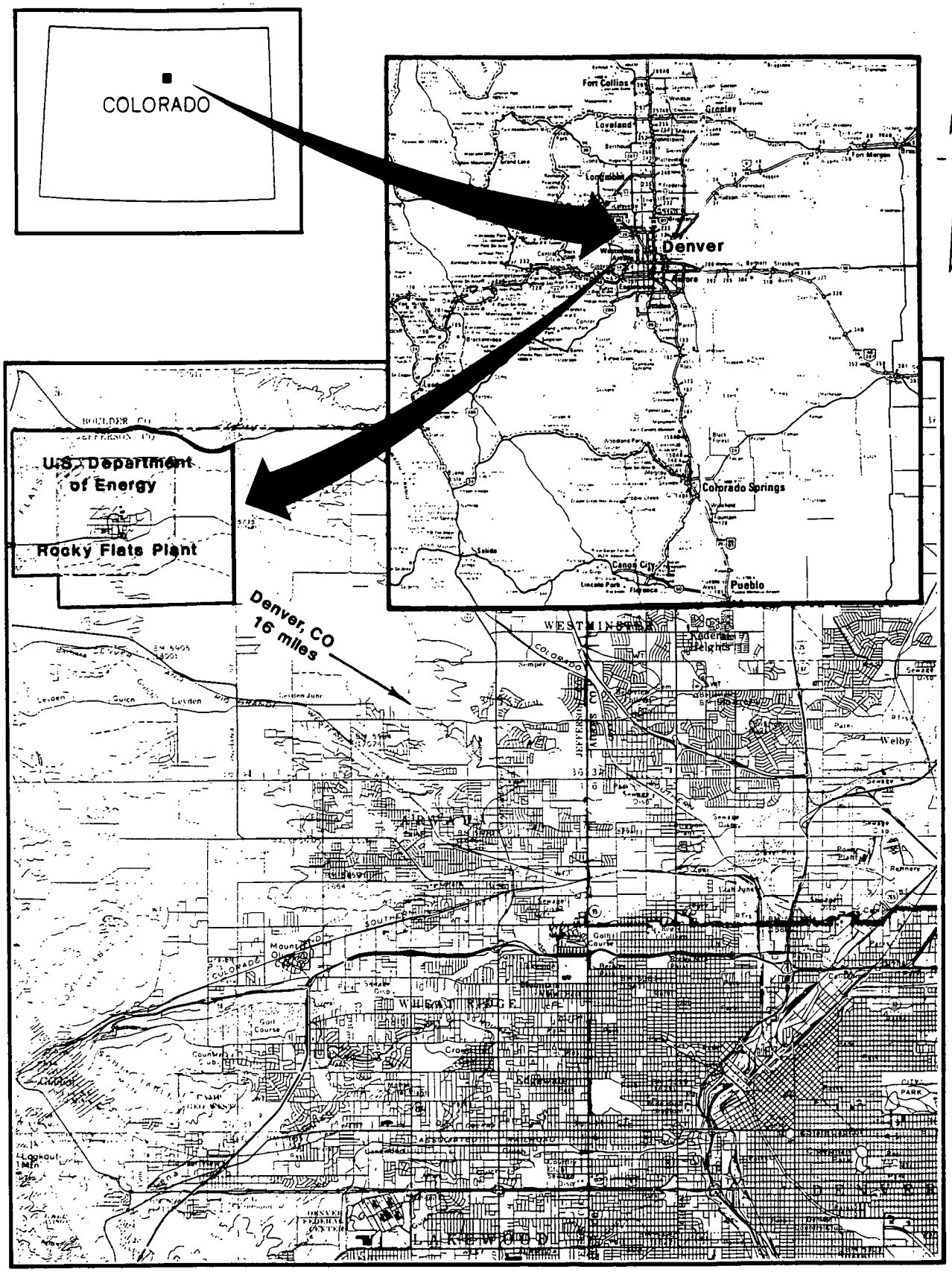
The Rocky Flats Plant is located in northern Jefferson County, Colorado, approximately 16 miles northwest of Denver (Figure 1-1). Other surrounding cities include Boulder, Westminster, and Arvada, which are located less than ten miles to the northwest, east, and southeast, respectively. The Plant consists of approximately 6,550 acres of federally owned land in Sections 1 through 4 and 9 through 15 of T2S, R70W, 6th Principal Meridian. Major buildings are located within the Plant security area of approximately 400 acres. The security area is surrounded by a buffer zone of approximately 6,150 acres (Figure 1-2).

1.3.2.1 Topography

The natural environment of the Plant and vicinity is influenced primarily by its proximity to the Front Range of the Rocky Mountains. The Plant is directly east of the north-south trending Front Range, located about 16 miles east of the Continental Divide. Rocky Flats Plant is located on a broad, eastward sloping system of coalescing alluvial fans at an elevation of approximately 6,000 feet above mean sea level. The fans extend about five miles east of the Front Range. The operational area at the Plant is located near the eastern edge of the fans on a terrace between stream-cut valleys (North Walnut Creek and Woman Creek).

1.3.2.2 Surface Water Hydrology

Three intermittent streams drain the Rocky Flats Plant with flow generally from west to east. These drainages are Rock Creek, Walnut Creek, and Woman Creek (Figure 1-2). Rock Creek drains the northwestern corner of the Plant and flows northeast through the buffer zone to its off-site confluence with Coal Creek. An east-west trending interfluve separates the Walnut and Woman Creek drainages. North and South Walnut Creeks and an unnamed tributary drain the northern portion of the Plant security area. These three forks of Walnut Creek join in the buffer zone and flow to Great Western Reservoir approximately one mile east of the



Not To Scale

Figure 1-1: Location of Rocky Flats Plant

confluence. Woman Creek drains the southern Rocky Flats Plant buffer zone flowing eastward to Standley Reservoir. The South Interceptor Ditch lies between the Plant and Woman Creek. The South Interceptor Ditch collects runoff from the southern Plant security area and diverts it to Pond C-2, where it is monitored in accordance with the Plant National Pollutant Discharge Elimination System (NPDES) permit prior to discharge to Woman Creek.

1.3.2.3 Regional and Local Hydrogeology

The stratigraphic section that pertains to Rocky Flats Plant, includes in descending order, unconsolidated surficial units (Rocky Flats Alluvium, various terrace alluviums, valley fill alluvium, and colluvium) (Figure 1-3), Arapahoe Formation, Laramie Formation, and Fox Hills Sandstone (Figure 1-4). Ground water occurs under unconfined conditions in both the surficial and shallow bedrock units. In addition, confined ground-water flow occurs in deeper bedrock sandstones.

Rocky Flats Alluvium

The Rocky Flats Alluvium underlies a large portion of the Plant. The alluvium is a broad planar deposit consisting of a topsoil layer underlain by up to 100 feet of varying amounts of silt, clay, sand, and gravel. Unconfined ground-water flow occurs in the Rocky Flats Alluvium which is relatively permeable. Recharge to the alluvium is from precipitation, snowmelt, and water losses from ditches, streams, and ponds that are cut into the alluvium. General water movement in the Rocky Flats Alluvium is from west to east and towards the drainages. Ground-water flow is also controlled by pediment drainages in the top of bedrock. The water table in the Rocky Flats Alluvium rises in response to recharge during the spring and declines during the remainder of the year. Discharge from the alluvium occurs at minor seeps in the colluvium that covers the contact between the alluvium and bedrock along the edges of the valleys. The Rocky Flats Alluvium thins east of the Plant boundary and does not directly supply water to wells located downgradient of Rocky Flats Plant.

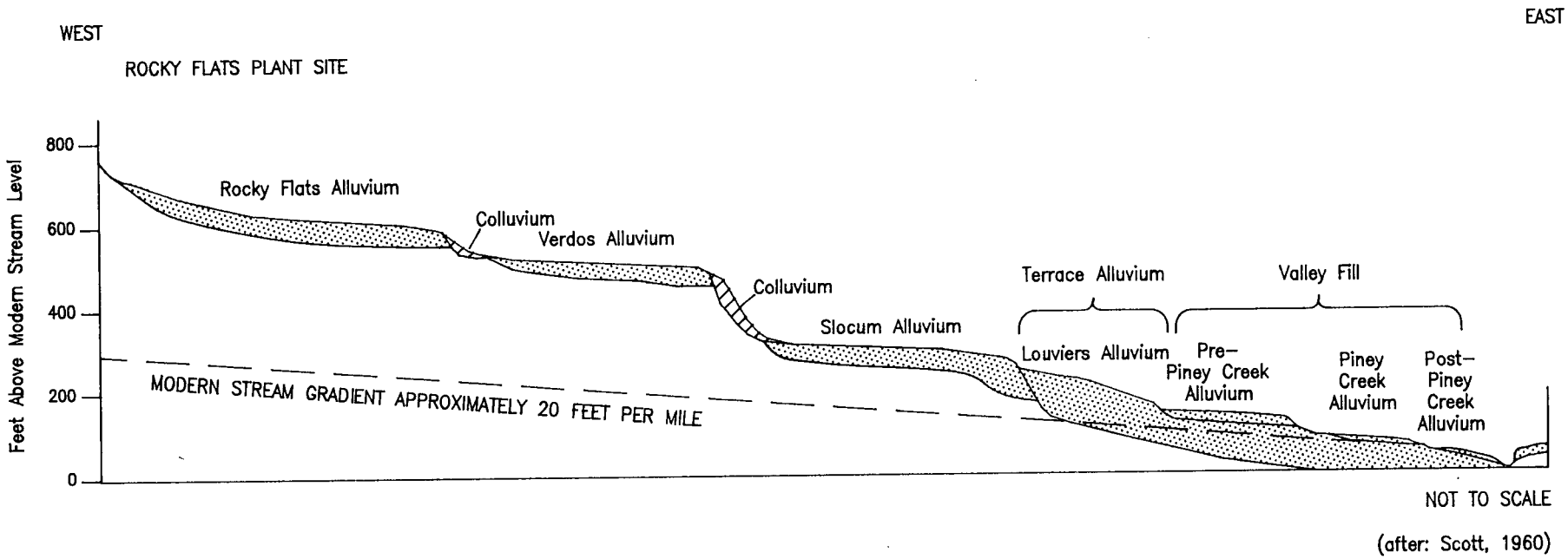
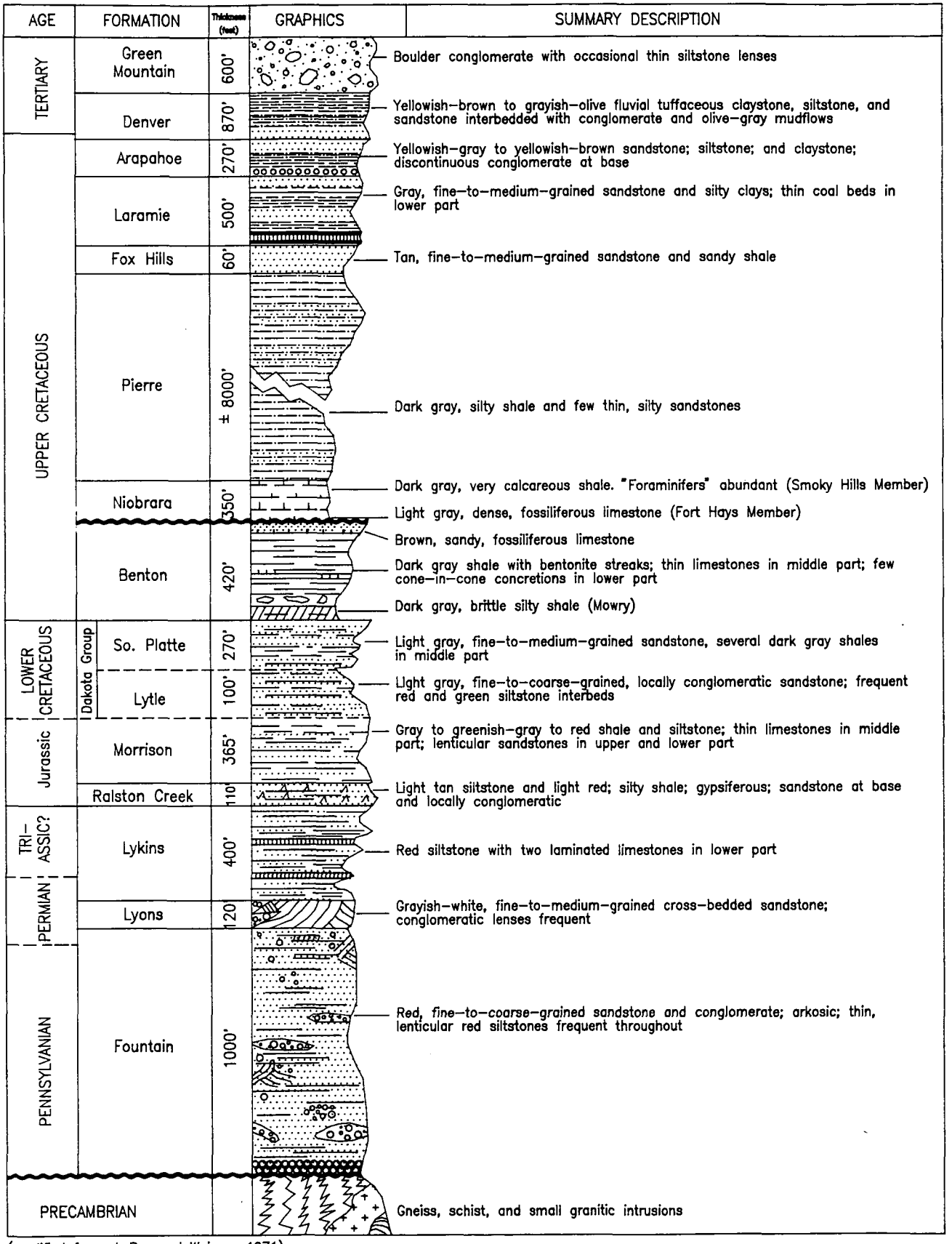


FIGURE 1-3

EROSIONAL SURFACES AND ALLUVIAL DEPOSITS
EAST OF THE FRONT RANGE, COLORADO



(modified from: LeRoy and Weimer, 1971)

FIGURE 1-4

GENERALIZED STRATIGRAPHIC SECTION

Other Alluvial Deposits

Various other alluvial deposits occur topographically below the Rocky Flats Alluvium in the Plant drainages. Colluvium (slope wash) mantles the valley side slopes between the Rocky Flats Alluvium and the valley bottoms. In addition, remnants of younger terrace deposits including the Verdos, Slocum, and Louviers Alluvia occur occasionally along the valley side slopes. Recent valley fill alluvium occurs in the active stream channels.

Unconfined ground-water flow occurs in these surficial units. Recharge is from precipitation, percolation from streams during periods of surface water runoff, and by seeps discharging from the Rocky Flats Alluvium. Discharge is by evapotranspiration and by seepage into other geologic formations and streams. The direction of ground-water flow is generally downslope through colluvial materials and then along the course of the stream in valley fill materials. During periods of high surface water flow, water is lost to bank storage in the valley fill alluvium and returns to the stream after the runoff subsides.

Arapahoe Formation

The Arapahoe Formation underlies surficial materials beneath the Plant. This formation is a fluvial deposit composed of overbank and channel deposits. It consists primarily of claystone with some sandstones beneath the Plant. Total formation thickness varies up to 270 feet (Robson et. al., 1981a), and the unit is nearly flat lying beneath the Plant (less than a two degree dip) based on the draft seismic profiling report (Rockwell International, 1989a). The sand bodies within the claystone are composed of fine-grained sands and silts, and their hydraulic conductivity is relatively low compared to the overlying Rocky Flats Alluvium. A high resolution seismic reflection survey is ongoing at the Plant to further characterize bedrock geology.

The Arapahoe Formation is recharged by ground-water movement from overlying surficial deposits and by leakage from streams. The main recharge areas are under the Rocky Flats Alluvium, although some recharge from the colluvium and valley fill alluvium likely occurs along the stream valleys. Recharge is greatest during the spring and early summer when rainfall and stream flow are at a maximum and water levels in the Rocky Flats Alluvium are high. Ground-water movement in the Arapahoe Formation is generally toward the

east; although flow within individual sandstones is not fully characterized at this time. Regionally, ground-water flow in the Arapahoe Formation is toward the South Platte River in the center of the Denver Basin (Robson et al., 1981a).

Laramie Formation and Fox Hills Sandstone

The Laramie Formation underlies the Arapahoe and is composed of two units, a thick upper claystone and a lower sandstone. The claystone is greater than 700 feet thick and is of very low hydraulic conductivity; therefore, the U.S. Geologic Survey (Hurr, 1976) concludes that Plant operations will not impact any units below the upper claystone unit of the Laramie Formation.

The lower sandstone unit of the Laramie Formation and the underlying Fox Hills Sandstone comprise a regionally important aquifer in the Denver Basin known as the Laramie-Fox Hills Aquifer. Aquifer thickness ranges from 200 to 300 feet near the center of the basin. These units subcrop west of the Plant and can be seen in clay pits excavated through the Rocky Flats Alluvium. The steeply dipping beds of these units west of the Plant (approximately a 50 degree dip) quickly flatten to the east (less than two degree dip) based on preliminary results of the high resolution seismic reflection study (Rockwell International, 1989a). Recharge to the aquifer occurs along the rather limited outcrop area exposed to surface water flow and leakage along the Front Range (Robson et al., 1981b).

1.3.2.4 Meteorology

The area surrounding the Rocky Flats Plant has a semiarid climate characteristic of much of the central Rocky Mountain region. Approximately forty percent of the 15-inch annual precipitation falls during the spring season, much of it as wet snow. Thunderstorms (June to August) account for an additional thirty percent of the annual precipitation. Autumn and winter are drier seasons, accounting for nineteen and eleven percent of the annual precipitation, respectively. Snowfall averages 85 inches per year, falling from October through May (U.S. DOE, 1980).

Special attention has been focused on dispersion meteorology surrounding the Plant due to the remote possibility that significant atmospheric releases might affect the Denver metropolitan area. Studies of air flow and dispersion characteristics (e.g., Hodgin, 1983 and 1984) indicate that drainage flows (winds coming down off the mountains to the west) turn and move toward the north and northeast along the South Platte River valley and pass to the west and north of Brighton, Colorado (U.S. DOE, 1986).

1.3.2.5 Surrounding Land Use and Population Density

The Rocky Flats Plant is located in a rural area. Approximately 50 percent of the area within ten miles of the Rocky Flats Plant is in Jefferson County. The remainder is located in Boulder County (40 percent) and Adams County (10 percent). According to the 1973 Colorado Land Use Map, 75 percent of this land was unused or was used for agriculture. Since that time, portions of this land have been converted to housing, with several new housing subdivisions being started within a few miles of the buffer zone.

A demographic study using 1980 census data shows that approximately 1.8 million people lived within 50 miles of the Rocky Flats Plant in 1980 (Rockwell International, 1987b). Approximately 9,500 people lived within five miles of the Plant in 1980. The most populous sector was to the southeast, toward the center of Denver. This sector had a 1980 population of about 555,000 people living between 10 and 50 miles from Rocky Flats. Recent population estimates registered by the Denver Regional Council of Governments (DRCOG) for the eight county Denver metro region have shown distinct patterns of growth between the first and second halves of the decade. Between 1980 and 1985, the population of the eight county region increased by 197,890, a 2.4 percent annual growth rate. Between 1985 and 1989 a population gain of 71,575 was recorded, representing a 1.0 percent annual increase (the national average). The 1989 population showed an increase of 2,225 (or 0.1 percent) from the same date in 1988 (DRCOG, 1989).

There are eight public schools, within six miles of the Rocky Flats Plant. The nearest educational facility is the Witt Elementary School, which is approximately 2.7 miles east of the Plant buffer zone. The closest hospital is Centennial Peaks Hospital located approximately seven miles northeast. The closest park and recreational area is the Standley Lake area, which is approximately five miles southeast of the Plant. Boating, picnicking, and limited overnight camping are permitted. Several other small parks exist in

communities within ten miles. The closest major park, Golden Gate Canyon State Park, located approximately 15 miles to the southwest, provides 8,400 acres of general camping and outdoor recreation. Other national and state parks are located in the mountains west of the Rocky Flats Plant, but all are more than 15 miles away.

Some of the land adjacent to the Plant is zoned for industrial development. Industrial facilities within five miles include the TOSCO laboratory (40-acre site located two miles south), the Great Western Inorganics Plant (two miles south), the Frontier Forest Products yard (two miles south), the Idealite Lightweight Aggregate Plant (2.4 miles northwest), and the Jefferson County Airport and Industrial Park (990-acre site located 4.8 miles northeast).

Several ranches are located within ten miles of the Plant, primarily in Jefferson and Boulder Counties. They are operated to produce crops, raise beef cattle, supply milk, and breed and train horses. According to the 1987 Colorado Agricultural Statistics, 20,758 acres of crops were planted in Jefferson County (total land area of approximately 475,000 acres) and 68,760 acres of crops were planted in Boulder County (total land area of 405,760 acres). Crops consisted of winter wheat, corn, barley, dry beans, sugar beets, hay, and oats. Livestock consisted of 5,314 head of cattle, 113 hogs, and 346 sheep in Jefferson County, and 19,578 head of cattle, 2,216 hogs, and 12,133 sheep in Boulder County (Post, 1989).

1.3.2.6 Ecology

A variety of vegetation thrives within the Plant boundary. Included are species of flora representative of tall grass prairie, short grass plains, lower montane, and foothill ravine regions. None of these vegetative species are on the endangered species list. It is evident that the vegetative cover along the Front Range of the Rocky Mountains has been radically altered by human activities such as burning, timber cutting, road building, and overgrazing for many years. Since the acquisition of the Rocky Flats Plant property, vegetative recovery has occurred as evidenced by the presence of disturbance sensitive grass species such as big bluestem (Andropogon gerardii) and sideoats grama (Bouteloua curtipendula). No vegetative stresses attributable to hazardous waste contamination have been identified (U.S. DOE, 1980).

The animal life inhabiting the Rocky Flats Plant and its buffer zone consists of species associated with western prairie regions. The most common large mammal is the mule deer (Odocoileus lemionus), with an estimated 100-125 permanent residents. There are a number of small carnivores, such as the coyote (Canis latrans), red fox (Vulpes fulva), striped skunk (Mephitis mephitis), and long-tailed weasel (Mustela frenata). A profusion of small herbivores can be found throughout the Plant and buffer zone consisting of species such as the pocket gopher (Thomomys sp.), white-tailed jackrabbit (Lepus tounsendii), and the meadow vole (Microtus pennsylvanicus) (U.S. DOE, 1980).

Commonly observed birds include western meadowlarks (Sturnella neglecta), horned larks (Eremophila alpestris), mourning doves (Zenaidura macroura), and vesper sparrow (Pooecetes gramineus). A variety of ducks, killdeer (Charadrius vociferus), and red-winged black birds (Agelaius phoeniceus) are seen in areas adjacent to ponds. Mallards (Anas platyrhynochos) and other ducks (Anas sp.) frequently nest and rear young on several of the ponds. Common birds of prey in the area include marsh hawks (Circus cyaneus), red-tailed hawks (Buteo jamaicensis), ferruginous hawks (Buteo regalis), rough-legged hawks (Buteo lagopus), and great horned owls (Bubo virginianus) (U.S DOE, 1980).

Bull snakes (Pituophis melanoleucus) and rattlesnakes (Crotalus sp.) are the most frequently observed reptiles. Eastern yellow-bellied racers (Coluber constrictor) have also been seen. The eastern short-horned lizard (Phrynosoma douglassi brevirostre) has been reported on the site, but these and other lizards are not commonly observed. The western painted turtle (Chrysemys picta) and the western plains garter snake (Thamnophis radix) are found in and around many of the ponds (U.S. DOE, 1980).

1.4 SITE LOCATIONS AND DESCRIPTIONS

This RFI/RIFS Work Plan addresses the 903 Pad, Mound, and East Trenches Areas located on the east side of the Rocky Flats Plant security area. Several sites are included in each area because of their physical proximity to each other. Figure 1-5 shows the locations of these areas and the sites within each area. Each site was assigned a SWMU reference number by Rockwell International (1987c).

Site descriptions presented in the following sections are taken from the Rocky Flats Plant CEARP Phase 1 Report (U.S. DOE, 1986) and the RCRA Part B Operating Permit Application (Rockwell International, 1987c). These descriptions are based on historical records, aerial photography review, and interviews with Plant personnel. Further characterization of each site based on other historical reports is also included in the following discussions.

1.4.1 903 Pad Area

Five sites are located within the 903 Pad Area (Figure 1-5). These sites are:

- 903 Drum Storage Site (SWMU Ref. No. 112);
- 903 Lip Site (SWMU Ref. No. 155);
- Trench T-2 Site (SWMU Ref. No. 109);
- Reactive Metal Destruction Site (SWMU Ref. No. 140); and
- Gas Detoxification Site (SWMU Ref. No. 183).

Descriptions of each site within the 903 Pad Area are provided in the following sections.

1.4.1.1 903 Drum Storage Site (SWMU Ref. No. 112)

The 903 Drum Storage Site is located in the eastern portion of the Plant security zone. This area was used from October 1958 to January 1967 for storage of radioactively contaminated oil drums (Calkins, 1970). Presented below is a description of drums stored at the drum storage site from Calkins (1970).

> "Most of the drums transferred to the field were nominal 55-gallon drums, but a significant number were 30-gallon drums. Not all were completely full. Approximately three-fourths of the drums were plutonium-contaminated, while most of the balance contained uranium. Of those containing plutonium, most were lathe coolant consisting of a straight-chain hydrocarbon mineral oil (Shell Vitrea) and carbon tetrachloride in varying proportions. Other liquids were involved, however, including hydraulic oils, vacuum pump oil, trichloroethylene, perchloroethylene, silicone oils, acetone still bottoms, etc. Originally, contents of the drums were indicated on the outside, but these markings were made illegible through weathering and no other good records were kept of the contents. Leakage of the oil was recognized early, and in 1959 or possibly earlier ethanolamine was added to the oil to reduce the corrosion rate of the steel drums."

Drum leakage was noted at the 903 Drum Storage Site in 1964 during routine drum handling operations (Dow Chemical, 1971). Corrective action consisted of transferring the contents of leaking drums to new drums and fencing the area to restrict access (Dow Chemical, 1971). Approximately 420 drums leaked to some degree, and of these, an estimated 50 leaked their entire contents (Dow Chemical, 1971). An estimated 5,000 gallons of liquid (Freiberg, 1970) containing 86 grams (g) [5.3 curies (Ci)] of plutonium leaked into the soil (Dow Chemical, 1971). A heavy rainstorm in 1967 spread contaminants to a ditch south and southeast of the drum storage site (Dow Chemical, 1971); however, the location of the ditch is not provided by this reference.

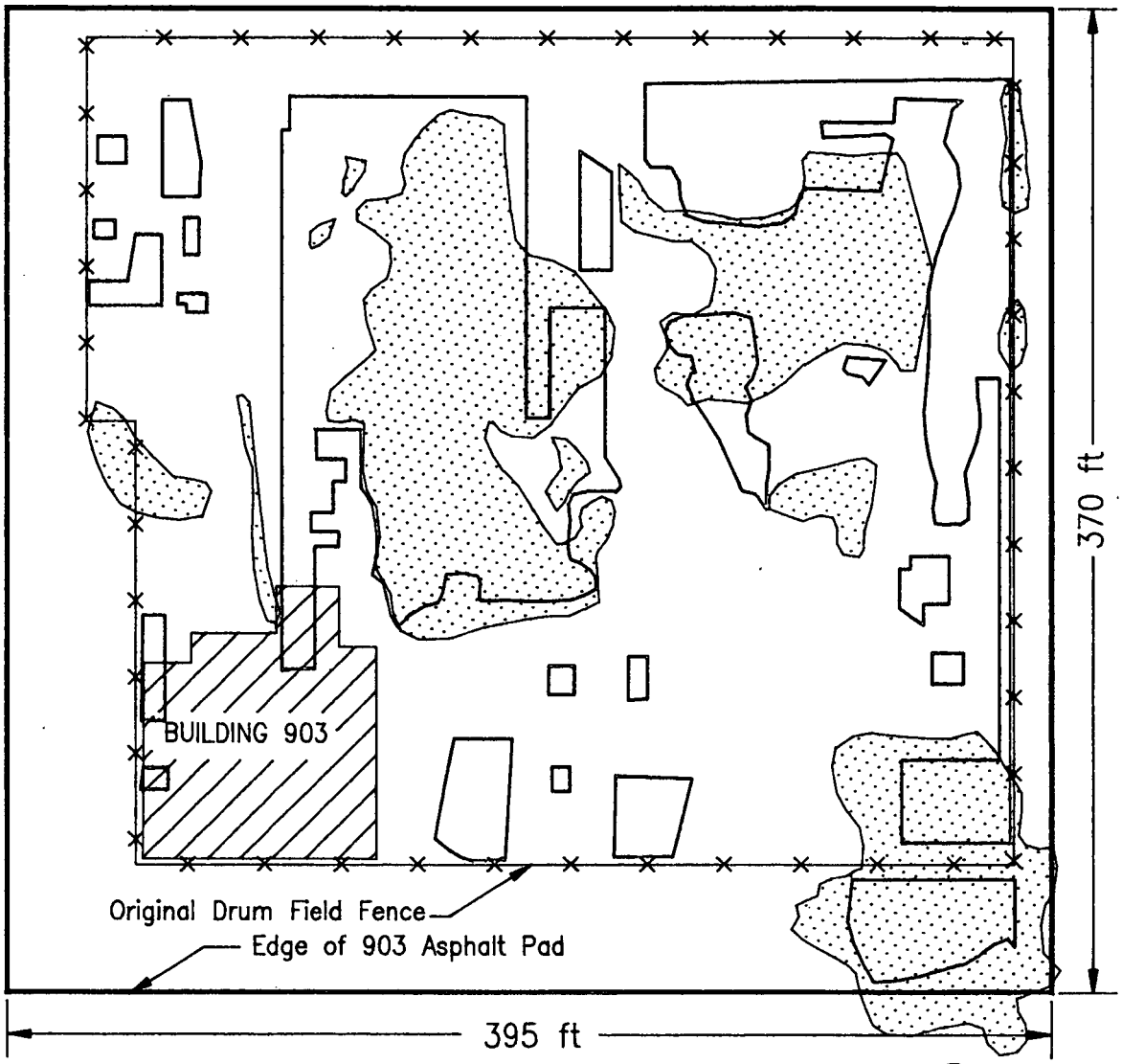
Figure 1-6 outlines drum locations and soil staining at the 903 Drum Storage Site based on a review of historical aerial photography. As seen on this figure, drum storage occurred primarily in the northern and eastern portions of the area. Drums were not stored in the southwest portion where Building 903 was constructed in 1967 and were only briefly stored at the southeast corner. It appears that the drums stored south of the fenced area were placed at this location during clean-up operations, as they appear only in the 1968 aerial photos.

The shipment of drums to the 903 Drum Storage Site ended in January 1967 when drum removal efforts began. Removal of all drums and wastes was completed in June 1968. Presented below is a chronology of the 903 Drum Storage Site clean up as described by Freiberg (1970).

- "From January 23, 1967, through March 10, 1967, uranium oil drums which were in good condition were transferred to Building 774 and processed.
- Building 903 . . . on March 10, 1967, started processing oil drums. This building was designed to prefilter the oil prior to transferring plutonium contaminated oil to Building 774 for final processing.
- From March 10, 1967 through May 18, 1967, there were a total of 191 drums of plutonium contaminated oil filtered and shipped to Building 774.
- On May 18, 1967, operations at Building 903 were discontinued due to the amount of time this process was taking.
- Drum-to-drum transfer in the field began May 18, 1967, and the drums were [SIC] shipped to Building 774 without prior filtration in Building 903.
- From March 17, 1967 through May 10, 1967, in addition to the plutonium transfers, there were 297 drums of uranium contaminated Alk-Tri waste shipped to Building 774 and processed.
- May 10, 1967 through May 28, 1968, a total of 4,826 drums containing 50 gallons of oil each were sent to Building 774 and processed.

FIGURE 1-6

APPROXIMATE LOCATIONS OF DRUM STORAGE
903 PAD DRUM STORAGE SITE



EXPLANATION

AREA OF SOIL STAINING BASED ON AERIAL PHOTOGRAPHS FROM: 4/29/67, 4/10/68, 5/24/69.

BARREL STORAGE LOCATIONS BASED ON AERIAL PHOTOGRAPHS FROM: 5/5/63, 4/29/65, 4/29/67, 9/10/68.

NOTE: BUILDING 903 LOCATION BASED ON AERIAL PHOTOGRAPHS FROM 4/10/68.

- In addition to the oil storage area drums, there were a total of 650 drums from Building 776 current generation sent to Building 774 for processing. A pipeline installed from Building 776 to Building 774 eliminated this additional oil drum generation.

- During the transfer operations, it was noted that at the bottom of all drums a deposit of sludge remained after removal of the oil. this sludge varied in depth from 1/2 inch to 3 inches and averaged approximately 1 inch. By drum counter results the sludge within the empty drums contained a total of 5,152 grams of plutonium. These empty drums were later disposed of by adding Oil Dry and MicroCel to absorb the sludge. The drums containing the plutonium sludge and absorbent were then incased in plastic, placed in boxes, and shipped to the burial grounds." [The location of the burial grounds is not provided by Freiberg (1970)]

There were originally a total of 5,237 drums at the drum storage site when clean-up operations began in 1967. After transfer of the contents to new drums, 4,826 drums were transported to Building 774 of which 3,572 drums contained plutonium contaminated oil. This leaves the contents of 411 drums unaccounted for. The most probable explanation for this discrepancy according to Freiberg (1970) is a combination of the following factors:

1. All of the drums originally sent to the storage site were not completely full;
2. Some of the volume was taken up by the sludge which was discarded with the empty barrels; and
3. Leakage out of the barrels and onto the ground occurred.

Information provided by Freiberg (1970) indicates that an estimated 5,000 gallons of oil leaked from drums onto the ground at the drum storage site. This estimate was based on the memory and knowledge of those involved in site operations (Frieberg, 1970). Based on oil samples taken from barrels, the average plutonium concentration was 4.54×10^{-3} grams per liter (g/l) [280 pico Curies/liter (pCi/l)]. Thus, approximately 86 g (5.3 Ci) of plutonium were released to soils at the drum storage site (Frieberg, 1970).

In November 1968, site grading began at the 903 Drum Storage Site in preparation for applying an asphalt cap over the area. This work included moving "slightly" contaminated soil from around the fenced area to inside the fenced area (Freiberg, 1970). A total of 33 drums of radioactively contaminated rocks were removed from the area in May 1969, and two courses of clean fill material were placed over the site during the

late summer of 1969. The asphalt was applied in October 1969, and in February 1970 additional road base course material was applied to soils directly east and south of the asphalt pad due to soil contamination (Freiberg, 1970).

The asphalt containment cover is rectangular and oriented north-south (370 feet) and east-west (395 feet). The pad dips slightly to the northeast at a drop of one foot per 100 feet. The asphalt cover is approximately eight centimeters (cm) (3.2 inches) thick and it is underlain by approximately fifteen cm (six inches) of loose gravel and eight cm of fill dirt (Navratil et. al, 1979).

1.4.1.2 903 Lip Site (SWMU Ref. No. 155)

During drum removal and clean-up activities associated with the 903 Drum Storage Site, winds redistributed plutonium beyond the pad to the south and east. An estimated one Ci (16.3 g) of plutonium was redistributed beyond the asphalt pad, and of that one Ci, approximately 0.56 Ci (9.1 g) is believed to have been deposited in the 903 Lip Site (Barker, 1982). The most contaminated area was immediately adjacent to the pad to the south and southeast. Surveys at the time of the drum removal project and subsequent annual soil sampling from 1969 to 1972 showed a maximum plutonium concentration of 2,258 pico Curies per gram (pCi/g) [5,680 disintegrations per minute per gram (dpm/g)] in the top five cm (two inches) of soil at the 903 Lip Site (Barker, 1982).

Soil clean-up efforts were undertaken in 1976, 1978, and 1984 to remove plutonium contaminated soils from three different areas within the 903 Lip Site. The 1976 soil removal operation began in June 1976 and ended in September 1976. This clean up consisted of hand-excavating contaminated soils from an area in the vicinity of the Reactive Metal Destruction Site until soil contamination levels were below the detection limit of the Field Instrument for Detection of Low Energy Radiation (FIDLER). The detection limit of the FIDLER is 250 counts per minute (cpm). The FIDLER "counts" are an instrument dependent measure of surface activity and cannot be converted to plutonium concentration in the soil. The excavated area was covered with clean top soil and reseeded with native grasses. Thirty-five boxes weighing a total of 125,000 pounds were removed and shipped off site for disposal during the 1976 cleanup (Barker, 1982). The off-site disposal location was not provided by Barker (1982).

The 1976 soil removal technique hand-excavation was inefficient considering the large amount of contaminated soils requiring removal at the 903 Lip Site. In June 1978, a second soil removal project began north of the 1976 removal using a front end loader alone or in conjunction with a bull dozer. All soil that exceeded 2,000 cpm, as determined by a FIDLER survey, was removed. Cleaned areas were resurveyed and soil removal continued until background readings (approximately 250 cpm by a FIDLER survey) were obtained. Topsoil was then applied to the excavated area, and the site was revegetated with native grasses. During the 1978 soil removal, 1448 boxes weighing approximately 4.7 million pounds were removed and shipped off-site (Barker, 1982). The off-site disposal location was not provided by Barker (1982).

Approximately 0.5 Ci (8.2 g) of plutonium were removed from the 903 Lip Site during the two soil removal projects. This quantity is based on an average soil plutonium concentration of 545 pCi/g (1,200 dpm/g) and a soil density of one gram per cubic centimeter ($g/cm^{3)}$ (Barker, 1982).

A third soil clean up was performed along the eastern edge of the 903 Lip Site in 1984. A total of 214 tri-wall pallets of contaminated soil were removed from the area. The excavated area was backfilled with clean topsoil (Setlock, 1984).

1.4.1.3 Trench T-2 Site (SWMU Ref. No. 109)

Trench T-2 is located south of the 903 Drum Storage Site and west of the Reactive Metal Destruction Site within the 900 Area. This trench was used prior to 1968 for the disposal of sanitary sewage sludge and flattened drums contaminated with uranium and plutonium. This trench is believed to measure approximately 15 feet wide by 200 feet long by 5 feet deep (Rockwell International, 1987c). Barrels were noted in the western end of Trench T-2 during 1987 investigations (Figure 1-5).

1.4.1.4 Reactive Metal Destruction Site (SWMU Ref. No. 140)

The Reactive Metal Destruction Site is located on the hillside south of the 903 Drum Storage Site. This site was used during the 1950s and 1960s primarily for the destruction of lithium metal (U.S. DOE, 1986).

Approximately 400 to 500 pounds of metallic lithium were destroyed on the ground surface in this area and the residues, primarily nontoxic lithium carbonate, buried (Illsley, 1978). Smaller unknown quantities of sodium, calcium, and magnesium, solvents, and unknown liquids were also destroyed at this location (Illsley, 1978).

Based on review of historical aerial photography, the Reactive Metal Destruction Site was used from 1968 to 1971. Barrels were noted in the southwestern corner of SWMU 140 during 1987 investigations (Figure 1-5).

1.4.1.5 Gas Detoxification Site (SWMU Ref. No. 183)

Building 952, located south of the 903 Drum Storage Site, was used to detoxify various gases from lecture bottles between June 1982 and August 1983. The lecture bottles held approximately one liter of compressed gas each. The gases consisted of various types of nitrogen oxides, chlorine, hydrogen sulfide, sulfur tetrafluoride, methane, hydrogen fluoride, and ammonia which were used in Plant research and development work. Gas detoxification was accomplished by using various commercial neutralization processes available at the time. After neutralization, glassware used in the process was triple-rinsed, crushed, and deposited in the present landfill. The neutralized gases released to the environment during detoxification would no longer be detectable (Rockwell International, 1987c).

1.4.2 Mound Area

The Mound Area is composed of four sites (Figure 1-5). These are:

- Mound Site (SWMU Ref. No. 113);
- Trench T-1 Site (SWMU Ref. No. 108);
- Oil Burn Pit No. 2 Site (SWMU Ref. No. 153); and
- Pallet Burn Site (SWMU Ref. No. 154).

These sites are described individually below.

1.4.2.1 Mound Site (SWMU Ref. No. 113)

The Mound Site, located north of Central Avenue in the eastern Plant security area was used between April 1954 and September 1958 for drum disposal. Approximately 1,405 drums containing primarily depleted uranium and beryllium contaminated lathe coolant (a mixture of about 70% hydraulic oil and 30% carbon tetrachloride) were placed at the Mound Site (Rockwell International, 1987c). [Records do not indicate that the barrels were actually buried (Calkins, 1970).] It is likely that some of the coolant also contained enriched uranium and plutonium (Rockwell International, 1987c). Some drums also contained Perclene (Smith, 1975). Perclene was a brand name of tetrachloroethene (PCE) (Sax and Lewis, 1987). Some of the drummed wastes placed in the Mound Site were in solid form (Rockwell International, 1987c).

Clean up of the Mound Site was accomplished in May 1970, and the materials removed were packaged and shipped to an off-site DOE facility for disposal. Listed below is an inventory of the 1,405 drums removed from the Mound Site in 1970 (Dow Chemical, 1971).

No. of Drums	Contents
903	30-gallon drums of depleted uranium solid waste;
21	30-gallon drums of depleted uranium oil waste;
12	30-gallon drums of plutonium contaminated oil waste. "The plutonium content was so low that it was measurable only by the most sensitive laboratory techniques."
102	55-gallon drums of depleted uranium solid waste;
282	55-gallon drums of depleted uranium oil waste; and
85	55-gallon drums of enriched uranium oil waste.
1,405	TOTAL DRUMS

Subsequent surficial soil sampling in the vicinity of the excavated Mound Site indicated 0.8 to 112.5 dpm/g (0.4 to 51 pCi/g) activity. This radioactive contamination is thought to have come from the 903 Drum Storage Site via wind dispersion rather than from the Mound Site, as it was limited to the surface (Rockwell International, 1987c).

1.4.2.2 Trench T-1 Site (SWMU Ref. No. 108)

The trench was used from 1954 until 1962 and contains approximately 125 drums filled with approximately 25,000 kilograms (kg) (55,115 pounds) of depleted uranium chips (Dow Chemical, 1971) and plutonium chips coated with small amount of lathe coolant (Rockwell International, 1987c). The estimated dimensions of Trench T-1 are 15 feet wide by 200 feet long by 5 feet deep (Rockwell International, 1987c). Trench T-1 was covered with about two feet of soil, and the corners were marked (Rockwell International, 1987c).

Weed cutting activities in October and November 1968 unearthed two drums inadequately covered with fill material. Both drums were sampled and analyzed for total plutonium and uranium content before they were disposed off-site (Illsley, 1983). The off-site disposal location was not provided by Illsley (1983). One of the drums sampled contained an oil-water mixture with 55 pCi/l of plutonium and 2.3×10^5 pCi/l of uranium. The other drum contained an oily sludge with 4.6 pCi/g of plutonium and 1.2×10^6 pCi/g uranium (Illsley, 1983).

1.4.2.3 Oil Burn Pit No. 2 Site (SWMU Ref. No. 153)

Oil Burn Pit No. 2 is actually two parallel trenches which were used in 1957 and from 1961 to 1965 to burn approximately 1,082 drums of oil containing uranium (Rockwell International, 1987c). In March and April of 1957, the contents of an estimated 169 uranium contaminated waste oil drums were burned. No further burning took place until 1961. Frequent burning of waste oil took place from June 1961 to May 1965. The contents of approximately 914 drums were burned during this time. The drums used for the oil burning operations were generally reused; however, 300 empty drums were discarded by flattening and burying them in the burning pits (Dow Chemical, 1971). The uranium concentrations of the burned waste oil is unknown. The residues from the burning operations and the flattened drums were covered with backfill. In 1978 the area was excavated to a depth of approximately five feet and 239 boxes (56 cubic feet per box) of contaminated soil were removed and shipped off-site to an authorized DOE disposal site (Illsley, 1983). The off-site disposal location was not provided by Illsley (1983).

1.4.2.4 Pallet Burn Site (SWMU Ref. No. 154)

An area southwest of Oil Burn Pit No. 2 was reportedly used to destroy wooden pallets in 1965. The types of hazardous substances or radionuclides that may have been spilled on these pallets is unknown. This site was cleaned up and reclaimed in the 1970s (U.S. DOE, 1986). Two locations for the Pallet Burn site are shown on Figure 1-5. The westernmost location was reported by Owen and Steward (1973). However, based on review of historical aerial photographs, there was no disturbance at this western location. The eastern location was identified from 1963 and 1965 aerial photography of the area.

1.4.3 East Trenches Area

The East Trenches Area consists of nine burial trenches and two spray irrigation sites. These sites are:

- Trench T-3 (SWMU Ref. No. 110)
- Trench T-4 (SWMU Ref. No. 111.1)
- Trench T-5 (SWMU Ref. No. 111.2)
- Trench T-6 (SWMU Ref. No. 111.3)
- Trench T-7 (SWMU Ref. No. 111.4)
- Trench T-8 (SWMU Ref. No. 111.5)
- Trench T-9 (SWMU Ref. No. 111.6)
- Trench T-10 (SWMU Ref. No. 111.7)
- Trench T-11 (SWMU Ref. No. 111.8)
- East Spray Irrigation Sites (SWMU Ref. Nos. 216.2 and 216.3)

Trenches T-3, T-4, T-10, and T-11 are located north of the east access road, and Trenches T-5 through T-9 are south of the east access road. The wastes in these trenches have not been disturbed since their burial. The spray irrigation areas are located east of Trenches T-5 through T-9 (Figure 1-5).

1.4.3.1 Trenches T-3 through T-11 (SWMU Ref. Nos. 110 and 111.1-111.8)

These trenches as well as Trench T-2 were used from 1954 to 1968 for disposal of approximately 125,000 kg of sanitary sewage sludge contaminated with uranium and plutonium and approximately 300 flattened empty drums contaminated with uranium (Illsley, 1983). Radiation content of the sewage sludge ranged from 8.4×10^5 dpm/kg (382 pCi/g) to 7.9×10^6 dpm/kg (3,590 pCi/g) (Owen and Steward, 1973). "Earlier pits involve mostly uranium with an increasing plutonium fraction in later pits." (Owen and Steward, 1973). Total alpha radioactivity in Trenches T-2 to T-8 is estimated to be 100 to 150 millicuries (0.1 to 0.15 Ci) (Dow Chemical, 1971). Trenches T-4 and T-11 also contains some plutonium and uranium contaminated asphalt planking from the solar evaporation ponds (Illsley, 1983).

According to Illsley (1983), samples were collected from Trenches T-9, T-10, and T-11, and the results were as follows:

> "Samples from T-11 contained plutonium in the range from 4.5 to 50 pCi/g and uranium-238 in the range between 0.9 and 158 pCi/g. Trench T-10 was found to contain uranium in the range between 40 and 126 pCi/g and Pu-239 in the range from 0.18 to 14 pCi/g. . . . Plutonium concentrations in collected samples varied from 0.40 to 68 pCi/g and uranium was found in the range between 2.4 and 450 pCi/g" in Trench T-9."

The sampling dates and collection methods of these samples are unknown.

1.4.3.2 East Spray Irrigation Sites (SWMU Ref. Nos. 216.2 and 216.3)

SWMU numbers 216.2 and 216.3 were used for spray irrigation of sewage treatment plant effluent. These areas have been designated as SWMUs because effluent containing low concentrations of chromium was inadvertently sprayed in the area in February and March 1989. The chromium entered the sanitary sewage treatment plant on February 23, 1989 subsequent to a spill of chromic acid in Building 444 (Rockwell International, 1989d).

2.0 PHASE I SITE EVALUATION

2.1 PHASE I REMEDIAL INVESTIGATION

The Phase I RI consisted of the following field activities:

1) Electromagnetic, resistivity, and magnetometer geophysical surveys;
2) A soil gas survey;
3) Soil sample collection from 33 boreholes (Figure 2-1);
4) Completion of 10 alluvial and 14 bedrock monitoring wells (Figure 2-1);
5) Ground-water sampling of new and previously existing wells;
6) Slug testing of 13 wells;
7) Packer testing of cored bedrock wells;
8) Collection of 22 surface water and seep samples; and
9) Air monitoring for total long lived alpha, plutonium, and volatile organics during field activities.

In addition to the Phase I investigation at the 903 Pad, Mound, and East Trenches Areas, several monitor wells were installed in these areas as part of a Plant-wide hydrogeologic investigation in 1986 (Rockwell International, 1986e). Surface water, soil, and air samples have also been collected at these areas as part of various investigations. Section 2.2 presents results of the Phase I RI and a brief characterization of each pathway at the 903 Pad, Mound, and East Trenches Areas. The nature and extent of contamination associated with these pathways is discussed in Section 2.3.

2.2 SITE CONCEPTUAL MODEL

A site-specific conceptual model of the 903 Pad, Mound, and East Trenches Areas has been developed based on the Phase I RI results as well as previous and subsequent investigations. This model describes contaminant sources and pathways through which contaminant transport may occur from these areas.

2.2.1 Geology

2.2.1.1 Surficial Geology

Surficial materials at the 903 Pad, Mound, and East Trenches Areas consist of the Rocky Flats Alluvium, colluvium, and valley fill alluvium unconformably overlying bedrock (Figure 2-2). The area is situated on a terrace of Rocky Flats Alluvium which extends eastward from the Plant. The Rocky Flats Alluvium consists of a poorly to moderately sorted, poorly stratified, deposit of clays, silts, sands, gravels, and cobbles. A portion of the 903 Pad Area extends south off the terrace toward the South Interceptor Ditch. Colluvium is present on the hillside south of the 903 Pad and East Trenches Areas and on the hillside north of the Mound Area. Valley fill alluvium is present in the drainage of Woman Creek south of the 903 Pad and East Trenches Areas and in the South Walnut Creek drainage north of the Mound Area.

Buried valleys and ridges eroded into the top of bedrock are present at the base of the Rocky Flats Alluvium (Figure 2-3). One such paleovalley is located north of the 903 Pad Area along Central Avenue. It trends east beneath the east access road and bends to the southeast just south of well 33-87. A paleoridge is located east of well 15-87 south of the paleovalley, and another paleoridge occurs beneath the northern edge of the pediment margin east of the Mound Area and north of the East Trenches (well 35-87).

2.2.1.2 Bedrock Geology

The Cretaceous Arapahoe Formation underlies surficial materials at the 903 Pad, Mound, and East Trenches Areas. Preliminary results of an ongoing high resolution seismic reflection program indicate that this formation dips at less than two degrees toward the east (Rockwell International, 1989a). The Arapahoe Formation which is approximately 250 feet thick consists of fluvial claystones with interbedded lenticular sandstones, siltstones, and occasional lignite deposits. Contacts between these lithologies are both gradational and sharp.

The Arapahoe Formation was deposited by meandering streams which flowed east-southeast from the Front Range Uplift (Weimer, 1973). The fining upward sandstone sequences within the formation are representative of both laterally accreted point bar deposits and floodplain splay deposits. Laterally accreted point bar deposits occur by the slow migration of fluvial channels, and splay deposits are formed by breaching of channel banks during floods (Blatt et al., 1980). Overbank flood deposits consist of very fine sand and mud deposited near the stream channel or on the stream flood plain. Channel fill deposits are formed in abandoned channels by a reduction in stream discharge or by cutoff of a meander (formation of oxbow lakes) (Blatt et al., 1980).

Based on current investigations by EG&G, bedrock in the 903 Pad, Mound, and East Trenches Areas is predominantly claystone. However, six channel sandstone intervals have been preliminarily identified beneath the Rocky Flats Plant. They have been sequentially numbered with increasing depth. Arapahoe Sandstone Number 1, the uppermost sandstone, is moderately to well sorted, very fine to fine grained and has a low sandstone to claystone ratio. This is indicative of deposition by a meandering stream flowing under a very low gradient. Arapahoe Sandstones Numbers 2 through 5 are successively deeper sandstones which are very fine to medium grained and poorly to moderately sorted. These channel sandstones indicate deposition by slightly meandering streams flowing under moderate gradients. The basal sandstone at the Arapahoe Formation, Arapahoe Sandstone Number 6, is coarse grained and poorly sorted and has a high ratio of sandstone and conglomerate to claystone. This is indicative of deposition by a braided stream moving under a relatively steep gradient. Subcropping sandstones based on previous drilling programs are identified in Figure 2-4. Also shown in this figure are projected sandstone channels for Arapahoe Sandstones Numbers 1, 3, and 4. Arapahoe Sandstone Numbers 2 and 5 do not occur beneath the 903 Pad, Mound, and East Trenches Areas, and Sandstone Number 6 is not shown, because it does not subcrop within this area.

Current knowledge of sandstone location and extent is based upon borehole logs. A program to profile the Arapahoe Formation through high resolution seismic reflection is now in progress to better characterize bedrock sandstones. Upon completion of this program and review of its results, the site conceptual model of bedrock geology will be revised, and a Phase III RFI/RIFS Work Plan will be prepared.

2.2.2 Hydrogeology

Unconfined ground-water flow occurs in surficial materials and subcropping sandstones. In addition, subcropping claystone may be saturated in some locations. Confined ground-water flow occurs in deeper sandstone units.

2.2.2.1 Unconfined Flow System

Recharge/Discharge Conditions

Ground water is present in the Rocky Flats Alluvium, colluvium, valley fill alluvium, and subcropping sandstones under unconfined conditions. Recharge to the water table occurs as infiltration of incident precipitation and as seepage from ditches and creeks. In addition, retention ponds along South Walnut Creek and Woman Creek probably recharge the valley fill alluvium.

The shallow ground-water flow system is quite dynamic, with large water level changes occurring in response to precipitation events and stream and ditch flow. Alluvial water levels are highest during the spring and early summer months of May and June. Water levels decline during late summer and fall, and some wells go dry at this time of year.

Alluvial ground water discharges to seeps, surface water drainages, colluvium, and subcropping Arapahoe sandstone at the 903 Pad, Mound, and East Trenches Areas. Seeps occur along the edge of the pediment margin (at the alluvium/bedrock contact) and on the hillside slopes. Seeps on the hillsides may be due to thinning of colluvial materials. Ground water in valley fill materials discharges to Woman or South Walnut Creeks.

Ground-water Flow Directions

Ground-water flow in the unconfined system is generally from west to east. Figure 2-5 presents the unconfined potentiometric surface measured in April 1988 and represents the most extensive area of saturation at Operable Unit No. 2 since the Phase I RI. Shown on this figure are water level data for wells completed in both surficial materials and subcropping sandstones which exhibit unconfined conditions. Ground-water flow within the Rocky Flats Alluvium is generally east-northeast in the area generally following topography. Ground water flowing toward the pediment edges emerges as seeps at the contact between the alluvium and claystone bedrock (contact seeps), is consumed by evapotranspiration, or flows through colluvial materials following topography toward the valley fill alluvium. Once ground water reaches the valley fill alluvium, it either flows down-valley in the alluvium, is consumed by evapotranspiration, or discharges to the creek. During the driest periods of the year, evapotranspiration consumes so much water that there is no flow in either the colluvium or the valley fill alluvium. Wells completed in these areas are dry during some portion of the year.

Ground-Water Flow Rates

Hydraulic conductivity values were developed for surficial materials from drawdown-recovery tests performed on 1986 wells during the initial site characterization (Rockwell International, 1986e) and from slug tests performed on select 1986 and 1987 wells during the 1987 Phase I RI.

For the Rocky Flats Alluvium, hydraulic conductivities for all tests ranged from 4×10^{-5} centimeters per second (cm/s) at well 39-86 to 5×10^{-2} cm/s at well 42-86. The geometric mean hydraulic conductivity for all tests was 4×10^{-4} cm/s. Based on an average horizontal gradient of 0.02 feet/foot (ft/ft) at the 903 Pad, Mound and East Trenches Areas, an assumed effective porosity of 0.1, and a mean hydraulic conductivity of 4×10^{-4} cm/s, the average ground-water velocity in the Rocky Flats Alluvium is 85 feet per year (ft/yr) (Rockwell International, 1987a). Based on the ranges of hydraulic conductivity values, ground water flow velocity ranges from 8 ft/yr to 10,300 ft/yr.

The geometric mean hydraulic conductivity based on drawdown-recovery tests for the Woman Creek valley fill alluvium is 7×10^{-4} cm/s, and the range is from 5×10^{-5} cm/s at well 68-86 to 3×10^{-3} cm/s at well 65-86. No slug tests were performed on wells completed in Woman Creek valley fill. Using an average horizontal gradient of 0.02 ft/ft, an assumed effective porosity of 0.1, and a mean hydraulic conductivity of 7×10^{-4} cm/s, the average ground-water velocity in Woman Creek valley fill is 145 ft/yr (Rockwell International, 1987a). Ground-water flow velocity ranges from 10 to 620 ft/yr based on the range of hydraulic conductivity values.

South Walnut Creek valley fill is less conductive than that along Woman Creek based on lithologic descriptions and hydraulic conductivity tests of well 35-86. A drawdown-recovery test and a slug test have been performed in well 35-86. The hydraulic conductivity of South Walnut Creek Alluvium calculated from the drawdown-recovery test was 9×10^{-5} cm/s. Results of the slug test indicated a hydraulic conductivity of 1×10^{-4} cm/s. Using the mean conductivity of 9.5×10^{-5} cm/s, an effective porosity of 0.1, and an average gradient of 0.02 ft/ft, the average flow velocity in South Walnut Creek valley fill is 20 ft/yr (Rockwell International, 1987a).

The average ground-water flow velocities calculated for various surficial materials assume the materials are fully saturated year-round. However, as discussed above, portions of the Rocky Flats Alluvium, colluvium, and valley fill alluviums are not saturated during the entire year. Based on water level data from the area, alluvial wells are dry approximately three months during the year (generally August through October). Thus, ground-water flow occurs only nine months of the year. This results in reduced average ground-water movement in all alluvial materials (approximately 65 ft/yr in Rocky Flats Alluvium, 110 ft/yr in Woman Creek valley fill alluvium, and 15 ft/yr in South Walnut Creek valley fill alluvium.

2.2.2.2 Confined Ground-Water Flow System

The greatest potential for ground-water flow in the Arapahoe Formation occurs in the sandstones contained within the claystones. Ground-water recharge to sandstones occurs as infiltration from alluvial ground water where sandstones subcrop beneath the alluvium and by leakage from claystones overlying the sandstones.

Flow within individual sandstones is assumed to be from west to east but the geometry of the ground-water flow path in the bedrock is not fully understood at this time due to its dependence upon the continuity of the sandstones and their hydraulic interconnection. Evaluation of the lateral extent and degree of interconnection of the sandstone units is a primary goal of an ongoing program of profiling the Arapahoe Formation through high resolution seismic reflection studies.

2.2.3 Surface Water Hydrology

2.2.3.1 South Walnut Creek

The headwaters of South Walnut Creek were filled during construction of Plant facilities. Most upstream flow begins as flow from a buried culvert located west of Building 991 (See Figure 1-5). This flow is routed beneath Building 991 in a corrugated metal pipe. The discharge from the corrugated metal pipe is augmented by flow from a concrete pipe at a point due north of the Mound Area. The flow from the concrete pipe apparently originates as seepage from the hillside south of Building 991 and flows into a ditch along the slope. The combined flows, typically less than 10 gallons per minute (gpm) based on flow data from the first three quarters of 1989, then enter the South Walnut Creek retention pond system. Below the retention ponds, South Walnut Creek joins North Walnut Creek and an unnamed tributary within the buffer zone before flowing into Great Western Reservoir located approximately one mile east of this confluence.

The South Walnut Creek retention pond system consists of five ponds (B-1, B-2, B-3, B-4, and B-5) that retain surface water runoff and Plant discharges for monitoring and evaluation before downstream release of these waters. All flow downstream of the most downstream pond (Pond B-5) originates from Pond B-5 and is measured and monitored for quality in accordance with the Plant's NPDES permit (discharge point 006). Ponds B-1 and B-2 are reserved for spill control, surface water runoff, or treated sanitary waste of questionable quality, and Pond B-3 is a holding pond for sanitary sewage treatment plant effluent. The normal discharge of Pond B- 3 is to a spray system located in the vicinity of the East Trenches. Ponds B-4 and B-5 receive surface water runoff from the central portion of the Plant and occasional discharges from Pond B-3. The surface water runoff received by Pond B-4 is collected by the Central Avenue Ditch and upper reaches of South Walnut Creek.

2.2.3.2 Woman Creek

Woman Creek is located south of the Plant with headwaters in largely undisturbed Rocky Flats Alluvium. Runoff from the southern part of the Plant is collected in the South Interceptor Ditch located due north of the creek and delivered to Pond C-2. Pond C-1 (upstream of C-2) receives stream flow from Woman Creek. The discharge from Pond C-1 is diverted around Pond C-2 into the Woman Creek channel downstream. Water in Pond C-2 is discharged to Woman Creek in accordance with the Plant NPDES permit (discharge point 007).

Flow in Woman Creek and the South Interceptor Ditch is intermittent, appearing and disappearing along various reaches. During the 1986 initial site characterization, measurable flow occurred at less than one-half of the ten stations located along Woman Creek and the South Interceptor Ditch (Rockwell International, 1986e). All recorded flows were less than ten gallons per minute. During the 1986 and 1987 investigations, there was no surface flow in Woman Creek downstream of Pond C-2. The intermittent surface water flow observed for Woman Creek and the South Interceptor Ditch is indicative of frequent interaction with the shallow ground-water system.

2.3 NATURE AND EXTENT OF CONTAMINATION

2.3.1 Background Characterization

In order to facilitate the interpretation of chemical results in non-background areas, a background characterization program has been implemented to define the spatial and temporal variability of naturally occurring constituents. Field work was conducted in 1989 and a draft Background Geochemical Characterization Report was prepared and submitted to the regulatory agencies December 15, 1989 (Rockwell International, 1989e). The document summarizes the background data for ground water, surface water, sediments, and geologic materials, and identifies preliminary statistical boundaries of background variability. Spatial variations in the chemistry of geologic materials and water were addressed by placing sample locations throughout background areas at the Plant. The goal of evaluating temporal variations in water chemistry has not yet been achieved because at least two years of quarterly data are needed. The draft report will be updated in 1990 by incorporation of analytical data that were unavailable in December 1989, including a second

round of ground-water samples for which laboratory analyses were not available. The information in the draft background geochemical report has been used to preliminarily characterize inorganic contamination at the 903 Pad, Mound, and East Trenches Areas.

The boundary of background variability was quantified through the calculation of tolerance intervals assuming a normal distribution. The upper limit of the tolerance interval or the maximum detected value for each parameter analyzed in background ground-water, surface water, sediment, and geologic samples are provided in Tables 2-1 through 2-4, respectively. Maximum detected values are provided where there were insufficient data to calculate tolerance intervals. This condition resulted from there being an insufficient number of samples, or where there was an insufficient number of detectable concentrations for a given analyte. Background samples were not analyzed for EPA Contract Laboratory Program (CLP) Target Compound List (TCL) organics, because they are not expected to be present.

To assess the presence of inorganic contamination at the 903 Pad, Mound, and East Trenches Areas, site-specific chemical data are compared to the background tolerance intervals or the maximum detected value if a tolerance interval could not be calculated. A constituent concentration that is greater than the upper limit of the one-sided 95% tolerance interval at the 95% confidence level will be considered to preliminarily represent contamination. If the maximum background value is not an outlier, comparison of site constituent concentrations to this value should identify obvious contamination but not necessarily contaminant levels near background. This approach provides adequate information for borehole and monitoring well placement plans.

Radionuclides are analyzed by counting sub-atomic particle emissions, which is a random function. Since radioactive disintegration is a statistical process and therefore has a probability distribution, results are reported as a measured value with an associated two standard deviation propagated error term indicated in parentheses immediately following the measured value. Computation of tolerance intervals for radionuclides did not account for the error term associated with each datum. Techniques are under investigation to account for propagation of error resulting from computation. For the purposes of this plan, the boundaries of the background variability for radionuclides will be the tolerance intervals as computed in the draft Background Geochemical Characterization Report. Site radionuclide concentrations where the error term is larger than

TABLE 2-1

BACKGROUND GROUND-WATER (ROUND 1)
TOLERANCE INTERVAL UPPER LIMITS
MAXIMUM DETECTED VALUE

Analyte	Units	Rocky Flats Alluvium (11 Samples)	Colluvium (2 Samples)	Valley Fill Alluvium (8 Samples)	Weathered Claystone (4 Samples)	Weathered Sandstone (2 Samples)	Unweathered Sandstone (7 Samples)
Dissolved Metals							
Aluminum	mg/l	ND	ND	ND	ND	ND	0.327*
Antimony	mg/l	ND	ND	ND	ND	ND	ND
Arsenic	mg/l	ND	ND	ND	ND	ND	0.0186*
Barium	mg/l	ND	ND	ND	ND	ND	ND
Beryllium	mg/l	ND	ND	ND	ND	ND	ND
Cadmium	mg/l	ND	ND	ND	ND	ND	ND
Calcium	mg/l	85	76.8*	138	73.4*	65.7*	64.6
Cesium	mg/l	ND	ND	ND	ND	ND	ND
Chromium	mg/l	ND	ND	ND	ND	0.0122*	ND
Cobalt	mg/l	ND	ND	ND	ND	ND	ND
Copper	mg/l	ND	ND	ND	ND	ND	ND
Iron	mg/l	0.266*	ND	0.94*	ND	ND	ND
Lead	mg/l	ND	ND	ND	ND	ND	ND
Lithium	mg/l	ND	0.172*	0.028	.031*	0.0106*	ND
Magnesium	mg/l	5.79*	15.3*	26.57	45.3*	9.41*	ND
Manganese	mg/l	0.365	0.088*	0.686*	0.126*	0.292*	0.0182*
Mercury	mg/l	ND	ND	0.003*	.008*	ND	ND
Molybdenum	mg/l	0.0136*	ND	ND	0.015*	0.015*	0.112*
Nickel	mg/l	0.0432*	ND	ND	ND	ND	ND
Potassium	mg/l	7.73*	ND	ND	ND	ND	21.89*
Selenium	mg/l	ND	ND	0.0114*	ND	ND	0.041*
Silver	mg/l	ND	ND	ND	ND	ND	ND
Sodium	mg/l	13.4	98.7*	88	36.9*	25.6*	599
Strontium	mg/l	0.159*	ND	ND	ND	ND	0.451*
Thallium	mg/l	ND	ND	ND	0.01*	ND	ND
Tin	mg/l	ND	ND	ND	ND	ND	
Vanadium	mg/l	ND	ND	ND	ND	ND	ND
Zinc	mg/l	0.141*	ND	0.0212*	0.107*	ND	0.564

TABLE 2-1 (cont.)

BACKGROUND GROUND-WATER (ROUND 1)
TOLERANCE INTERVAL UPPER LIMITS
MAXIMUM DETECTED VALUE

Analyte	Units	Rocky Flats Alluvium (11 Samples)	Colluvium (2 Samples)	Valley Fill Alluvium (8 Samples)	Weathered Claystone (4 Samples)	Weathered Sandstone (2 Samples)	Unweathered Sandstone (7 Samples)
Other							
Total Dissolved Solids	mg/l	352	520*	947	320*	170*	1761
Carbonate	mg/l	ND	ND	ND	ND	ND	49
Bicarbonate	mg/l	436	470*	719	400*	140*	412
Chloride	mg/l	15.6	20*	40.29	11*	15*	607
Sulfate	mg/l	45.1	86*	150	44*	16*	950
Nitrate	mg/l	2.98	0.18*	0.69*	0.58*	1.6*	0.610
Cyanide	mg/l	.0038*	ND	ND	0.0036*	ND	ND
pH	----	8.6 (5.98)	7.4* (7.1)**	8.68 (6.12)	8.2* (7.4)**	7.5* (7.2)**	10.57 (7.43)
Dissolved Radionuclides							
Gross Alpha	pCi/l	12.543	27*	13.515	12*	7*	13*
Gross Beta	pCi/l	14.570	12*	18.530	7*	2*	15*
Uranium 233, 234	pCi/l	1.647	11*	6.481	5.8*	1.1*	12.936
Uranium 235	pCi/l	0.000	0.3*	0.232	0.2*	0*	0.135
Uranium 238	pCi/l	0.195	7.7*	5.084	3.2	0.6*	3.3507
Strontium 89, 90	pCi/l	0.552	0.1*	0.878	0.1	-0.1*	0.2*
Plutonium 239, 240	pCi/l	0.009	0*	0.012	0.03	0.01*	0.000
Americium 241	pCi/l	0.000	0*	0.012	0	0.01*	0.019
Cesium 137	pCi/l	0.603	0.2*	0.776	0.4	0.3*	0.7*
Tritium	pCi/l	309	100*	505	100	100*	731

* - Maximum Detected Value
** - Minimum Detected Value
ND - Not Detected at Contract Required Detection Limit
() - Tolerance Internal Lower Limit for Two-Sided Parameter

TABLE 2-2

BACKGROUND SURFACE WATER (ROUNDS 1 and 2)
TOLERANCE INTERVAL UPPER LIMITS
OR MAXIMUM DETECTED VALUE

Analyte	Units	Round 1 (7 samples)** Total	Dissolved
Metals			
Aluminum	mg/l	0.916*	0.485*
Antimony	mg/l	ND	ND
Arsenic	mg/l	ND	ND
Barium	mg/l	ND	ND
Beryllium	mg/l	ND	ND
Cadmium	mg/l	ND	ND
Calcium	mg/l	85.01	85.92
Cesium	mg/l	1.00*	ND
Chromium	mg/l	ND	ND
Cobalt	mg/l	ND	ND
Copper	mg/l	ND	ND
Iron	mg/l	3.17	1.78*
Lead	mg/l	ND	0.006*
Lithium	mg/l	ND	ND
Magnesium	mg/l	12.48	12.82
Manganese	mg/l	0.636	0.368*
Mercury	mg/l	0.001	0.001
Molybdenum	mg/l	ND	ND
Nickel	mg/l	ND	ND
Potassium	mg/l	ND	ND
Selenium	mg/l	ND	ND
Silver	mg/l	0.001*	ND
Sodium	mg/l	47.36	46.22
Strontium	mg/l	0.382	0.40
Thallium	mg/l	ND	ND
Tin	mg/l	ND	ND
Vanadium	mg/l	ND	ND
Zinc	mg/l	0.027	0.032*

TABLE 2-2 (cont.)

BACKGROUND SURFACE WATER (ROUNDS 1 and 2)
TOLERANCE INTERVAL UPPER LIMITS
OR MAXIMUM DETECTED VALUE

Analyte	Units	Round 1 (7 samples)** Total	Dissolved
Other			
Total Dissolved Solids	mg/l	271.16	NA
Carbonate	mg/l	ND	NA
Bicarbonate	mg/l	296.97	NA
Chloride	mg/l	106.9	NA
Sulfate	mg/l	48.82	NA
Nitrate	mg/l	2.69	NA
Cyanide	mg/l	ND	NA
pH	----	8.69 (6.60)	NA
Radionuclides			
Gross Alpha	pCi/l	7.74	4.38
Gross Beta	pCi/l	9.89	8.80
Uranium 233, 234	pCi/l	1.45	1.40
Uranium 235	pCi/l	0.133	0.133
Uranium 238	pCi/l	0.803	0.957
Strontium 89, 90	pCi/l	2.04	1.398
Plutonium 239, 240	pCi/l	0.018	ND
Americium 241	pCi/l	0.042	0.013
Cesium 137	pCi/l	0.599	0.472
Tritium	pCi/l	258	NA

NA - Not Analyzed
ND - Not Detected
() - Tolerance Interval Lower Limit for Two-Sided Parameter
* - Maximum Detected Value
** - At Stations SW-104 and SW-80, most total and a few dissolved constituents were uncharacteristically high relative to the other data. To be conservative, these data are not included in computation of the tolerance interval.

TABLE 2-3

BACKGROUND SEDIMENT
TOLERANCE INTERVAL UPPER LIMITS
OR MAXIMUM DETECTED VALUE

Analyte	Units	Upper Limit (9 Samples)
Total Metals		
Aluminum	mg/l	24789
Antimony	mg/l	ND
Arsenic	mg/l	13.0*
Barium	mg/l	182*
Beryllium	mg/l	ND
Cadmium	mg/l	ND
Calcium	mg/l	72551
Cesium	mg/l	ND
Chromium	mg/l	43.38
Cobalt	mg/l	ND
Copper	mg/l	22.0*
Iron	mg/l	28308
Lead	mg/l	39.502
Lithium	mg/l	ND
Magnesium	mg/l	4110*
Manganese	mg/l	372.20
Mercury	mg/l	ND
Molybdenum	mg/l	ND
Nickel	mg/l	29.9*
Potassium	mg/l	ND
Selenium	mg/l	ND
Silver	mg/l	6.8*
Sodium	mg/l	ND
Strontium	mg/l	175*
Thallium	mg/l	ND
Tin	mg/l	ND
Vanadium	mg/l	50.2*
Zinc	mg/l	92.688

TABLE 2-3 (cont.)

BACKGROUND SEDIMENT
TOLERANCE INTERVAL UPPER LIMITS
OR MAXIMUM DETECTED VALUE

Analyte	Units	Upper Limit (9 Samples)
Other		
Nitrate	mg/l	ND
pH	----	9.03 (8.77)
Total Radionuclides		
Gross Alpha	pCi/l	60
Gross Beta	pCi/l	50
Uranium 233, 234	pCi/l	1.669
Uranium 235	pCi/l	0.176
Uranium 238	pCi/l	1.755
Strontium 89, 90	pCi/l	1.390
Plutonium 239, 240	pCi/l	0.096
Americium 241	pCi/l	0.029
Cesium 137	pCi/l	1.578
Tritium	pCi/l	0.408

ND - Not Detected
* - Maximum Detected Value
() - Tolerance Interval Lower Limit for Two-Sided Parameter

TABLE 2-4

BACKGROUND GEOLOGIC MATERIALS
TOLERANCE INTERVAL UPPER LIMITS
MAXIMUM DETECTED VALUE

Analyte	Units	Rocky Flats Alluvium (70 Samples)	Colluvium (28 Samples)	Weathered Claystone (17 Samples)	Weathered Sandstone (4 Samples)
Total Metals					
Aluminum	mg/l	25312	21663	13495	10300*
Antimony	mg/l	ND	ND	16.2*	ND
Arsenic	mg/l	15.86	7.7	15.05	3.6*
Barium	mg/l	155.8	345.8	240.1	165*
Beryllium	mg/l	11.27	17.75	11.8	2.2*
Cadmium	mg/l	3.2*	1.8*	ND	ND
Calcium	mg/l	43079	20811	10183	5940*
Cesium	mg/l	ND	274*	ND	ND
Chromium	mg/l	37.9	26.8	16.57	10.7*
Cobalt	mg/l	18.2*	15.9*	29.7*	20.5*
Copper	mg/l	20.03	26.7	30.62	19.6*
Iron	mg/l	22916	29991	41295	12300*
Lead	mg/l	18.04	26.4	34.5	13.4*
Lithium	mg/l	44.4	32.1	33.37	7.0*
Magnesium	mg/l	4425	6151	4896	2520*
Manganese	mg/l	422.9	545.1	656	305*
Mercury	mg/l	0.58*	0.44*	0.35*	0.27*
Molybdenum	mg/l	38.65	32.78	33.68	11.2*
Nickel	mg/l	43.27	35.4	56.95	14.3*
Potassium	mg/l	3336	2789	1400*	ND
Selenium	mg/l	ND	ND	ND	ND
Silver	mg/l	40.9*	33.5*	18.7*	12.7*
Sodium	mg/l	ND	3680*	ND	ND
Strontium	mg/l	226*	111.1	144.42	69.2*
Thallium	mg/l	ND	ND	ND	ND
Tin	mg/l	338*	441*	274*	268*
Vanadium	mg/l	54.67	58.2	47.7	22.2*
Zinc	mg/l	52.64	98.1	106.7	79.9*

TABLE 2-4 (cont.)

BACKGROUND GEOLOGIC MATERIALS
TOLERANCE INTERVAL UPPER LIMITS
MAXIMUM DETECTED VALUE

Analyte	Units	Rocky Flats Alluvium (70 Samples)	Colluvium (28 Samples)	Weathered Claystone (17 Samples)	Weathered Sandstone (4 Samples)
Other					
Sulfide	mg/l	13*	5*	5*	2*
Nitrate	mg/l	4.3*	4.274	2.0*	1.9*
pH	----	9.64 (6.06)	9.48 (6.96)	10.14 (7.04)	9.2* (8.0)**
Total Radionuclides					
Gross Alpha	pCi/l	37.108	51.710	52.302	37
Gross Beta	pCi/l	36.886	35.135	35.743	29
Uranium 233, 234	pCi/l	1.491	1.759	1.985	0.8
Uranium 235	pCi/l	0.087	0.169	0.258	0.1
Uranium 238	pCi/l	1.353	1.675	1.643	1.0
Strontium 89, 90	pCi/l	0.768	0.776	0.786	0.4
Plutonium 239, 240	pCi/l	0.017	0.023	0.020	0.01
Americium 241	pCi/l	0.018	NR	NR	NR
Cesium 137	pCi/l	0.082	0.113	ND	0.0
Tritium	pCi/l	0.410	0.299	0.322	0.39

ND - Not Detected
NR - Data Not Received
* - Maximum Detected Value
** - Minimum Detected Value
() - Tolerance Interval Lower Limit for Two-Sided Parameter

the measured value are below the minimum detectable activity (MDA) and are considered not statistically different from background. Measured values which do exceed their associated counting errors are considered above background if they are greater than the upper limit of the tolerance interval. Because this comparison does not account for the propagated error associated with the upper limit of the background tolerance interval, this yields conservative interpretation of the site data. It is also noted that the upper limits of the tolerance intervals are similar in magnitude to the maximum concentration observed for the data set.

2.3.2 Soils

The extent of soil contamination at the 903 Pad, Mound, and East Trenches Areas was determined from soil samples collected during the Phase I RI. Soil samples were taken from boreholes drilled into and adjacent to known SWMU locations and analyzed for the parameters listed in Table 2-5. Boreholes were drilled into SWMUs to the extent practical; however, boreholes were not drilled into sites still containing wastes (the trenches and 903 Pad) due to potential health hazards to field workers and potential for release of waste constituents to the environment. Figure 1-5 shows site locations, Figure 2-1 shows Phase I RI borehole locations, and analytical soil sampling results are presented in Appendix A.

The majority of the soil metals analyzed from Operable Unit No. 2 were below background levels, those elements which did exceed background are discussed on a site-by-site basis is the subsequent sections.

Plutonium and americium are the principle radionuclide contaminants exhibiting elevated concentrations in surface soils. Because many of the surface soil samples were mixed into large composites, the Phase I RI data do not rule out the presence of radionuclides other than plutonium and americium. Cesium-137, tritium, and uranium were detected, albeit at near-background concentrations and in fewer than ten samples. The Phase I RI results are consistent with a recent aerial radiological survey (EG&G, 1989). The radioactivity detected in that survey was associated with known radioactive material storage and handling areas, and was attributed to plutonium, americium, and a uranium decay product. The survey indicated elevated americium in soils at the 903 Pad Lip Site. The cesium-137 activity was at a level consistent with global fallout and not enriched in the Plant area. Planned Phase II sampling to evaluate the elevated plutonium and americium concentrations in surface soils will test for other radionuclides as well.

TABLE 2-5

PHASE I RI
SOURCE SAMPLING PARAMETERS
SOIL AND WASTE SAMPLES

METALS

Hazardous Substances List - Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Silver
- Sodium
- Thallium
- Tin
- Vanadium
- Zinc

Other Metals

- Chromium (hexavalent)
- Chromium (trivalent)
- Lithium
- Strontium

ORGANICS

Hazardous Substances List -- Volatiles

- Chloromethane
- Bromomethane
- Vinyl Chloride
- Chloroethane
- Methylene Chloride
- Acetone
- Carbon Disulfide
- 1,1-Dichloroethene
- 1,1-Dichloroethane
- trans-1,2-Dichloroethene
- Chloroform
- 1,2-Dichloroethane
- 2-Butanone
- 1,1,1-Trichloroethane
- Carbon Tetrachloride
- Vinyl Acetate
- Bromodichloromethane
- 1,1,2,2-Tetrachloroethane
- 1,2-Dichloropropane
- trans-1,3-Dichloropropene
- Trichloroethene
- Dibromochloromethane
- 1,1,2-Trichloroethane
- Benzene
- cis-1,3-Dichloropropene

TABLE 2-5 (CONTINUED)

PHASE I RI
SOURCE SAMPLING PARAMETERS
SOIL AND WASTE SAMPLES

ORGANICS (CONT.)

Hazardous Substances List - Volatiles (Continued)

- 2-Chloroethyl Vinyl Ether
- Bromoform
- 2-Hexanone
- 4-Methyl-2-pentanone
- Tetrachloroethene
- Toluene
- Chlorobenzene
- Ethyl Benzene
- Styrene
- Total Xylenes

Hazardous Substances List -- Semi-Volatiles

- N-Nitrosodimethylamine
- Phenol
- Aniline
- bis(2-Chloroethyl)ether
- 2-Chlorophenol
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Benzyl Alcohol
- 1,2-Dichlorobenzene
- 2-Methylphenol
- bis(2-Chloroisopropyl)ether
- 4-Methylphenol
- N-Nitroso-Dipropylamine
- Hexachloroethane
- Nitrobenzene
- Isophorone
- 2-Nitrophenol
- 2,4-Dimethylphenol
- Benzoic Acid
- bis(2-Chloroethoxy)methane
- 2,4-Dichlorophenol
- 1,2,4-Trichlorobenzene
- Naphtalene
- 4-Chloroaniline
- Hexachlorobutadiene
- 4-Chloro-3-methylphenol(para-chloro-meta-cresol)
- 2-Methylnaphthalene
- Hexachlorocyclopentadiene
- 2,4,6-Trichlorophenol
- 2,4,5-Trichlorophenol
- 2-Chloronaphthalene
- 2-Nitroaniline
- Dimethyl Phthalate
- Acenaphthylene
- 3-Nitroaniline
- Acenaphthene
- 2,4-Dinitrophenol
- 4-Nitrophenol
- Dibenzofuran
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- Diethylphthalate
- 4-Chlorophenyl Phenyl ether
- Fluorene
- 4-Nitroaniline
- 4,6-Dinitro-2-methylphenol

TABLE 2-5 (CONTINUED)

PHASE I RI
SOURCE SAMPLING PARAMETERS
SOIL AND WASTE SAMPLES

ORGANICS (CONT.)

Hazardous Substances List -- Semi-Volatiles (Continued)

- N-nitrosodiphenylamine
- 4-Bromophenyl Phenyl ether
- Hexachlorobenzene
- Pentachlorophenol
- Phenanthrene
- Anthracene
- Di-n-butylphthalate
- Fluoranthene
- Benzidine
- Pyrene
- Butyl Benzyl Phthalate
- 3,3'-Dichlorobenzidine
- Benzo(a)anthracene
- bis(2-ethylhexyl)phthalate
- Chrysene
- Di-n-octyl Phthalate
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Indeno(1,2,3-cd)pyrene
- Dibenz(a,h)anthracene
- Benzo(g,h,i)perylene

Hazardous Substances List -- Pesticides/PCBS

- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- Heptachlor
- Aldrin
- Heptachlor Epoxide
- Endosulfan I
- Dieldrin
- 4,4'-DDE
- Endrin
- Endosulfan II
- 4,4'-DDD
- Endrin Aldehyde
- Endosulfan Sulfate
- 4,4'-DDT
- Endrin Ketone
- Methoxychlor
- Chlordane
- Toxaphene
- AROCLOR-1016
- AROCLOR-1221
- AROCLOR-1232
- AROCLOR-1242
- AROCLOR-1248
- AROCLOR-1254
- AROCLOR-1260

Other Organics

- Oil and Grease

TABLE 2-5 (CONTINUED)

PHASE I RI
SOURCE SAMPLING PARAMETERS
SOIL AND WASTE SAMPLES

RADIONUCLIDES

Gross Alpha
Gross Beta
Uranium 233+234, 235 and 238
Americium 241
Plutonium 239+240
Strontium 89 + 90
Cesium 137
Tritium

OTHER

pH

2.3.2.1 903 Pad Area

903 Drum Storage Site and 903 Pad Lip Site (SWMU Ref No. 112 and 155)

The 903 Pad Drum Storage and Lip Sites are considered together here because of the proximity of associated boreholes (BH22-87, BH23-87, BH24-87, BH29-87, and BH30-87).

903 Pad Subsurface Radionuclide Contamination

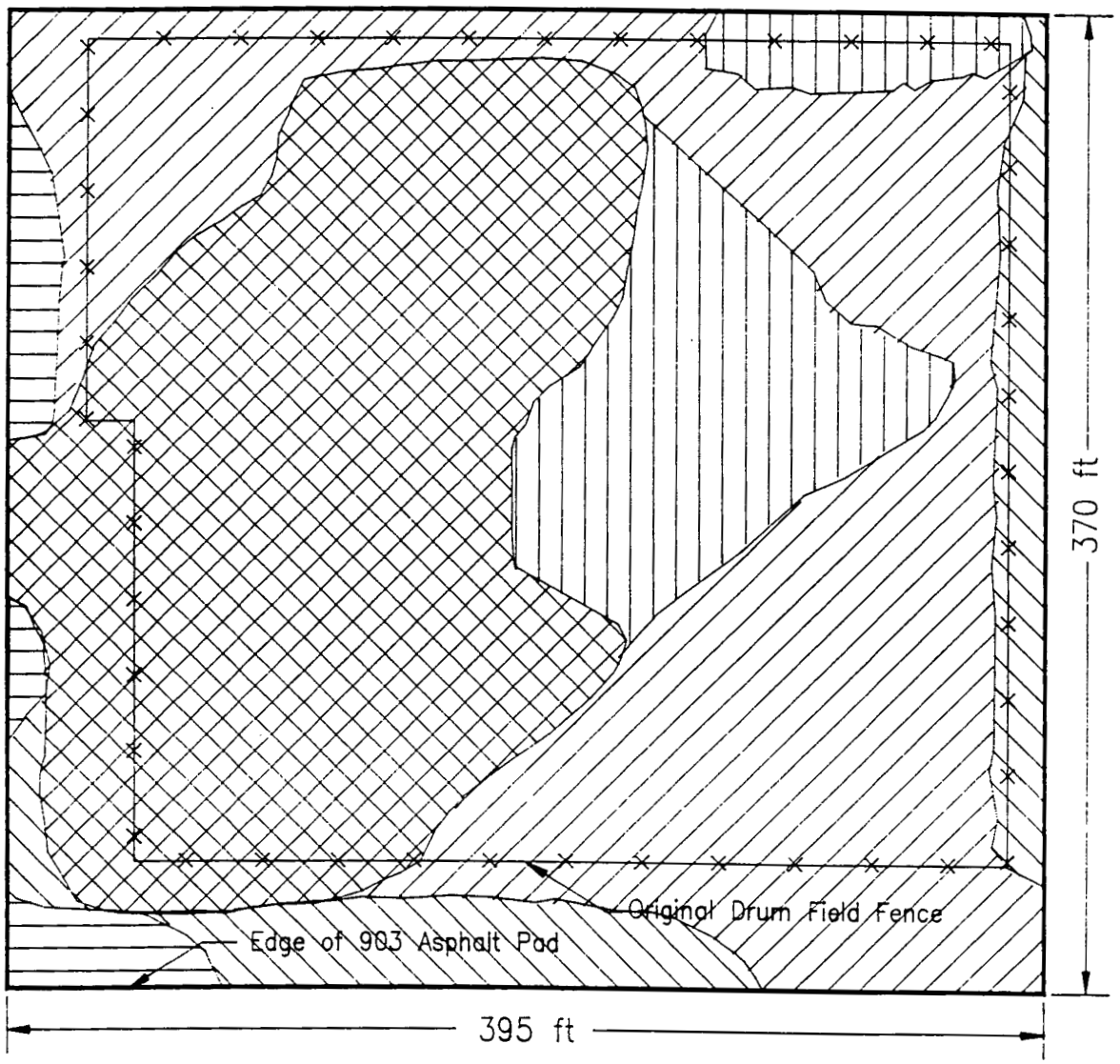
Prior to the emplacement of the asphalt cover at the 903 Pad, a plutonium surface survey was conducted in 1968 subsequent to drum removal (Owen, 1968). The results of this survey are presented in Figure 2-6. This survey indicates widespread contamination throughout the 903 Drum Storage Site. However, the highest survey values occur beneath the western half of the pad where drums were stored and Building 903 was located.

After the emplacement of the asphalt cover, the soils beneath the 903 Pad were sampled in two sampling events for a total of ten excavations. The purpose of both sampling events was characterization of plutonium and uranium concentrations beneath the Pad; other contaminants were not described. The excavation locations are shown in Figure 2-7.

In the earlier of the two sampling events (Seed et al., 1971), four excavation sites (Figure 2-7) were located on the basis of a gross gamma survey on the asphalt cover. Four - two to four square foot holes were hand dug to various depths. The total mass of plutonium yielded from excavations SW and NC were approximately 10 milligrams (mg) and 0.2 - 0.3 mg, respectively. Approximately 25 kg and 6 kg of depleted uranium were recovered from excavations No. 14 and No. 17, respectively. (Depleted uranium is the uranium remaining after the uranium 235 isotope is separated from natural uranium during the gaseous diffusion enrichment process.) Reportedly, no sample contained both plutonium and uranium. Two conclusions drawn from this study pertinent to waste characterization are: (1) no evidence was found of radionuclides moving

FIGURE 2-6

RESULTS OF 1968 PLUTONIUM SURFACE SURVEY
903 DRUM STORAGE SITE



EXPLANATION

- less than 0.006 mg/m 2
- 0.006 to 0.024 mg/m 2
- 0.025 to 0.10 mg/m2
- 0.10 to 0.30 mg/m2
- 0.30 to 6.0 mg/m 2

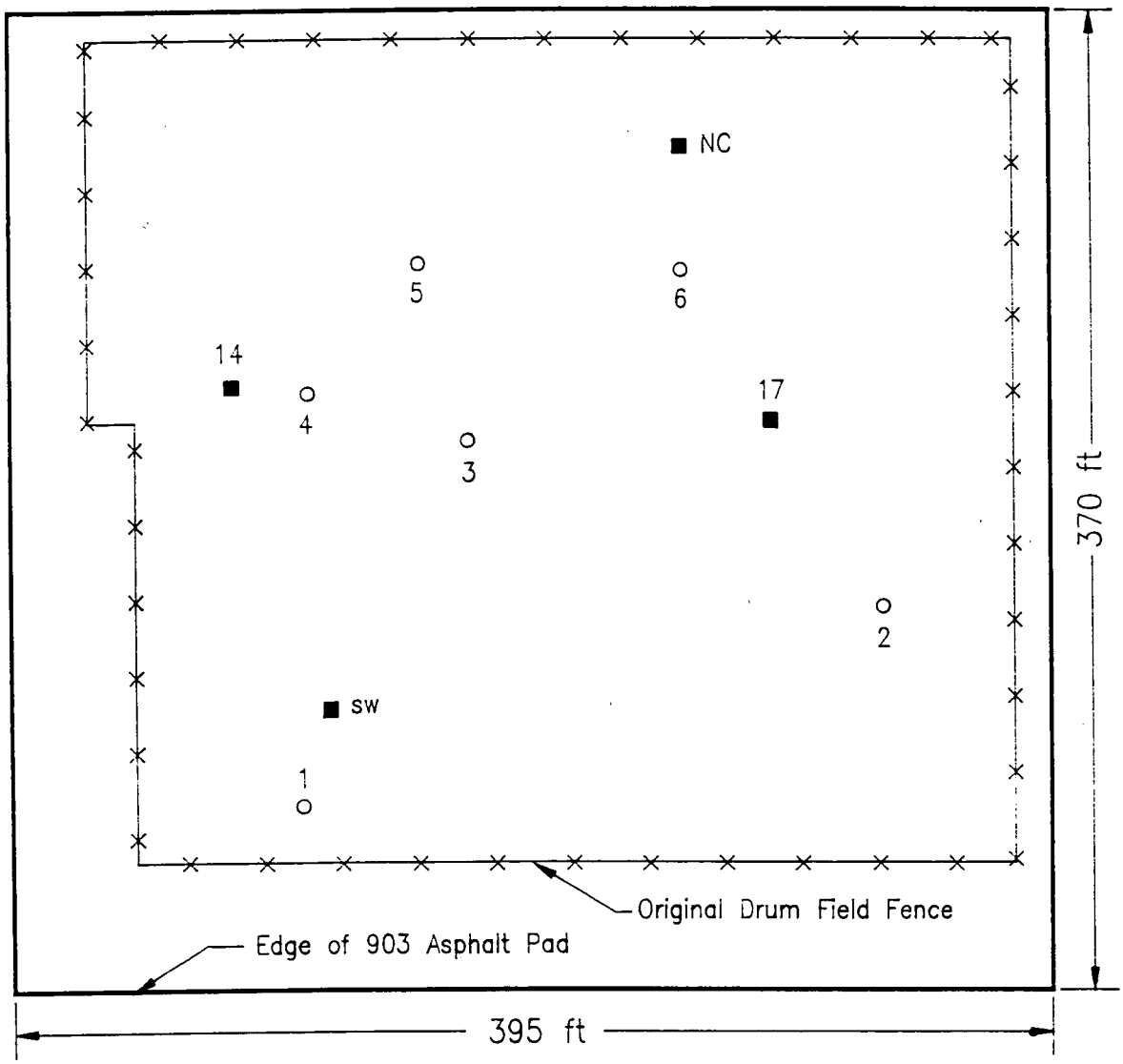
-N-

This survey was conducted in 1968, prior to the placement of fill and asphalt containment cover.
No correction has been made for penetration into soil. Results are relative.
1 mg = 16.22 picoCuries.

Modified after Owen (1968)

FIGURE 2-7

LOCATION OF SAMPLES FROM BENEATH THE 903 PAD



EXPLANATION

■ Sample reported in Seed et al. (1971)

o Sample reported in Navratil et al. (1979)

3 Sample Identifier (See text)

N

Modified after figure appended to Navratil et al. (1979)

upwards from the original ground level into the fill material; and (2) at all four locations activity extended no more than one inch into a clay layer which was found 4-15 inches below the original ground surface. See Table 2-6 for a summary of the results.

In the later sampling event (Navratil et al., 1979), six soil samples (Figure 2-7) were taken from beneath the 903 Pad. These soil samples were examined to determine the extent and distribution of plutonium and americium. The average plutonium and americium concentrations reported for the six samples are shown in Table 2-7. A summary of pertinent conclusions drawn from this study are:

(1) plutonium and americium are associated with smaller soil fractions;

(2) an estimated 18,000 tons of contaminated soil underlies the asphalt pad; and

(3) experimental data on 903 Pad soil indicate that plutonium and americium soil contamination can be reduced by wet screening (Navratil et. al, 1979).

In summary, plutonium and americium are present beneath the 903 Pad and appear to be restricted to shallow depths below the original ground surface. The distribution of other contaminants in the soils beneath the 903 Pad, however, has not been investigated.

903 Pad and Lip Sites Phase I RI Soil Investigation Results

Hazardous Substances List (HSL) volatile organics were below detection limits in boreholes surrounding the 903 Pad with the exception of bis(2-ethylhexyl) phthalate. Acetone and methylene chloride were reported but are suspected laboratory artifacts as indicated by contaminated laboratory blanks. However, volatile organics are present in ground water at the site and are expected to be present in soils directly beneath the 903 Pad. Based on soil boring results, the extent of volatile organic soil contamination at the 903 Drum Storage Site appears to be confined to the area immediately beneath and adjacent to the pad. Additional boreholes will be drilled through and immediately adjacent to the pad during the Phase II RI to validate this conclusion.

TABLE 2-6

SUMMARY OF RESULTS REPORTED BY SEED ET AL. (1971)

Hole	Gamma Activity Thru Asphalt (cpm)	Maximum Gamma Reading in Hole (cpm)	Maximum α Reading in Hole (dpm)	Active Material	Where Activity First Detected	Vertical Thickness Activity Layer (inches) Below Original Ground Surface
No. 14*	55,000	3×10^6	5,000	Depleted Uranium	Original Ground Layer	6-8
SW	16,000	<16,000	20,000	Plutonium	Original Ground Layer	4-6
No. 17	35,000	2×10^6	5,000	Depleted Uranium	Original Ground Layer	1-2
NC	16,000	20,000	1,000	Plutonium	Original Ground Layer	<1

Table modified after Seed et al. (1971). Based on wet chemical analysis.

* This hole was identified as No. 32 in original table, however, review of text indicates this was mislabeled and should be hole No. 14 (no hole 32 was excavated).

CPM = Counts per minute

TABLE 2-7

SUMMARY OF RESULTS FOR SOIL SAMPLING BENEATH THE 903 PAD

Sample	Radionuclide Content				Sampling Depth from Top of Pad	
	Pu_{239} dpm/g	pCi/g	Am_{241} dpm/g	pCi/g	cm*	inches
1	940	427	620	282	46	18
2	1,400	636	1,100	500	61	24
3	8,000	3,636	1,000	455	56	22
4	45,000	20,455	4,200	1,909	66	26
5	14,000	6,364	4,100	1,864	61	24
6	17,000	7,727	5,000	2,273	61	24

Table modified from Navratil et al. (1979)

* The sampling depth shows the soil removal depth required to reach soil readings ≤250 dpm/g.

dpm/g = Disintegrations per minute per gram.

The Rocky Flats alluvium near the 903 Pad and Lip Sites contains barium, cadmium, calcium, mercury, manganese, antimony, and zinc above background. Of those elements, only manganese was reported above background in more than two samples and by more than a factor of two above the tolerance limit [maximum: manganese - 1080 milligrams per kilogram (mg/kg) in BH23-87]. The isolated occurrence of detectable mercury in colluvium is notable for its very high value (114 mg/kg in BH29-87).

Fewer analytes exceeded background in the deeper units below SWMUs 112 and 155. Cadmium reached 3.8 and 4.0 mg/kg in claystone, and the major ions calcium and aluminum exceeded background by less than 10% of the tolerance level. Sandstone in BH29-87 exhibited arsenic, cadmium, and mercury slightly above background, and iron, lead, and vanadium above background by larger margins.

The Phase I RI results provide evidence of plutonium and americium contamination of surface soils. Plutonium and americium are significantly elevated in the 0-9 foot composite internal of BH30-87 [plutonium - 180 picoCuries per kilogram (pCi/kg); americium - 22 pCi/kg], and less so in BH22-87 and BH23-87.

Based on results of a soil boring program (Rockwell International, 1987a), it appears that soil within the 903 Pad Lip Site is contaminated with plutonium, americium, and phthalates. Radionuclide contamination (plutonium and americium) is apparently limited to surficial soils; however, this conclusion will be tested during the Phase II RI.

Trench T-2 Site and Reactive Metal Destruction Site (SWMU Ref. Nos. 109 and 110)

Boreholes BH25-87 through BH28-87 are grouped here to jointly characterize the Trench T-2 and Reactive Metal Destruction Sites. Volatile and semi-volatile organics were detected just south of Trench T-2 in borehole BH25-87; maximum concentrations of detected compounds were 17,000 micrograms per kilogram (μg/kg) of trichloroethene (TCE), 10,000 μg/kg of PCE, 250 μg/kg of 1,1,1-trichloroethane (1,1,1-TCA), 1900 μg/kg bis(2-ethylhexyl) phthalate, 780 μg/kg of ethylbenzene, 3300 μg/kg of total xylenes, and 1,100 μg/kg of acetone (also detected in the blank). Solvent contamination was also found at the eastern corner of Reactive Metal Destruction Site in BH28-87. PCE at 210 μg/kg, carbon tetrachloride (CCl_4) at 100 μg/kg, bis(2-

ethylhexyl) phthalate (3400 μg/kg), and carbon disulfide at 58 μg/kg were all detected below the water table in BH28-87. Additional soil samples will be collected from this site during the Phase II RI to fully characterize the extent of soil contamination.

Numerous samples contained arsenic and cadmium above background in the vicinity of Trench T-2 and the Reactive Metal Destruction Site. Boreholes near T-2, BH25-87 through BH27-87, contained above background arsenic and cadmium in both colluvium and claystone, reaching a maximum of 20 mg/kg arsenic in claystone at BH25-87 and 5.4 mg/kg cadmium in colluvium. Only one sample showed above background barium, but the margin above background was very large (1899 mg/kg in BH25-87).

Calcium and potassium exceeded background, but the margins of those major soil ions above tolerance levels were ten percent or less. The sole occurrences of above background nickel (36.1 mg/kg in BH25-87) and chromium (17 mg/kg in BH27-87) were within one mg/kg of the respective tolerance limits.

Plutonium and americium were elevated above background in a composite sample (0-9 feet) near Trench T-2, and in surface and nine-foot bedrock samples near the Reactive Metal Destruction site. Additional planned surficial soil and soil profile sampling will characterize the radionuclide distribution more thoroughly.

2.3.2.2 Mound Area

Mound, Oil Burn Pit, and Trench T-1 Sites (SWMU Ref. Nos. 113, 158 and 108)

Boreholes BH33-87 through BH38-87 are discussed together here to represent soils in the vicinity of the Mound, Oil Burn Pit, and Trench T-1 Sites.

No volatile organic contamination was found in boreholes BH37-87 and BH38-87 at the Mound Site, but HSL organics were present closer to Trench T-1 and the Oil Burn Pit [acetone, methylene chloride, 1,2-dichloroethane (1,2-DCA), N-nitrosodiphenylamine, di-n-butyl phthalate, and bis(2-ethylhexyl) phthalate]. The detected volatiles were all estimated at concentrations below the detection limit or were present in the

associated laboratory blanks at concentrations within a factor of two of the concentration in the sample (not reportable following CLP protocol). Of the semi-volatiles listed above, only bis(2- ethylhexyl)phthalate was found at non-estimated concentrations, and it was only slightly above the detection limits. There is inadequate evidence to demonstrate significant organic contamination of soils in the vicinity of SWMUs 108 and 158. Additional soil samples will be collected during the Phase II RI to test this conclusion.

Major soil cations, calcium, magnesium, sodium, aluminum, and iron all occurred well above background in alluvium of the Mound Area. Calcium was enriched by more than a factor of ten in BH34-38. Copper and vanadium were above background in BH34-87, as was cadmium in BH33-87. Selenium was above background in BH38-87 alluvium.

Major ions were less elevated in the claystone and sandstone than in upper units; calcium and manganese were above tolerance levels by a small margin in only one sample each in BH33-87 and BH37-87.

Arsenic and cadmium were above background in both lithologic units although the margins above background were small. Barium was above background in claystone and lead was above background in sandstone. Potassium was the only major element above background in the sandstone (maximum of 1400 mg/kg in BH45-87).

Plutonium and americium were elevated in composited surface soil samples adjacent to Trench T-1 (boreholes BH35-87 and BH36-87). Plutonium was detected at 1.5 $\pm$ 0.2 pCi/g, and americium was detected at 0.30 $\pm$ 0.13 pCi/g in the 0 to 12 foot composite sample from borehole BH35-87. Plutonium was also detected at 0.53 $\pm$ 0.16 pCi/g in borehole BH36-87 (zero to five foot composite sample). Since radionuclide contamination is limited to soil samples which include the ground surface, wind dispersal of plutonium and americium from the 903 Drum Storage Site is the likely source of these contaminants.

Additional soil sampling of the surface materials will be performed in the Mound Area to identify possible impacts of radionuclide contamination resuspended from the 903 Drum Storage Site. Based on review of

historical air photos, the Mound Site location was revised westward during preparation of the Phase I RI report. Additional boreholes are needed in the revised SWMU location.

Pallet Burn Site (SWMU Ref. No. 154)

Soil organic contamination is apparent at SWMU 154. Maximum organic compound levels in borehole BH31-87 were 580 µg/kg of bis(2-ethylhexyl) phthalate 32 µg/kg of 1,2-DCA, 110 µg/kg of acetone, and 20 µg/kg of PCE. Maximum organic compound concentrations in borehole BH32-87 were 310 µg/kg bis(2-ethylhexyl) phthalate 29 µg/kg of 1,2-DCA and 170 µg/kg of acetone. No other organic contaminants were detected, and no metals were reported above background in BH31-87 and BH32-87. Soil sampling is needed to evaluate the depth and extent of the plutonium in soils. Furthermore, review of aerial photographs and historical documents during the Phase I RI resulted in revision of the Pallet Burn Site location as discussed in Section 1.0. Additional soil samples will therefore be collected from borings at both possible Pallet Burn Site locations during Phase II activities.

2.3.2.3 East Trenches Area

Trenches T-3, T-4, T-10, and T-11 (SWMU Ref. Nos. 110, 111.1, 111.7, and 111.8)

Three of the seven boreholes near Trenches T-3, T-4, T-10 and T-11 (BH39-87 through BH46-87) exhibited volatile organics above detection limits. Maximum concentrations of 1,1,1-TCA were 130 µg/kg in BH43-87, 180 µg/kg in BH45-87, and 190 µg/kg in BH46-87. Numerous occurrences of acetone and methylene chloride ranged up to several hundred µg/kg. In BH39-87 through BH43-87 the acetone results did not have associated laboratory blank contamination and therefore may reflect actual contamination. N-nitrosodiphenylamine was present at estimated concentrations below 100 µg/kg.

Calcium was the only major ion in alluvium that was present above background. Its concentration in BH41-87, BH43-87, and BH45-87 ranged between 50,000 and 120,000 mg/kg, well above the tolerance limit of 43,079 mg/kg. All of the boreholes contained up to three trace elements above background except

BH44-87. Maximum valves were: arsenic - 37 mg/kg in BH39-87; cadmium - 6.2 mg/kg in BH39-87; manganese - 58 mg/kg in BH42-87; zinc - 55mg/kg in BH41-87 and chromium - 58 mg/kg in BH43-87.

In the underlying claystone, sodium was the only major ion above background (maximum of 1400 mg/kg in 39-87). Boreholes BH40-87, BH42-87 and BH44-87 had no elements above background whereas BH39-87, BH41-87, BH43-87, BH45-87 and BH46-87 each had a few elements above background. Maximum values were: arsenic - 25 mg/kg in BH39-87; cadmium - 6.2 mg/kg in BH46-87; barium - 413 mg/kg in BH39-87; manganese - 3540 mg/kg in BH45-87; vanadium - 60 mg/kg in BH45-87 and zinc - 124 mg/kg in BH46-87).

Potassium was the only elevated major element in the sandstone (maximum: 1400 mg/kg in BH45-87), and BH40-87, BH41-87, BH43-87 and BH46-87 had no metals above background. A subset of arsenic, barium, cadmium, chromium, iron, manganese, nickel, lead and vanadium were elevated in each of boreholes BH49-87, BH42-87, BH44-87, and BH45-87.

Plutonium was elevated in the surface sample from BH39-87 (0.82 ± 0.12 pCi/g). Additional surficial soil sampling is necessary within this group of trenches to characterize surficial radionuclide contamination.

Trenches T-5 through T-9 (SWMU Ref. Nos. 111.2 through 111.6)

Characterization of the southern East Trenches, T-5 through T-9, is based on boreholes BH47-87 through BH54-87.

Volatile organic contaminants bis(2-ethylhexel) phthalate, N-nitrosodiphenylamine, acetone, and methylene chloride are present in alluvium and claystone in the vicinity of the southern trenches. Most of these occurrences are associated with contaminated laboratory blanks, but occasionally substantial concentrations were reported without a corresponding occurrence in the blanks. BH47-87, BH49-87, BH50-87, and BH52-87 contain 1,2-DCA (maximum 110 μg/kg), TCE (maximum 150 μg/kg), and PCE (maximum 62 μg/kg).

Major ions, calcium, magnesium, iron and potassium were present above background in alluvium near Trenches T-5 through T-9. Only calcium was significantly elevated in more than one borehole (BH47-87, BH48-87, BH52-87, BH53-87, BH55-87, BH56-87).

Only BH49-87 had no trace elements above background. In the other boreholes, arsenic, cadmium and lead were above background in a total of eight samples (maxima: arsenic - 30.8 mg/kg in BH54-87; cadmium - 5.6 mg/kg in BH51-87; lead - 45.6 mg/kg in BH51-87).

Arsenic and cadmium were the only elevated metals in the sandstone beneath T-5 through T-9, and they each exceeded background by only 0.2 mg/kg and in only one sample.

Plutonium was detected in the majority of the uppermost soil samples (maximum was 6.0 $\pm$ 0.2 pCi/g in BH52-87), and in only two subsurface samples (0.98 $\pm$ 0.24 pCi/g, 2-35' interval, and 0.14 $\pm$ 0.12 pCi/g, 6-7.8' interval in BH53-87). Americium was detected only in BH52-87 and BH53-87 surface composites (0.14 $\pm$ 0.10 pCi/g, 0-9.50' interval; 0.53 $\pm$ 0.20 pCi/g, 0-18.8' interval).

2.3.3 Ground Water

Ground-water samples from the 903 Pad, Mound, and East Trenches Areas were analyzed for the parameters listed in Table 2-8. The following discussion of volatile organics, metals and inorganics focuses on results for the second quarter of 1989. These are the most recent data pertaining to the same season for which the background levels were determined. However, the discussion of 1989 radionuclide data relies on first quarter results because complete second quarter data are unavailable.

Appendix B presents all the water quality data for Operable Unit No. 2 wells since remedial investigation sampling began in late 1986. These longer term data are consistent with the findings in second quarter 1989 unless otherwise noted below.

TABLE 2-8

PHASE I RI
GROUND-WATER AND SURFACE WATER SAMPLING PARAMETERS

FIELD PARAMETERS

- pH
- Specific Conductance
- Temperature
- Dissolved Oxygen*

INDICATORS

- Total Dissolved Solids
- Total Suspended Solids*

METALS**

- Hazardous Substances List - Metals
  - Aluminum
  - Antimony
  - Arsenic
  - Barium
  - Beryllium
  - Cadmium
  - Calcium
  - Chromium
  - Cobalt
  - Copper
  - Iron
  - Lead
  - Magnesium
  - Manganese
  - Mercury
  - Nickel
  - Potassium
  - Selenium
  - Silver
  - Sodium
  - Thallium
  - Tin
  - Vanadium
  - Zinc

- Other Metals
  - Chromium (hexavalent)
  - Lithium
  - Strontium

ANIONS

- Carbonate
- Bicarbonate
- Chloride
- Sulfate
- Nitrate

ORGANICS

- Oil and Grease
- Hazardous Substances List - Volatiles***
  - Chloromethane
  - Bromomethane
  - Vinyl Chloride
  - Chloroethane
  - Methylene Chloride
  - Acetone
  - Carbon Disulfide
  - 1,1-Dichloroethene
  - 1,1-Dichloroethane
  - trans-1,2-Dichloroethene
  - Chloroform

TABLE 2-8 (CONTINUED)
GROUND-WATER AND SURFACE WATER SAMPLING PARAMETERS

ORGANICS

Hazardous Substances List - Volatiles*** (Continued)

1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
cis-1,3-Dichloropropene
2-Chloroethyl Vinyl Ether
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene
Ethyl Benzene
Styrene
Total Xylenes

RADIONUCLIDES

Gross Alpha
Gross Beta
Uranium 233+234, 235, and 238
Americium 241
Plutonium 239+240
Strontium 90
Cesium 137
Tritium

* For surface water samples only

** Dissolved metals for ground-water samples, total and dissolved metals for surface water samples

*** Ground-water samples from the first quarter of 1987, and all surface water samples were analyzed for 9 of the HSL volatiles. These volatiles are the chlorinated solvents historically detected in the ground water and are as follows: PCE, TCE, 1,1-DCE, 1,2-DCA, t-1,2-DCE, 1,1,1-TCA, 1,1,2-TCA, CCl_4 and $CHCl_3$.

2.3.3.1 Volatile Organic Contamination

CCl_4, PCE, and TCE are the primary volatile organic contaminants in the unconfined ground-water flow system. Figures 2-8 through 2-10 show isopleths for these compounds in the second quarter 1989 for both unconfined alluvial and bedrock wells. Table 2-9 presents all volatile organics above detection limits in the unconfined ground-water system.

Carbon Tetrachloride

Carbon tetrachloride occurs in ground water east, southeast and northeast of the 903 Pad Area (Figure 2-8). Of the downgradient wells in this area, 1-71 and 15-87 show the highest levels of CCl_4 [690J and 1100J micrograms per liter (ug/l)]. (These relatively high concentrations of CCl_4 are flagged "J" because the measurement of the undiluted samples exceeded the range of the standard curve, and the laboratory diluted samples were less than the range of the standard curve. Although this compromises the precision of the data, these results indicate that significant CCl_4 contamination exists). The northern East Trenches may be a second source of CCl_4, for the downgradient concentrations (in wells 36-87 and 42-86) are greater than the upgradient concentrations (in wells 17-87 and 25-87).

The data from repeated samplings corroborate the second quarter 1989 findings, with CCl_4 concentrations of several hundred to a few thousand μg/l in the majority of samples from wells 42-86, 15-87, 17-87, 1-71, 3-74, 11-87, 14-87, 25-87, and 36-87. Other wells had high but isolated CCl_4 readings (2292 mg/l in 39-86), low but consistent readings (in wells 29-87 and 12-87) less than 100 μg/l, and one low occurrence in well 35-87 (12 mg/l). These data demonstrate that CCl_4 has penetrated all sampled geologic units except unweathered sandstone. Although CCl_4 was not detected in the Mound Area at well 1-74, the existing well network is not sufficient to define in detail the CCl_4 plume at this location or elsewhere.

TABLE 2-9

VOLATILE ORGANIC COMPOUNDS DETECTED IN
UNCONFINED GROUND WATER
SECOND QUARTER 1989

Matrix	Well	Date Sampled	Carbon Tetra-chloride (ug/l)	Tetra-chloro-ethene (ug/l)	Trichloro-ethene (ug/l)	Chloro-form	Methylene Chloride	1,1-Di-Chloro-ethane (ug/l)	1,1-Di-Chloro-ethene (ug/l)	Vinyl Chloride (ug/l)	Acetone (ug/l)	Carbon Disulfide (ug/l)	Total-1,2-Dichloro-ethene (ug/l)	Toluene (ug/l)
Rocky Flats Alluvium	33-86	5/04/89	Dry											
	39-86	5/08/89												
	41-86	5/10/89												
	42-86	5/08/89	1,100	300	190	21J								
	43-86	5/04/89	Dry											
	10-87	5/02/89	Dry											
	15-87	5/01/89	1,100J	190	120	21			5J					
	17-87	5/03/89	47J	160R	17	4J								
	19-87	5/04/89	Dry											
	24-87	5/09/89	Dry											
	26-87	5/09/89	Dry											
	27-87	5/10/89	15	31	4J	3J								
	32-87	5/09/89	Dry											
	33-87	5/09/89	Dry											
	35-87	5/09/89	Dry											
Colluvium	63-86	4/13/89	Dry											
	67-86	5/09/89	Dry											
	29-87	4/24/89												
	44-87	4/13/89	Dry											
Valley Fill Alluvium	35-86	5/03/89			11			59	13	470			3J	
	36-86	5/04/89												
	37-86	5/03/89		30R										
	64-86	5/31/89		8J										
	65-86	4/13/89									2J			
	66-86	6/02/89				26	1J					3J		
	21-87	5/03/89												

TABLE 2-9

VOLATILE ORGANIC COMPOUNDS DETECTED IN
UNCONFINED GROUND WATER
SECOND QUARTER 1989

Matrix	Well	Date Sampled	Carbon Tetra-chloride (ug/l)	Tetra-chloro-ethene (ug/l)	Trichloro-ethene (ug/l)	Chloro-form	Methylene Chloride	1,1-Di-Chloro-ethane (ug/l)	1,1-Di-Chloro-ethene (ug/l)	Vinyl Chloride (ug/l)	Acetone (ug/l)	Carbon Disulfide (ug/l)	Total-1,2-Dichloro-ethene (ug/l)	Toluene (ug/l)
Weathered Claystone	1-71	5/01/89	690J	69	230	200			5J					
	2-71	5/01/89		8	440	7		8						
	1-74	5/03/89		45,000	1,800									
	3-74	5/08/89	1,100	50	25	11J								
Weathered Sandstone	62-86	4/17/89									2JB			
	9-87	5/01/89												
	11-87	5/02/89	Dry											
	12-87	5/02/89	Dry											
	14-87	4/24/89	160J	4J	68	16								
	23-87	5/03/89		74R										
	25-87	5/08/89	290	840	120	5J								
	36-87	5/08/89	610	350E	12,000	290E			22J					2J

J - Value estimated below detection limit
E - Value estimated
R - Value rejected by data validation
B - Compound also detected in associated blank.

Tetrachloroethene

The Mound Area appears to be the primary source of PCE within the study area (Figure 2-9); as well 1-74 contained 45000 µg/l. A plume of PCE with concentrations greater than 100 µg/l extends east and southeast (downgradient) from the Mound Area to at least well 36-87. The extent of this plume is not well defined.

PCE was detected in wells southeast (downgradient) of the 903 Pad and Trench T-2 (2-71, 15-87, and 1-71), although the concentrations were lower than in the Mound Area wells. And estimated concentration of 8J µg/l at well 64-86 is the only PCE occurrence outside the limits defined by the wells listed above. This low and isolated result does not provide adequate evidence of PCE contamination at well 64-86. Additional monitoring wells and further sampling are required to delineate the extent of PCE contamination in this vicinity.

Nearly all of the wells that contained PCE in second quarter 1989 exhibited that contaminant throughout the historical samplings. TCE was reported as high as 528000 µg/l in well 1-74. The earlier sampling also suggest that the PCE plume may extend farther than Figure 2-9 suggests, for occasional samples from wells 39-86, 41-86, 32-87, and 29-87 had PCE concentrations above detection limit. Historical sporadic occurrences of PCE in unweathered sandstone (wells 40-86, 18-87, and 20-87) also may indicate more extensive contamination than implied by second quarter 1989 data alone.

Trichloroethene

The distribution of TCE (Figure 2-10) indicates that all three RI areas are sources of this volatile organic. TCE in wells 1-71, 2-71, 14-87, and 15-87 suggests the upgradient 903 Drum Storage Site and possibly Trench T-2 and the Reactive Metal Destruction Site as potential sources. Similarly, TCE in wells 1-74, 17-87, and 35-86 suggests the Mound Area as a source TCE downgradient of Trenches T-3 and T-4 also indicates these East Trenches as potential sources. Well 36-87 within the latter area exhibited the highest concentration, 12000 µg/l.

The 1987-89 data are consistent with results shown in Figure 2-10, exhibiting detectable TCE in nearly all samplings of the wells listed above. Furthermore, four wells which were not explicitly listed for 1989 did

contain TCE at several previous samplings (39-86, 32-87, 11-87, and 12-87). Isolated occurrences of TCE together with the PCE data for unweathered sandstone wells 40-86, 18-87, and 20-87 suggest that even these bedrock units may be contaminated by volatile organics.

Other Volatile Organic Compounds

Indication of other volatile organic contamination in ground water by second quarter 1989 data are confirmed by the more comprehensive 1987-89 results. Vinyl chloride was present during six sampling events at well 35-86 northwest of the Mound Area in concentrations between 400 and 1000 μg/l. 1,1-dichloroethene (1,1-DCE) appeared consistently in wells 35-86 and 1-71, and occasionally in wells 2-71, 1-74, and 36-87BR. The highest 1,1-DCE result was 1044 mg/l in well 36-87BR. 1,1-dichloroethane (1,1-DCA) appeared as frequently as but in lower concentrations than 1,1-DCE in wells 35-86 and 2-71.

Chloroform ($CHCl_3$) occurred in the majority of samples from wells 42-86, 15-87, 17-87, 2-71, 11-87BR, 14-87, and 36-87BR, commonly in association with other volatile organics. The $CHCl_3$ concentrations were typically over 100 μg/l, and reached as high as 5427 μg/l in 36-87BR. $CHCl_3$ is also reported in two unweathered sandstone wells, 28-87 and 30-87, but these are isolated instances at low concentrations in the absence of other organics. Additional data are required to assess the significance of these data.

Two wells at Operable Unit No. 2 contained 1,1,1-TCA at times in the past (11-87BR and 36-87BR). The highest concentration was 1472 μg/l at 36-87BR.

Methylene chloride and acetone were 119 and 38 μg/l, respectively, at well 36-87BR. The relatively high concentration of these constituents, together with their association with several other organics in well 36-87BR suggest that they are ground-water contaminants in the sandstone unit. However, in other upgradient or surrounding wells, numerous other reports of methylene chloride and acetone are associated with their occurrence in laboratory blanks, and/or their concentrations are very near the detection limits. Such conditions apply to samples from wells 41-86, 17-87, 27-87, 32-87, 35-86, 2-71, 14-87, 20-87, and 31-87, and do not reliably

indicate ground-water contamination with these volatiles Further sampling and analysis is necessary to resolve if methylene chloride and acetone are present at well 36-87BR.

2.3.3.2 Inorganic Contamination

Major Ions

Major ions and total dissolved solids (TDS) are somewhat elevated above background throughout and downgradient of the 903 Pad, Mound and East Trenches Areas (Tables 2-10 and 2-11). Total dissolved solids typically ranged between 400 and 1000 milligrams per liter (mg/l); chloride was generally 30-100 mg/l, nitrate was 2-10 mg/l, and most sulfate concentrations were between 10 and 100 mg/l in the second quarter of 1989. In general, major cations were accordingly elevated. The highest concentrations of major ions are in well 29-87 southeast of the 903 Pad as discussed below, although the northernmost wells (34-87 and 35-87) were quite high also (<1000 TDS).

Major ions in 29-87, a well completed in colluvium southeast of the 903 Pad, were notably higher than other shallow ground-water wells upgradient and closer to the 903 Pad. (TDS - 3219 mg/l; chloride - 819 mg/l; sulfate - 891 mg/l; calcium - 279 mg/l; sodium - 353 mg/l; magnesium - 105 mg/l). The conditions at well 29-87 suggest that the ground-water chemistry there may be strongly influenced by evaporation and associated accumulation of salts. It may be, in effect, in a "saline seep" zone (Miller et al., 1980). The South Interceptor Ditch (SID) is very close to well 29-87; when it recharges local ground water it carries SID salts (in relatively dilute form) and mobilizes salts as it passes through soils (Typical regional soils have not been leached of all naturally occurring salts). Subsequent repetitive seasonal evaporation of ground water at this location would cause accumulation of salts in the local soils, forming a saline reserve which would chemically alter the local ground water. Other upslope non-saline ground-water sources could have the same effect.

TABLE 2-10
DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER
SECOND QUARTER 1989

AREA	WELL NUMBER	Al	Sb	As	Ba	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
ROCKY FLATS ALLUVIUM	BACKGROUND->	ND	ND	ND	ND	85	ND	ND	.266	ND	ND	5.79	.365	.0136	.0432	7.73	ND	ND	13.4	.159	ND	0.141
	33-86	DRY																				
	39-86				*	112						12.1							18.9	.55		
	41-86				.23	125						17.1							21.3	.66		
	42-86				.23	154		.05				13.5							17.8	.57		
	43-86	DRY																				
	10-87	DRY																				
	17-87				.12J	105		.02J				9.5			.047				16.5	.45		
	19-87	DRY																				
	24-87	DRY																				
	26-87	DRY																				
	27-87				.13B	90		.01B				15.8							30.1	.60		
	32-87	DRY																				
	33-87	DRY																				
	35-87	DRY																				
COLLUVIUM	BACKGROUND->	ND	ND	ND	ND	77	ND	ND	ND	ND	.172*	15.3	.088	ND	ND	ND	ND	ND	98.7	ND	ND	ND
	63-86	DRY																				
	67-86	DRY																				
	29-87				.04B	279		.01B		NR	NR	105		.03B	0.42		.388		353	3.94		.11
	44-87	DRY																				
VALLEY FILL ALLUVIUM	BACKGROUND->	ND	ND	ND	ND	138	ND	ND	0.94*	ND	0.28	26.6	0.69*	ND	ND	ND	.011*	ND	88	ND	ND	.021*
	35-86	.04J		.001J	.12J	143					NR	33.7	4.37		.03J	.97J			193	.88		.029
	36-86	DRY																				
	37-86	NSS																				
	64-86	NSS																				
	65-86	DRY																				
	66-86	.05			.08						NR					1.7				.15		.028
	21-87	NSS																				
WEATHERED CLAYSTONE	BACKGROUND->	ND	ND	ND	ND	73.4*	ND	ND	ND	ND	.031*	45.3*	.013*	.015*	ND	ND	ND	ND	36.9*	ND	ND	.107*
	1-71	.03B			.35						NR		.17			1.35J				.54		
	2-71	NSS																				
	1-74	.035J			.17J	88					NR				.03J	.72J				.49		
	3-74	NSS																				
WEATHERED SANDSTONE	BACKGROUND->	ND	ND	ND	ND	65.7*	.012*	ND	ND	ND	.0106*	9.41*	.292*	.015*	ND	ND	ND	ND	25.6*	ND	ND	ND
	62-86	.02J			.04J		.034	.005J			NR	10.0				3.6J	.049		51.6	.41		
	9-87					83.3					NR						.004					
	11-87	DRY																				
	12-87	DRY																				
	14-87			1.6J			.02	.0088			NR	10.4				5.33	.014		89.5	.42		
	23-87	.036J			.17J	111					NR	13.0				1.66J				.55		
	25-87	.04			.22	131					NR					1J				.41		
	36-87	.02B			.26	116		.007	.03		NR					0.9				.29		
UNWEATHERED SANDSTONE	BACKGROUND->	.327*	ND	.019*	ND	64.6	ND	ND	ND	ND	ND	ND	.018*	.112*	ND	21.9*	.041*	ND	599	.45*	ND	.56
	34-86		NR		.03J	224			2.17		NR	71.7	.123							2.99	ND	.56
	40-86										NR	18.7					.22J			.94		
	16-87				.04B						NR	6.01								.33		
	18-87	NSS																				
	20-87	NSS																				
	22-87				.04J						NR	17.5	.045							.89		
	28-87				.18B						NR											
	30-87									.21J	NR	3.51J										
	31-87										NR	1.44J										
	34-87	NSS																				
	45-87				.65J						NR	9.8	0.40							.48		

BACKGROUND: upper tolerance limit or maximum concentration detected in background*
NSS = insufficient sample for analysis J = present below detection limit NR = analysis not performed
Note: No detects above background for any well for: Be, Cd, Cs, Co, Hg, Tl

TABLE 2-10 (Continued)
INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER
SECOND QUARTER 1989

AREA	WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
ROCKY FLATS ALLUVIUM	BACKGROUND->	352	15.6	2.98	45.1	436	ND	.0038*
	33-86	DRY						
	39-86	NSS						
	41-86	482	40.0	7.89	59.6		NR	NR
	42-86	476	49.5	4.39			NR	NR
	43-86	DRY						
	10-87	DRY						
	15-87	NSS						
	17-87	405	37.1				NR	NR
	19-87	DRY						
	24-87	DRY						
	26-87	DRY						
	27-87	439	34.6	8.42	61.5		NR	NR
	32-87	DRY						
	33-87	DRY						
	35-87	DRY						
COLLUVIUM	BACKGROUND->	520*	20*	0.18*	86*	470*	ND	ND
	63-86	DRY						
	67-86	DRY						
	29-87	3219	819	.74	891	719	NR	NR
	44-87	DRY						
VALLEY FILL ALLUVIUM	BACKGROUND->	947	40.3	0.69	150	719	ND	ND
	35-86	990	99.2			768	NR	NR
	36-86	DRY						
	37-86	NSS						
	64-86		76	NR	290			NR
	65-86	DRY						
	66-86						NR	NR
	21-87	NSS						
WEATHERED CLAYSTONE	BACKGROUND->	320*	11*	0.58	44*	400*	ND	.0036*
	1-71		18.1	4.99			NR	
	2-71	NSS						
	1-74	397	24.1	6.03			NR	NR
	3-74	NSS						
WEATHERED SANDSTONE	BACKGROUND->	170*	15*	1.6*	16*	140*	ND	ND
	62.86	277	29.1	2.27	52.3		6.93	NR
	9-87	271		2.35	36.1	184	NR	NR
	11-87	DRY						
	12-87	DRY						
	14-87	288	32.0	1.73	47.2	141	15.9	NR
	23-87	421	62.6	2.44	18.6	259	NR	NR
	25-87	482	41.1	7.11	27.9	281	NR	NR
	36-87	486	38.3	7.95	25.0	281	NR	NR
UNWEATHERED SANDSTONE	BACKGROUND->	1761	607	0.61	950	412	49	ND
	34-86						NR	NR
	40-86			1.33			NR	NR
	16-87			2.02				
	18-87	NSS						
	20-87	NSS						
	22-87						3.14	NR
	28-87	NSS						
	30-87							
	31-87						15.2	NR
	34-87	NSS						
	45-87						NR	NR

BACKGROUND: upper tolerance limit or maximum concentration detected in background*
NSS = insufficient sample for analysis J = present below detection limit NR = analysis not performed

TABLE 2-10 (Cont[illegible])
DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER
SECOND QUARTER 1989

AREA	WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
ROCKY FLATS ALLUVIUM	BACKGROUND->	12*	13*	1.3*	0*	1.1*	.01*	0*
	33-86	DRY						
	39-86	NSS						
	39-86			2.9	.07	1.9		
	41-86			3.9	.06	2.3		
	42-86			2.4	.05	1.5		
	43-86	DRY						
	10-87	DRY						
	15-87	DRY						
	17-87			1.7	.03	1.3		
	19-87	DRY						
	24-87	DRY						
	26-87	DRY						
	27-87	DRY						
	32-87			3.4	.05	1.6		
	33-87	DRY						
	33-87	DRY						
COLLUVIUM	BACKGROUND->	27*	12*	11*	0.3*	7.7*	0*	0*
	63-86							
	67-86	DRY						
	29-87			NR	NR	NR		
	44-87	DRY						
VALLEY FILL ALLUVIUM	BACKGROUND->	10*	14*	4.1*	0.1*	2.8*	.01*	0*
	35-86							
	36-86	DRY						
	37-86							
	64-86			3.0	.07	2.5		NR
	65-86			2.8	.07	2.3		
	66-86							
	21-87	NSS						
WEATHERED CLAYSTONE	BACKGROUND->	12*	7*	5.8*	.2*	3.2*	.03*	0*
	1-71			NR	NR	NR		
	2-71	NSS						
	1-74	NSS						
	3-74	DRY						
WEATHERED SANDSTONE	BACKGROUND->	7*	2*	1.1*	0*	0.6*	.01*	.01*
	62-86	NR	NR	NR	NR	NR	NR	NR
	9-87			1.1	.04	.67		
	11-87	DRY						
	12-87	DRY						
	14-87			1.8	.05	1.3		
	23-87		4	3.3	.09	2.1		
	25-87			1.8	.09	.92		
	36-87			2.3	.03	.98		
UNWEATHERED SANDSTONE	BACKGROUND->	13*	15*	7.5*	.1*	1.9*	0*	.01*
	34-86							
	40-86	NSS						
	16-87			2.7	.03			
	18-87	NSS						
	20-87	NSS						
	22-87					1.4		
	28-87	NSS						
	30-87							
	31-87							
	34-87	NSS						
	45-87	NR	NR	NR	NR	NR	NR	NR

BACKGROUND: upper tolerance limit or maximum concentration detected in background*
NSS = insufficient sample for analysis J = present below detection limit NR = analysis not performed

TABLE 2-11

ROCKY FLATS ALLUVIUM

MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS

EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	ND	ND	ND	ND	ND	85	ND	ND	.266	ND	ND	5.79	.365	.0136	.0432	7.73	ND	ND	13.4	.159	ND	.141
39-86																						
MAXIMUM	.085			.28		120					0.1U	13.4							18.9	.55		
FREQUENCY	6/16			13/14		13/13					0/3	14/16	1/16						14/16	14/16		
33-86	DRY	1987-	1989																			
41-86																						
MAXIMUM	.07	.04		.23		130	.012	.02	.58		0.1U	17.8	.85		.075	8.2		.03	51.3	.67	.037	
FREQUENCY	4/10	1/10		8/10		8/10	2/10	4/10	1/10		0/2	9/10	1/10		2/10	1/10		1/10	9/10	9/10	1/4	
42-86																						
MAXIMUM	2.6	.04		.33		165	.02	.06	2.1	.013	0.1U	14.9	.61		.10			.13	18.1	.57	.039	
FREQUENCY	5/14	1/14		13/14		13/14	1/14	4/14	9/14	2/14	0/2	13/14	9/14		4/14			1/14	13/14	12/14	1/8	
43-86																						
MAXIMUM	.04			.16		95						10.5		.024					14.2	.43		
FREQUENCY	1/3			3/3		2/3						3/3		1/3					2/3	3/3		
10-87	DRY	1987-	1989																			
15-87																						
MAXIMUM	.05	.019		.19		134	.038	.01	.05		.1U	11.1						.04		.49		
FREQUENCY	3/6	1/5		5/6		6/6	1/6	3/6	2/6		0/4	6/6						1/6		6/6		
17-87																						
MAXIMUM	.07			0.16		117	.01	.42	.05		.1U	13.3	1.27		.69				28.5	.60		2.56
FREQUENCY	4/9			5/9		9/9	1/9	7/9	5/9		0/3	9/9	1/9		9/9				9/9	9/9		3/7
19-87	DRY	1987-	1989																			
24-87	DRY	1987-	1989																			
26-87	DRY	1987-	1989																			
27-87																						
MAXIMUM	.05			.12		95		.008			NR	15.8	.009					.01	30.1	.60		
FREQUENCY	2/5			3/5		4/5		2/5				5/5	1/5					1/5	5/5	5/5		
32-87																						
MAXIMUM	.04			.20		129	.04	.22			.1U	19.4	.62		.37				31.8	.63		.98
FREQUENCY	3/6			4/5		4/5	1/5	3/6			0/1	5/6	2/6		3/6				5/6	5/6		4/6
33-87	DRY	1987-	1989																			
35-87	DRY	1987-	1989																			

NSS = Insufficient Sample for Analysis ND = Not Detected

*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
COLLUVIUM
MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	ND	ND	ND	ND	ND	77	ND	ND	ND	ND	.172*	15.3	.088	ND	ND	ND	ND	ND	98.7	ND	ND	ND
63-86	DRY																					
67-86																						
MAXIMUM	.04			.25		89		.018		.022	NR	38.1	.17					.016		1.2	.036	.068
FREQUENCY	2/5			5/5		3/5		2/5		1/5		5/5	2/5					1/5		5/5	1/5	2/5
29-87																						
MAXIMUM	.09	.12		.07		355	.03	.84				136	.39	.08	1.41	5.2	.39		405	4.95		2.77
FREQUENCY	4/8	3/7		5/8		7/8	3/8	5/8				7/8	2/8	3/8	7/8	4/6	4/5		7/8	7/8		7/8
44-87	DRY																					

NSS = Insufficient Sample for Analysis ND = Not Detected
*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
VALLEY FILL ALLUVIUM
MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	ND	ND	ND	ND	ND	138	ND	ND	.94*	ND	.28	26.6	.69*	ND	ND	ND	.011*	ND	88	ND	ND	.021*
35-86																						
MAXIMUM	.11	.05		.12		170	.027	.01				68	4.37			2.3			210	.96		.04
FREQUENCY	4/12	2/12		8/12		9/12	1/12	6/12				12/12	11/12			6/12			12/12	12/12		7/12
36-86	DRY																					
37-86	DRY																					
64-86																						
MAXIMUM	.043			.11				.034			.1U		.78	.027	.049	2.4			167	.70		
FREQUENCY	2/5			4/5				3/5			0/3		1/5	2/5	2/5	3/5			3/5	4/5		
65-86																						
MAXIMUM	.24	.078		.24				.02		.04	.1U				.053	2.7				0.78		.099
FREQUENCY	4/10	2/10		5/10				2/10		2/10	0/4				1/10	5/10				7/10		6/10
66-86																						
MAXIMUM	.053			.11				.007		.04	.1U			.10	1.7					.37		.072
FREQUENCY	3/7			4/7				1/7		2/7	0/5			3/7	2/7					5/7		5/7
21-87	NSS																					

NSS = Insufficient Sample for Analysis ND = Not Detected
*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
WEATHERED CLAYSTONE
MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	ND	ND	ND	ND	ND	73.4*	ND	ND	ND	ND	.031*	45.3*	.015*	ND	ND	ND	ND	ND	36.9*	ND	ND	.107*
1-71																						
MAXIMUM	.06	.036		.30		87		.016	1.23	.02	.1 U		.16		.05	2.6	.015			.58		
FREQUENCY	4/15	3/15		13/15		7/15		2/15	11/15	1/15	0/3		14/15		1/15	9/15	1/15			14/15		
2-71																						
MAXIMUM	.064	.071		.16		201	.029	.02	.92	.019	.07J		.80	.192	.05	2.7	.04	.02	259	1.61		
FREQUENCY	4/11	1/11		10/11		6/11	3/11	2/11	9/11	1/11	0/3		11/11	1/11	2/11	6/10	10/10	1/11	11/11	11/11		
1-74																						
MAXIMUM	.066			.18		116		.015	.06	.008	.1 U		.34			3.8				.83		
FREQUENCY	4/11			8/11		11/11		3/11	6/11	2/11	0/3		3/11			6/11				11/11		
3-74																						
MAXIMUM	.39			.29		135	.12	.02	.35	.007	.1 U		.063		.045	1.0				.40		.36
FREQUENCY	4/8			7/8		6/8	1/8	5/8	6/8	1/8	0/2		1/11		1/11	6/8				8/8		5/8

NSS = Insufficient Sample for Analysis ND = Not Detected
*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
WEATHERED SANDSTONE
MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	ND	ND	ND	ND	ND	65.7*	.012*	ND	ND	ND	.0106*	9.41*	.292*	.015*	ND	ND	ND	ND	25.6*	ND	ND	ND
62-86																						
MAXIMUM	4.75	.058	.007	.13			.045	.017	2.9	.021	.04	12.4			.10	44.5	.07		62.2	.52		.092
FREQUENCY	12/15	1/15	1/15	8/15			12/15	3/15	9/15	2/15	1/5	9/15			4/15	14/15	13/15		15/15	15/15		5/15
9-87																						
MAXIMUM	.05			.12		103	.021	.024	.073		.1 U						.004			.36		.04
FREQUENCY	3/9			5/9		8/9	2/9	2/9	4/9		0/3					5/9	1/9			8/9		5/9
11-87																						
MAXIMUM				.13		117					.07	29.0	.39		.26	7.9	.02		51.3	.96		
FREQUENCY				2/2		2/2					1/2	2/2	2/2		1/2	2/2	2/2		2/2	2/2		
12-87																						
MAXIMUM	.085			.084			.056	.01	.21		.13				.12	3.5				.27		.05
FREQUENCY	3/4			4/4			1/4	3/4	4/4		2/3				4/4	4/4				4/4		2/4
14-87																						
MAXIMUM	1.20	.029		.93		408	.04	.01	.06		.10	11.8				31	.014		96.2	7.7	.092	.03
FREQUENCY	6/12	1/12		6/12		2/12	7/12	5/12	4/12		1/6	1/12				7/12	7/12		10/12	8/12	3/12	3/12
23-87																						
MAXIMUM	.17			.19		130	.068	.015	.19		.1	14.4			.056	4.6				.62	.028	.08
FREQUENCY	3/10			6/10		10/10	1/10	1/10	5/10		0/3	10/10			1/10	5/10				10/10	1/10	5/10
25-87																						
MAXIMUM	2.68			.17		130	.07	.013	4.35				.71	.023		3.9				.38		
FREQUENCY	4/9			7/9		9/9	2/9	1/9	6/9				2/9	1/9		4/9				9/9		
36-87																						
MAXIMUM	.068			.22		123	.02	.01	.03		.1 U	10.4	.35		.05	1.85				.43		.037
FREQUENCY	3/7			7/7		7/7	2/7	2/7	5/7		0/1	3/7	7/7		2/7	5/7				7/7		4/7

NSS = Insufficient Sample for Analysis ND = Not Detected
*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-[illegible] d)
UNWEATHER[illegible]NDSTONE
MAXIMA AND FREQUENCY OF DISSOLVED METAL CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	Al	Sb	As	Ba	Cd	Ca	Cr	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Sr	Vn	Zn
BACKGROUND->	.327*	ND	.019*	ND	ND	64.6	ND	ND	ND	ND	ND	ND	.018*	.112*	ND	21.9*	.041*	ND	599	.45*	ND	.56
34-86																						
MAXIMUM		.11		.09		242	.017	.012	2.18		.2	92	.14							3.1		
FREQUENCY		2/11		9/11		11/11	4/11	4/11	11/11		1/2	11/11	9/11							11/11		
40-86																						
MAXIMUM	.47			.073		153	.027	.01	.24		.04 J	31.3	.54	.10	.05			.03		1.49		
FREQUENCY	2/5			4/4		4/4	1/4	3/5	4/5		0/3	5/5	4/5	4/5	3/5			1/4		4/4		
16-87																						
MAXIMUM				.08			.028	.011	.14		.05 J	5.97		.037						.35		
FREQUENCY				6/8			3/8	2/8	5/8		0/3	7/8		5/8						7/8		
18-87																						
MAXIMUM	.09			.11				.04	.06			1.1	.12	.029	.066			.01		.11		
FREQUENCY	1/1			1/1				1/1	1/1			1/1	1/1	1/1	1/1			1/1		1/1		
20-87																						
MAXIMUM	.26		.007	.03				.007	.034		.1 U	.034		.057						.44	.038	
FREQUENCY	1/1		1/1	1/1				1/1	1/1		0/1	1/1		1/1						1/1	1/1	
22-87																						
MAXIMUM	.05			.06			.012	.018	.04		.1 U	17.5	.07	.08						.89	.10	
FREQUENCY	4/6			4/6			2/6	2/6	4/6		0/1	6/6	6/6	5/6						6/6	1/3	
28-87																						
MAXIMUM	.27			.09				.05	.18		.1 U	3.1	.03	.13						.24		
FREQUENCY	1/3			2/3				1/3	2/3		0/1	2/3	1/2	2/3						2/3		
30-87																						
MAXIMUM	.08		.04	.10					.07	.009	.1 U	3.42		.025			.1			.33		
FREQUENCY	5/9		3/9	7/9					7/9	1/9	0/3	7/9		1/9			1/9			8/9		
31-87																						
MAXIMUM	.26		.019	.05				.014	.17		.1 U	1.02		.05						.23		
FREQUENCY	5/7		3/6	4/6				3/7	5/7		0/1	5/7		4/6						6/7		
34-87																						
MAXIMUM	.12		.007	.05			.012	.013	.97		.22	164	.15	.036						2.60		
FREQUENCY	2/4		1/4	3/4			3/4	2/4	3/4		1/1	3/4	3/4	3/3						3/4		
45-87																						
MAXIMUM	.13			.17	.006			.01	.12		.06 J	13.3	.40	.065	.039					.49		
FREQUENCY	4/8			6/8	1/8			3/8	5/8		0/3	8/8	8/8	4/4	1/8					7/8		

*Max. of background conc. range MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
ROCKY FLATS ALLUVIUM
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND->	352	15.6	2.98	45.1	436	ND	.0038*
33-86	DRY						
39-86							
MAXIMUM	452	41.0	7.2	66.3		NR	
FREQUENCY	12/12	12/12	12/12	11/12			0/3
41-86							
MAXIMUM	1806	947	13.6	78.5		NR	
FREQUENCY	10/10	10/10	9/10	10/10			0/3
42-86							
MAXIMUM	526	57.0	7.2	70.0		NR	
FREQUENCY	10/11	11/11	10/11	1/11			0/3
43-86						NR	
MAXIMUM	409	51.0	7.9				
FREQUENCY	2/3	3/3	3/3				0/3
10-87	DRY						
15-87							
MAXIMUM	487	58.8	9.1			NR	
FREQUENCY	3/3	3/3	3/3				
17-87							
MAXIMUM	466	275		83.0		NR	
FREQUENCY	7/7	7/7		3/7			0/0
19-87	DRY						
24-87	DRY						
26-87	DRY						
27-87							
MAXIMUM	439	34.6	9.92	77.3		NR	NR
FREQUENCY	4/4	4/4	3/3	4/4			
32-87							
MAXIMUM	630	40.7	15.5	113		NR	NR
FREQUENCY	6/6	6/6	6/6	6/6			
33-87	DRY						
35-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
COLLUVIUM
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND->	520*	20*	0.18*	86*	470*	ND	ND
63-86	DRY						
67-86							
MAXIMUM	564	47.2	4.9	110		NR	
FREQUENCY	3/3	3/3	3/3	2/3			0/3
29-87							
MAXIMUM	3219	819	.96	1157		NR	NR
FREQUENCY	7/7	7/7	6/7	7/7			
44-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
VALLEY FILL ALLUVIUM
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND->	947	40.3	0.69	150	719	ND	ND
35-86							
MAXIMUM	1011	108					
FREQUENCY	9/11	11/11		3/11			
36-86	DRY						
37-86	DRY						
64-86							
MAXIMUM		54.1	1.28	180			
FREQUENCY		3/4	2/4	3/4		0/1	0/1
65-86							
MAXIMUM		64.0		190			
FREQUENCY		5/5		1/5			0/4
66-86							
MAXIMUM		51					
FREQUENCY		3/7				0/1	0/3
21-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
WEATHERED CLAYSTONE
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND ->	320*	11*	0.58	44*	400	ND	.0036*
1-71							
MAXIMUM	329	21.5	7.3				
FREQUENCY	2/14	14/14	14/14				0/5
2-71							
MAXIMUM	1627	573	5.4			NR	
FREQUENCY	9/9	9/9	9/9				0/5
1-74							
MAXIMUM	490	30.5	9.8			NR	
FREQUENCY	9/9	9/9	9/9				0/3
3-74							
MAXIMUM	490	122	9.6			NR	
FREQUENCY	7/7	6/7	7/7				0/3

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
WEATHERED SANDSTONE
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND->	170*	15*	1.6*	16*.	140*	ND	ND
62-86							
MAXIMUM	328	102	7.41	90	178	9	
FREQUENCY	12/12	12/12	11/12	12/12	6/12	3/3	0/5
9-87							
MAXIMUM	311		2.96	56.8	198	NR	NR
FREQUENCY	8/8		8/8	8/8	8/8		
11-87							
MAXIMUM	654	92.4	2.25	108	368	NR	
FREQUENCY	3/3	3/3	3/3	3/3	3/3		0/2
12-87							
MAXIMUM	641	57	1.6	203	354	NR	NR
FREQUENCY	3/3	3/3	3/3	3/3	3/3		
14-87							
MAXIMUM	661	32.1	1.83	48.8	530	505	
FREQUENCY	9/9	3/9	9/9	9/9	1/9	7/7	0/1
23-87							
MAXIMUM	459	65.8	2.98	70.4	261	NR	
FREQUENCY	8/8	8/8	8/8	8/8	8/8		0/1
25-87							
MAXIMUM	496	41.1	8.02	52	281	NR	NR
FREQUENCY	9/9	9/9	9/9	9/9	9/9		
36-87							
MAXIMUM	486	218	8.06	43.5	281	NR	NR
FREQUENCY	7/7	7/7	7/7	7/7	6/7		

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-11 (Continued)
UNWEATHERED SANDSTONE
MAXIMA AND FREQUENCY OF INORGANIC CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	T.D.S.	CHLORIDE	NITRATE	SULFATE	BICARBONATE	CARBONATE	CYANIDE
BACKGROUND->	1761	607	0.61	950	412	49	ND
34-86 MAXIMUM	1813			1084		NR	
FREQUENCY	4/11			4/11			0/4
40-86 MAXIMUM		19.9	6.62			NR	
FREQUENCY		1/6	5/5				0/2
16-87 MAXIMUM			2.02			5.5	
FREQUENCY			4/8			1/1	0/1
18-87 MAXIMUM						NR	NR
FREQUENCY	0/1	0/1	0/1	0/1	0/1		
20-87 MAXIMUM						35.9	NR
FREQUENCY	0/1	0/1	0/1	0/1	0/1	1/1	
22-87 MAXIMUM						3.14	NR
FREQUENCY						1/1	
28-87 MAXIMUM							NR
FREQUENCY							
30-87 MAXIMUM						NR	NR
FREQUENCY							
31-87 MAXIMUM			3.55			21.1	
FREQUENCY			1/7			6/6	
34-87 MAXIMUM							
FREQUENCY							
45-87 MAXIMUM							
FREQUENCY						0/1	0/1

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Cont[illegible])
ROCKY FLATS ALLUVIUM
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	12*	13*	1.3*	0*	1.1*	.01*	0*
33-86	DRY						
39-86							
MAXIMUM	26	32	2.9	.17	1.9		
FREQUENCY	2/9	3/9	7/7	5/7	7/7		
41-86							
MAXIMUM	19	85	3.9	.18	2.4		
FREQUENCY	1/6	4/6	5/5	5/5	5/5		
42-86							
MAXIMUM	215	144	2.8	.08	2.6	0.18	
FREQUENCY	1/7	1/7	1/6	1/6	1/6	1/6	
43-86							
MAXIMUM							
FREQUENCY							
10-87	DRY						
15-87							
MAXIMUM	46		2.9		2.74	0.52	0.83
FREQUENCY	3/4		3/4			1/4	1/4
17-87							
MAXIMUM	18	18	5.2	.25	4.1		
FREQUENCY	1/6	1/6	3/5	4/4	3/4		
19-87	DRY						
24-87	DRY						
26-87	DRY						
27-87							
MAXIMUM		14.3	4.6	.12	3.2		
FREQUENCY		113	2/2	2/2	2/2		
32-87							
MAXIMUM	78	61	4.6	.28	2.8		0.1
FREQUENCY	3/5	1/5	4/4	4/4	4/4		1/4
33-87	DRY						
35-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis *ND - Not Detected* *NR - Not Reported*
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Continued)
COLLUVIUM
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	27*	12*	11*	0.3*	7.7*	0*	0*
63-86	DRY						
67-86							
MAXIMUM		49	1.6		2.5		
FREQUENCY		1/1	1/1		1/1		
29-87							
MAXIMUM	32	33	15	.73	11		
FREQUENCY	1/6	1/6	3/3	3/3	3/3		
44-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Continued)
VALLEY FILL ALLUVIUM
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	10*	14*	4.1*	0.1*	2.8*	.01*	0*
35-86							
MAXIMUM			4.8		3.2		
FREQUENCY			1/8		1/8		
36-86	DRY						
37-86	DRY						
64-86							
MAXIMUM				.17			
FREQUENCY				1/2			
65-86							
MAXIMUM	10			.4	4.0		
FREQUENCY	1/4			2/3	1/3		
66-86							
MAXIMUM							
FREQUENCY							
21-87	DRY						

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Continued)
WEATHERED CLAYSTONE
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	12*	7*	5.8*	.2*	3.2*	.03*	0*
1-71							
MAXIMUM		14	6.3	.5	4.1		
FREQUENCY		2/6	1/6	1/6	1/6		
2-71							
MAXIMUM	37	25	25	.9	18		
FREQUENCY	3/4	1/4	6/6	5/5	6/6		
1-74							
MAXIMUM							
FREQUENCY							
3-74							
MAXIMUM	250	372	2.4				
FREQUENCY	1/5	1/5	1/5				

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Continued)
WEATHERED SANDSTONE
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	7*	2*	1.1*	0*	0.6*	.01*	.01*
62-86							
MAXIMUM	27	24	4.3	.3	9.5		
FREQUENCY	1/5	1/5	4/5	5/6	5/6		
9-87							
MAXIMUM		3.3		.05	.67		
FREQUENCY		1/7		2/3	3/3		
11-87							
MAXIMUM	28		9.6		6.5	.20+/-.07	.06+/-.05
FREQUENCY	1/2		1/2		2/2	1/2	1/2
12-87							
MAXIMUM	121	57	34	1.7	28		
FREQUENCY	4/4	4/4	3/3	3/3	3/3		
14-87							
MAXIMUM	17	19	6.7	.05	4.3		
FREQUENCY	3/7	5/7	2/2	1/1	2/2		
23-87							
MAXIMUM	39	5.9	6.7	.14	4.3		
FREQUENCY	2/7	3/7	5/5	5/5	5/5		
25-87							
MAXIMUM	19	7.4	3.2	.09	1.8		
FREQUENCY	1/8	1/8	6/6	1/5	5/5		
36-87							
MAXIMUM	17	23	2.3	.10	1.4		
FREQUENCY	2/6	3/6	3/4	2/4	3/4		

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

TABLE 2-1 (Continued)
UNWEATHERED SANDSTONE
MAXIMA AND FREQUENCY OF DISSOLVED RADIOCHEMISTRY CONCENTRATIONS
EXCEEDING BACKGROUND IN GROUND WATER (1987-1989)

WELL NUMBER	ALPHA	BETA	U233,U234	U235	U238	PU239,PU240	AM241
BACKGROUND	13*	15*	7.5*	0.1*	1.9*	0*	.01*
34-86							.11+/-.05
MAXIMUM				.18			1/7
FREQUENCY				1/7			
40-86							
MAXIMUM	106	207		.45	3.9		
FREQUENCY	3/3	2/3		3/3	3/3		
16-87							
MAXIMUM	48	16		.21	2.2		
FREQUENCY	3/8	1/8		2/4	1/4		
18-87							
MAXIMUM		24					
FREQUENCY		1/1					
20-87							
MAXIMUM		37	NR	NR	NR		
FREQUENCY		1/1					
22-87							
MAXIMUM	22			.18	1.6		.11+/-.08
FREQUENCY	1/6			2/5	5/5		1/5
28-87							
MAXIMUM							
FREQUENCY							
30-87							
MAXIMUM	33						.17+/-.12
FREQUENCY	1/7						1/6
31-87							
MAXIMUM	36						
FREQUENCY	1/6						
34-87							
MAXIMUM		16		.21			
FREQUENCY		1/4		1/4			
45-87							
MAXIMUM	32	113		.12			
FREQUENCY	2/5	5/5		1/5			

*Max. of background conc. range NSS - Insufficient Sample for Analysis ND - Not Detected NR - Not Reported
MAXIMUM - Maximum conc. above background reported over course of Phase I RI sampling FREQUENCY - no. of values above background / no. of samples analyzed.

In general, this evaporative concentration effect may explain the elevated TDS southeast of the 903 Pad where surface seeps are abundant, and evaporative mineral deposits in the soils are likely. This is discussed further in Section 2.3.8.

Metals

In the second quarter 1989 data for all the wells at the 903 Pad, Mound and East Trenches Areas, all of the dissolved metals except beryllium, cadmium, cobalt, cesium, and thallium exceeded background, and all the wells had some subset of these metals occurring above background concentrations (Table 2-10). When multiple samplings are accounted for (Table 2-11), it becomes more apparent that only a subset of the analytes repeatedly exceed background and/or exceed background by a wide margin.

Barium and strontium exceeded background more consistently than all of the other trace metals, with maximum concentrations of 0.93 mg/l and 7.7 mg/l, respectively (both in well 14-87). The relatively uniform concentrations of barium (0.1-0.2 mg/l) may indicate that the solubility of barium sulfate is controlling the barium concentration. Equilibrium control of barium is typical for natural waters (Hem, 1985), and the observed barium and sulfate concentrations are consistent with the barium sulfate solubility product of 10^{-10} (Sillen and Martel, 1964). Similarly, strontium may be controlled by the solubility of a strontium sulfate mineral in waters where strontium is sufficiently high (Hem, 1985).

Several other trace metals less consistently (with respect to time) and less ubiquitously occurred above background. These include copper, iron, molybdenum, nickel, selenium, vanadium, and zinc. In many instances these elements occur at low concentrations near background so that geochemical phenomena e.g. adsorption on oxides, ion exchange, and/or biological activity may control their concentration more so than contaminant releases from sources (if they exist). There are no absolute criteria with which to define such thresholds, but the following discussion focusses on wells which repeatedly exhibit unusually high metal concentrations and/or concentrations consistently above background. Table 2-11 provides the maximum metal concentrations and their frequency of occurrence above background.

In the 903 Pad Area, well 29-87 has generally consistent above background concentrations of copper, nickel, zinc, and selenium. Well 62-86 is noteworthy because of consistently elevated chromium (albeit low concentrations), and well 2-71 is noted for consistently elevated but low concentrations of selenium. In the Mound Area, well 17-87 has high concentrations of copper, nickel, and zinc. In the East Trenches Area, well 42-86 has high iron and manganese; well 32-87 has high copper, nickel and zinc; and well 3-74 has high iron and zinc. In general, antimony, lead, lithium, silver, mercury, and cobalt exceeded background infrequently and by a very small margin in ground water at the 903 Pad, Mound and East Trenches Areas.

Radionuclides

All three uranium isotopes were above background at the 903 Pad, Mound and East Trenches Areas, in the first quarter of 1989. Other radionuclides were not present above background in the first quarter of 1989, but there were seven earlier samples that contained plutonium and/or americium above background. Results at wells 15-87 and 11-87 were the most elevated (plutonium - 0.522 $\pm$ .117 pCi/l and 0.199 $\pm$ 0.07 pCi/l; americium - 0.831 $\pm$ 0.148 pCi/l and 0.06 $\pm$ .05 pCi/l). Several results showed strontium-89,90 and tritium slightly above background, but these radionuclides were not reported for most of the samples and detection limits were commonly above background. Cesium-137 was not reported. The data for these three radionuclides are inadequate to assess contamination.

Several wells within or downgradient of the 903 Pad Area exhibit uranium 238 in excess of background, with a maximum of 28 $\pm$ 2 pCi/l at well 12-87 (in weathered sandstone). Other wells in the 903 Pad Area, 2-71 (in Rocky Flats Alluvium) and 29-87 (in colluvium), showed elevated uranium concentrations in the majority of samplings. Uranium concentrations in downgradient wells 62-86 and 14-87 (in weathered sandstone) and in 1-71 (inferred to be in weathered claystone) are lower than at well 12-87, but they are nevertheless above background. Therefore, the downgradient limit of uranium contamination at the 903 Pad Area is not established. Wells in unweathered sandstone in the vicinity of the pad (16-87, 30-87, and 45-87) contain slightly elevated or no uranium 238 above background (maximum concentration was 1.4 pCi/l in well 45-87) providing inadequate evidence of radionuclide contamination in unweathered bedrock.

Mound Area wells 23-87 (in weathered sandstone) and 17-87 (in Rocky Flats Alluvium) both contained uranium above background at numerous samplings, whereas wells 1-74 (in weathered claystone) and 35-86 (in valley fill alluvium) did not contain above background uranium. Uranium concentrations are only slightly above background and therefore do not unequivocally indicate contamination.

Uranium 238 was detected above background in the East Trenches Area in the following wells: 25-87 and 36-87 (in weathered sandstone); and 42-86, 32-87, 41-86, and 39-86 (in Rocky Flats Alluvium). The only well that did not have above background concentrations of uranium in the vicinity of the East Trenches Areas was 3-74 (in weathered claystone). The areal distribution of uranium in this area is not well known.

2.3.4 Surface Water

Twenty-six surface water and surface seep samples in the vicinity of the 903 Pad, Mound, and East Trenches Areas were collected during field activities. The following discussion is based on all available data because many seeps or stream stations are dry during some samplings. Appendix C contains all available data from 1986 through 1990. These data have been summarized (Appendix D) and compared to Applicable or Relevant and Appropriate Requirements (ARARs) (see Section 2.4 for ARAR identification) because contaminated surface water has been targeted for an Interim Measures/Interim Remedial Action (IM/IRA). An IM/IRA plan is in the planning stage. The following discussion makes reference to the tables in Appendix D. Total radiochemical and metals data, although presented in the Appendix, are not discussed because an assessment methodology that accounts for varying concentrations of suspended solids is still being developed.

A discussion of surface water chemistry for the 903 Pad, Mound, and East Trenches Areas is also one of ground-water chemistry as most of the surface water samples collected for this investigation are from seeps that represent the surfacing of ground water. In addition there is frequent interaction of surface water and ground water in the drainages. The seeps are ponded water located downslope and southeast of the 903 Pad Area or located downslope and north of the Mound Area and East Trenches Area. Surface water flowing in drainages was sampled at stations on the South Interceptor Ditch and Woman Creek just upstream of Pond C-2 and at stations upstream of the B-series ponds on South Walnut Creek. The B-series ponds were not

sampled for this investigation, as they will be subsequently investigated as part of another operable unit. Surface water locations are shown on Figure 2-11.

2.3.4.1 Surface Water Stations Southeast of 903 Pad Area

There are several seeps downslope to the southeast of the 903 Pad. Surface water stations established at these seeps in the 903 Pad Lip Area are designated SW-50, SW-51, SW-52, SW-55, SW-57, SW-58, and SW-77. Station SW-50 is closest to the 903 Pad, and SW-57 and SW-52 are south of SW-50. SW-51 and SW-58 are located in a ditch along the road east of SW-50; however only overland flow of seepage from SW-50, SW-52, and SW-57 will also enter the ditch. Water in the ditch passes under the road south of these locations through a culvert. The discharge of the culvert is SW-55. SW-77 another seep located on the east side of the road, just north of SW-55. It is noted therefore, that SW-51, SW-58, and SW-55 are physically connected and likely receive flow from SW-50, SW-52, and SW-57. Farther downgradient stations include seeps at SW-53, SW-62, SW-63, and SW-64; SW-27, SW-30, SW-54, and SW-70 on the South Interceptor Ditch; and SW-26, SW-28, and SW-29 on Woman Creek.

Data for seeps in the vicinity of the 903 Pad Lip Site (Table D-1) and farther downgradient at SW-53, SW-63, and SW-64 indicate organic contamination. Contaminants in seeps in the vicinity of the 903 Lip Site include 1,1-DCE, 1,2-dichloroethene (1,2-DCE), CCl_4, TCE, and PCE with concentrations of CCl_4 and TCE exceeding 1000 μg/l. 1,2 DCE and TCE are occasionally present at SW-53, low concentrations of CCl_4 and TCE (<20 μg/l) occur at SW-63, and low concentrations of TCE occur at SW-64. Methylene chloride also occasionally occurs in these seeps but at concentrations near the detection limit and frequently also occurs in the laboratory blanks. Low and very infrequent concentrations of these and other volatiles occur at seep SW-62 as well as stations along the South Interceptor Ditch and Woman Creek are free of organic contamination. The data do not provide convincing evidence of impacts at these stations; however, the volatile organic concentrations in the upgradient seeps suggest that a solvent plume within alluvial ground water is migrating to the southeast, which is consistent with the alluvial ground-water flow direction. It is inferred that organic contaminated alluvial ground water approaches the South Interceptor Ditch and Woman Creek.

With respect to inorganic and dissolved radionuclide contamination, there are somewhat elevated concentrations of TDS, major ions, strontium, zinc, and uranium at most of these stations. Unlike the absence of volatiles in surface water at stations along the South Interceptor Ditch (SW-70, SW-30, SW-54, and SW-27), all have somewhat elevated uranium concentrations (generally less than 10 pCi/l of total uranium). These concentrations are usually above ARAR (5 pCi/l). Although the 903 Pad Area cannot be ruled out as the source of the uranium, the occurrence of elevated uranium as far upgradient as SW-70 suggests the 881 Hillside Area as a potential source. Alluvial ground water at the 881 Hillside contains above background levels of uranium.

Seeps in the vicinity of the 903 Pad Lip Site (SW-50, SW-53, and SW-54), had detectable plutonium and/or americium during one event in 1989 (two events for SW-53). The samples contained substantial suspended solids and were not filtered at the time of collection, and surface soils in the vicinity of the seeps are contaminated with radionuclides. Furthermore, total radiochemistry data do indicate notably higher plutonium and americium concentrations than in filtered samples, demonstrating that most of the radionuclides are in a particulate form. Therefore, the local soils represent the most direct potential source for seep contamination. However, there were traces of plutonium and americium in a few ground-water samples (highest concentrations at wells 15-87 - 0.522 $\pm$ 0.117 pCi/l and 0.031 $\pm$ 0.148 pCi/l, respectively) so ground water is also a potential source of radionuclides in seeps, albeit a less significant one. It is noted that plutonium and americium are essentially insoluble but can migrate in colloidal form, and colloidal-size particles can pass through 0.45 um filters such as those used in the Phase I RI (Puls and Barcelona, 1989).

Regardless of the transport mode, total plutonium concentrations occur above background at station SW-29 on Woman Creek (range: <MDA - .315 $\pm$ .115 pCi/l), and dissolved plutonium was just detectable during one sampling event (.159 $\pm$ .142 pCi/l). Dissolved plutonium was also just detectable at station SW-70 on the SID (.11 $\pm$ .09 pCi/l); however, the total plutonium concentration was 0.011 $\pm$ .057 pCi/l during this sampling event rendering this data questionable. The one datum that exists in the remedial investigation data base indicates total plutonium is not above background in Pond C-2 (dissolved radionuclide data are unavailable).

Surface water (and ground-water) sampling at these stations will continue for the Phase II RI to better define surface water/ground-water interaction and the extent of contamination. Samples will be analyzed for both total and dissolved radionuclides and metals.

2.3.4.2 Upper South Walnut Creek

At the Mound Area, station SW-60 is a corrugated metal pipe discharging South Walnut Creek flow which originates to the west of SW-56 (not sampled in 1989). Station SW-56 and SW-101 are on a ditch that appears to be seepage from the base of the hill to the south. The ditch is not part of the main flow of South Walnut Creek, as the creek is routed beneath this area by the corrugated metal pipe. Water in the ditch eventually discharges to South Walnut Creek through a concrete pipe. The flow in South Walnut Creek upstream of Pond B-4 is primarily the combined flow from the discharge of these culverts and a spring (SW-59) located at the base of the hill to the south and downstream of the culverts. This combined flow is sampled at SW-61 located at the confluence.

The upper reaches of South Walnut Creek as characterized by data for stations SW-56, SW-59, SW-60, SW-61, and SW-101 contain CCl_4, PCE, and TCE in concentrations in excess of 200 μg/l, with lesser and infrequent concentrations of 1,1-DCE, 1,1-DCA, 1,2-DCE, vinyl chloride, acetone, bromo-dichloromethane, and methylene chloride. The latter compounds may represent contaminants but not as convincingly as CCl_4, PCE, and TCE. These stations also frequently have above ARAR levels of TDS and uranium. The TDS and uranium concentrations are typical of the alluvial ground water in the vicinity of the 903 Pad and Mound Areas. CCl_4, PCE, TCE, and elevated zinc are also present in the alluvial ground water at the Mound Area.

Stations SW-21 and SW-23 approximately 500 feet farther downstream from the confluence of SW-59, SW-60, and SW-61 do not exhibit the upstream contamination. Although only one datum exists for each station, (August 1986 sampling), $CC1_4$ (9 μg/l) was the only volatile organic detected at SW-21, and volatile organics were absent at the further downstream station, SW-23. Although there are no August 1986 data for the upstream stations, the other results suggest the organics have volatilized over this reach.

Further surface water (and ground-water sampling) and analysis will be conducted to better define the extent and source of the contamination. However, potential sources outside the Mound Area will be investigated as another operable unit.

2.3.4.3 Seeps at the East Trenches Areas

Of the two seeps at the East Trenches Areas (SW-65 and SW-103), SW-65 has no apparent organic contamination, and SW-101 has the constant presence of CCl_4 at concentrations less than 10 μg/l. Dissolved uranium was also above ARAR at SW-65. Like the 903 Pad and Mound Areas, the chemistry of these seeps is similar to the local ground water.

Sampling of both surface water and ground water will continue to better define the extent of surface and ground-water contamination in this area.

2.3.5 Sediments

Sediment stations have been established along the Woman Creek and the South Walnut Creek drainages. As shown on Figure 2-11, stations SED-28, SED-29, and SED-25 are located within the South Interceptor Ditch in the Woman Creek drainage. SED-30 and SED-31 are seeps on the South Interceptor Ditch berm near station SED-29. SED-27 and SED-26 are along Woman Creek just upstream of Pond C-2. Stations SED-11, SED-12, and SED-13 are located along South Walnut Creek. SED-11 is the most upgradient station, SED-12 is just upstream of Pond B-1, and SED-13 is just downstream of Pond B-5.

Data discussed herein are for samples collected in 1989 and are presented in Appendix E.

2.3.5.1 Woman Creek Drainage

Chloromethane was present in SED-29 (60 μg/kg), and chloroform and trichloroethene were reported in SED-31 (18 μg/kg and 8 μg/kg, respectively). Several sediment samples contained methylene chloride and acetone at very low concentrations. These compounds were frequently found in associated blanks. SED-30 contained 220 μg/kg acetone at one sampling, but acetone was also present in the blank for this sample and was undetected in two other sampling events for this station in 1989. Laboratory artifact is suspected for acetone and methylene chloride results in this area. The only other volatile organic compounds detected in the Woman Creek drainage sediment samples were TCE (8 μg/kg) at SED-31 (estimated below detection limits elsewhere), and toluene estimated below detection limit at SED-29 and SED-30.

Of the metals, beryllium, lithium, silver, and tin were notably elevated above background in the sediment of the South Interceptor Ditch and Woman Creek. Concentrations of silver are greater than five times the upper limit of the background range (as high as 49.1 mg/kg) at stations SED-29, SED-30, and SED-25. Beryllium was not detected in the background samples (<1.1 mg/kg) but occurs at concentrations ranging from 3.8 to 15.0 mg/kg in all the sediment samples collected from the South Interceptor Ditch and Woman Creek. Although tin was not above background (<22.8 mg/kg) at SED-27, SED-28, and SED-31, it occurred in a range from 364 to 1080 mg/kg in stations SED-25, SED-26, SED-29, and SED-30.

Plutonium was above background at stations SED-25, SED-26, SED-29, and SED-30, ranging in concentration from 0.3 to 3.3 pCi/g. Contaminated surface soil from the 903 Pad Area, transported by wind, may be the source of this plutonium.

2.3.5.2 South Walnut Creek Drainage

Limited 1989 data exist for the three sediment stations on South Walnut Creek. There are no data for SED-12 and SED-13, and only volatiles, metals, and other inorganics data exist for SED-11.

At SED-11, $CHCl_3$, CCl_4, TCE, PCE, and acetone were present at 10, 52, 17, 39, and 167 μg/kg, respectively. This is consistent with the data for SW-61 that indicates these are surface water contaminants at this location.

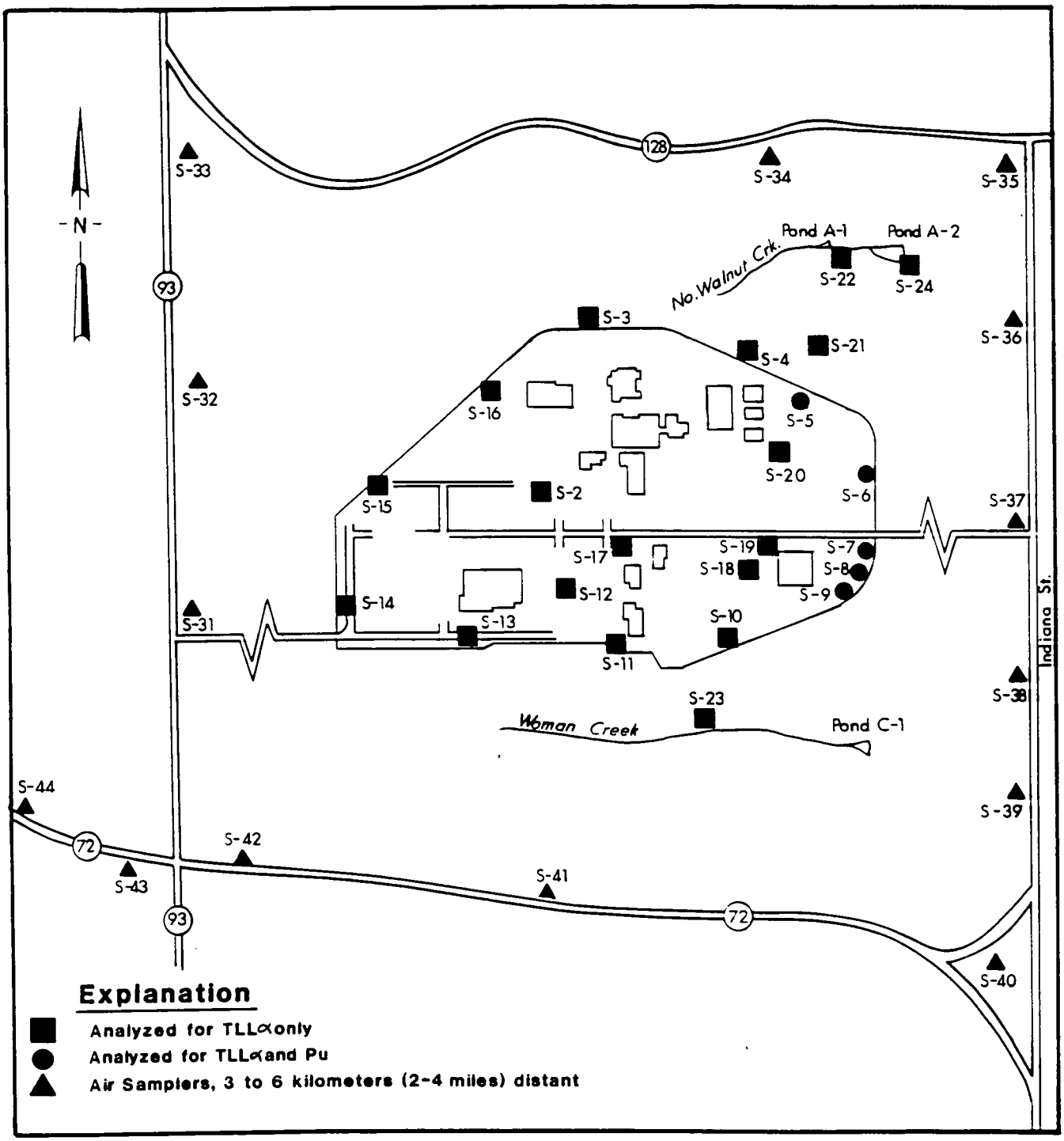
As in the Woman Creek drainage, beryllium, lithium, silver, and tin are elevated in the sediments at SED-11. They occurred at concentrations of 2.5, 7.2, 15.0, and 404 mg/kg, respectively. Zinc, which is a known contaminant of ground water and surface water in this vicinity, was also notably elevated occurring at a concentration of 735 mg/kg (the upper limit of the background tolerance interval is 93 mg/kg).

Sediment samples were taken in October 1989 at stations along South Walnut Creek as well as Woman Creek and the South Interceptor Ditch. The resulting data should suffice as confirmatory information regarding the concentrations of volatile organics, metals, other inorganics, and radionuclides in the sediments. For the Phase II RI, physical characteristics of the sediments (background and "downgradient") and the spatial distribution of the metal concentrations will be examined to assess the adequacy of the background sediment geochemical characterization and thus whether metals are contaminants in the sediments at the 903 Pad, Mound, and East Trenches Areas.

2.3.6 Air

Air radioactivity studies at the Plant are performed continuously and reported annually in the Annual Environmental Monitoring Reports (e.g., Rockwell International, 1975 through 1985, 1986b, 1987b, and 1989b). In addition, the air pathway was further characterized in Rockwell International (1986f).

The Radioactive Ambient Air Monitoring Program (RAAMP) consists of 51 high-volume particulate air samplers which operate continuously (Figure 2-12). Twenty-three of the 51 samplers are within or directly adjacent to the Plant security area (on-site samplers) and 14 are located around the property boundary (perimeter samplers). An additional 14 samplers are located in neighboring communities (Figure 2-13).

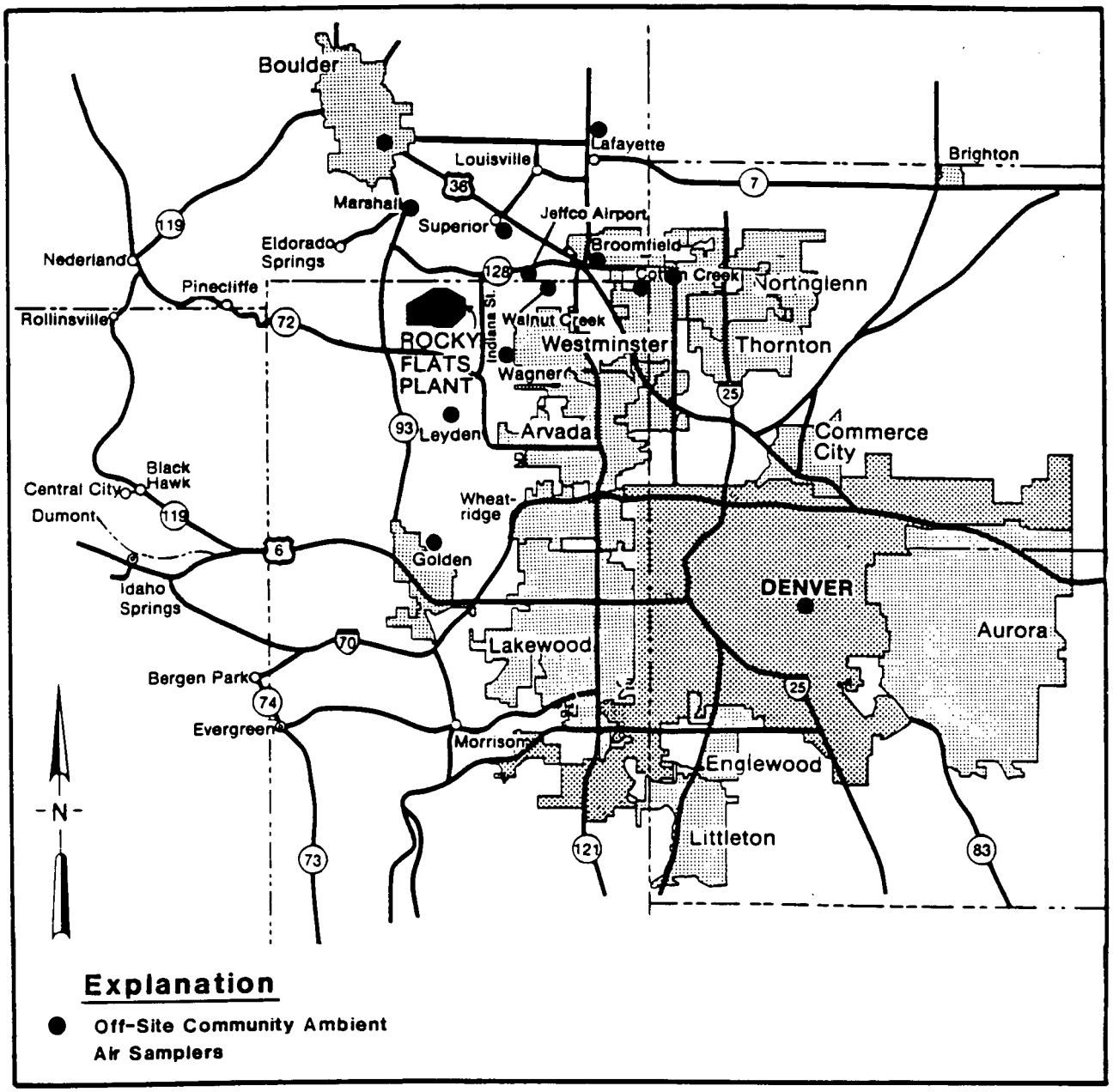


(after: Rockwell International, 1987 [sic])

Not To Scale

FIGURE 2-12

Location of On-Site and Plant Perimeter Ambient Air Samplers



(after: Rockwell International, 1987 [sic])

Not To Scale

FIGURE 2-13

Location of Off-Site Community Ambient Air Samplers

The 903 Pad Area is recognized as the principle source of airborne plutonium contamination at the Plant. Historically, the particulate samplers located immediately east, southeast, and northeast of the 903 Pad, Mound, and East Trenches Areas have shown the highest plutonium concentrations. This finding is corroborated by the results of soil surveys which indicate elevated plutonium concentrations to the east, particularly the southeast of the area. However, the RAAMP has found ambient air samples to be well within applicable Clean Air Act regulations (40 CFR 61) and DOE guidelines for the protection of human health and the environment for all radioactive contaminants (Rockwell International, 1989b).

2.3.7 Biota

The biota at the 903 Pad, Mound and East Trenches Area have been previously studied. A survey was conducted for the Final Environmental Impact Statement, Rocky Flats Plant Site (U. S. DOE, 1980), and previous studies were summarized in the Radioecology and Airborne Pathway Data Summary Report (Rockwell International, 1986f). The Radioecology and Airborne Pathway Data Summary Report addresses the plutonium released from the 903 Drum Storage Site and its effects on the immediate environment. Field studies were conducted over several years which compared various biological measurements and pathological data between ecologically similar study areas of widely varying plutonium levels. Soil plutonium concentrations were measured along with biological measurements such as vegetation community structure and biomass, litter mass, arthropod community structure and biomass, small mammal species occurrence, population density, biomass, reproduction, and physical size of whole carcasses and organs. In addition, pathological examination of small mammals, including x-ray for skeletal sarcomas, microscopy for lung tumors, and necropsy for general pathology and parasite occurrence were carried out.

It concluded that:

> "while minor differences in certain biological attributes between study areas were observed, none could be related to plutonium levels. Pathological conditions and parasites were found in some rodents, but occurrence frequencies between control and contaminated areas were similar. No evidence of cancers or other radiogenic diseases was found. These observations and measurements, combined with intensive field observations over a period of five years, led to the conclusion that plutonium contamination at Rocky Flats has not produced demonstrable ecological changes. Furthermore, the levels of plutonium observed in tissues of plants and animals in contaminated areas were insufficient to produce the doses that would be required to produce obvious biological changes. Subcellular biological changes, such as chromosome aberrations, cannot be ruled out at Rocky Flats. However, even if chromosome aberration frequencies were increased in the more highly contaminated areas, population-level changes would likely not persist because of the surrounding reservoir of normal genetic information, and of natural selection."

"Based on all the plutonium work conduced in the terrestrial environs at Rocky Flats, there is strong evidence that the element is not likely to pose an ecological hazard unless extremely high levels (greater than one milliCurie per square meter) occur. The major reason for this is the extremely low geological mobility of the common chemical forms of the element amply demonstrated in this and other research. Although, uncertainty exists as to possible long-term changes in biological availability of plutonium, we expect gradual soil penetration and dispersion to diminish the present hazard potential with time" (Whicker, 1979).

Aquatic studies, conducted by Colorado State University, examined phytoplankton, some detritus and small zooplankton uptake of plutonium from the B-series holding ponds. This study showed than an "increase in trophic-level concentration of plutonium did not occur apparently due to a selective mechanism that discriminated against plutonium at this level. This would result in a decreased potential hazard when considering the transfer of plutonium through ingestion routes" (Paine, 1980).

Other aquatic studies revealed that 77% of the plutonium associated with crayfish is found in their exoskeleton. Fish flesh and bone from the A and C-series ponds were never above the minimum detectable activity for plutonium.

2.3.8 Summary of Contamination

The Phase I RI investigations of environmental media lead to the general conclusions that volatile organic and radionuclide contamination exists in soils, surface water and ground water around several SWMUs, and that the distribution and magnitude of the contamination can be better delineated via sampling and analysis planned for the Phase II investigation.

The report also documents the presence of several inorganic constituents above background in soils and ground water, but the data do not allow for unambiguous conclusions to be made with regard to contamination. There is considerable circumstantial evidence (listed below) that forms the basis for an alternative hypothesis: evaporative losses at ground-water discharge zones may be causing accumulation of salts (in soils) and associated local changes in water quality. Many factors can cause the near-surface, fluctuating water table conditions which are a prerequisite for such evaporative concentration. Rapid slope changes can be sufficient to induce natural seepage for example, and enhanced flow along relatively

impermeable rock units can form contact seeps. The presence of caliche in the vicinity of Operable Unit No. 2 indicates that long-term evaporation is a locally significant hydrogeochemical process. Also, historical changes in the local hydrological regime can cause relatively rapid salt accumulation by introducing ground water into soils which have not been previously leached. Such "saline seep" formation has been studied extensively (Miller et al, 1980). At Rocky Flats, constructed ponds and ditches may have raised the water table and caused dissolution of salts from previously unleached or less leached soils. The circumstantial evidence for a local evaporative concentrating process for ground water is as follows:

- Most of the elevated elements are not known constituents of the waste sources in Operable Unit No. 2.
- The elevated constituents do not exhibit clear gradients away from known SWMUs, or for that matter, clear horizontal or vertical gradients.
- The variability in inorganic constituent concentrations is typically very small, and almost always within an order of magnitude.
- Some of the major ions do show very pronounced elevation above background, but the highest concentrations of inorganic constituents is in a well which is one of the farthest from the SWMUs (29-87).
- Other parts of the Rocky Flats Plant show similar distributions of major and minor elements and locally very high concentrations of major ions which are not demonstrably derived form SWMUs (wells 5-86 and 6-86). The background characterization may not be adequate because the current data are based on one quarter of sampling, and the well layout was designed without the specific goal of including evaporation-prone zones.
- The wells with the high TDS and major ions commonly also have the most elevated metals and uranium. This raises the possibility that if the salinity is due to some concentrating process other than waste input, so may be some (or all) of the minor elements. This is consistent with the observation that the uranium in ground water at the 881 Hillside Area is of natural origin based on uranium 234/uranium 238 ratios. The Plant uses depleted uranium which was found to be present only in some surface soils at the 881 Hillside.

No single feature of the data listed above rules out the possibility that some or all of these inorganic constituents do represent contamination. However, when viewed in aggregate, the observations show that it is plausible, perhaps probable, that these elevated inorganic constituents do not reflect contamination.

The conceptual model that local concentrations are due to evaporation of shallow ground water generates several hypothesis which will be tested in part with existing data, and tested more thoroughly with data from the Operable Unit No. 2 Phase II activities and the on-going background characterization.

2.4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Section 121(d) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), requires that Fund-financed, enforcement, and Federal facility remedial actions comply with applicable or relevant and appropriate (ARAR) Federal laws, or more stringent promulgated State laws.

Potential health-based, chemical-specific ARARs pertinent to ground-water quality have been identified for the EPA Target Compound List (TCL) organic and Target Analyte List (TAL) inorganic compounds found above detectable levels. Radionuclides and conventional pollutants have also been identified and screened. Potential chemical-specific ARARs are derived primarily from federal and state health and environmental statutes and regulations. Health effect assessments, health advisories, chemical advisories, and guidance documents were also considered when establishing potential clean-up standards, but were not considered to be potential ARARs. These and any proposed standards are classified as items to be considered (TBCs). A summary of potential chemical-specific ARARs for the contaminants found at the 903 Pad, Mound, and East Trench Areas is presented in Table 2-12. When more than one potential chemical-specific ARAR was identified for a contaminant, a screening process was used to determine the potential specific ARAR to be applied. This screening process involves three steps as outlined below:

1. The most stringent human health or agricultural-based promulgated standard among the Safe Drinking Water Act (SDWA), Maximum Contaminant Level (MCL), and CDH ground and surface water standards was first applied (potentially applicable).
2. For a RCRA Appendix VIII hazardous constituent, in the absence of any promulgated standard in step 1 above, the most stringent RCRA Land Disposal Restriction or RCRA Subpart F limit was applied (potentially relevant and appropriate).
3. In the absence of a potential ARAR in steps 1 or 2 above, the most stringent of the Clean Water Act Water Quality Criteria, or the proposed CDH ground-water and surface water standards was applied (TBC).

The screening process includes consideration of both ground-water and surface water standards because of the significant interaction of alluvial ground water and surface water in the drainages of the Rocky Flats Plant. Of the elements/compounds detected in alluvial ground water at the 903 Pad, Mound, and East Trenches

Areas, there are no potential ARARs for calcium, magnesium, potassium, sodium, bicarbonate, and strontium. However, the TDS potential ARAR establishes the acceptable aggregate concentration for the above major ions (excludes strontium). Until an acceptable risk based concentration is established for strontium, its background concentration is TBC.

As can be seen in Table 2-12, several of the volatile organics, metals, and major ions that were analyzed have exceeded potential chemical-specific ARARs during the period 1987 to 1989 at some location in the 903 Pad, Mound, and East Trenches Areas. This is not to say that releases of these constituents are occurring, for the concentrations of some substances may be due to a past release or to natural geochemical processes. However, the listing of Table 2-12 has been presented to identify parameters for which analyses should be made in Phase II and their respective minimum acceptable detection limits. The FS will evaluate technologies that address these constituents. It is noted that a risk assessment will be required to determine acceptable concentrations for contaminants in soils as ARARs are not available for this medium.

2.5 SAMPLING AND ANALYSIS REQUIREMENTS FOR REMEDIAL ALTERNATIVES EVALUATION

The purpose of this section is to identify potential remedial technologies which are consistent with the available information regarding contamination at Operable Unit No. 2. Based on the available site information, the contaminated media or areas for which remedial alternatives will be developed include wastes, soil/sediment, ground water, and surface water. The following preliminary general remedial response actions have been identified for further review and evaluation:

- Complete or partial removal and treatment of wastes and contaminated soils;
- In-situ contaminated soils treatment;
- Ground-water collection;
- Infiltration and ground-water containment controls;
- In-situ ground-water treatment/immobilization;
- Ground-water/surface water treatment; and
- Treated ground-water/surface water disposal.

TABLE 2-12
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[a]	Potential ARAR (ug/l)	Potential ARAR Reference	Comment
Organic Compounds				
Vinyl Chloride	520	2	SDWA MCL	
Carbon Tetrachloride	1100	5	CDH Surface Water Drinking Water Standard	
1,1 Dichloroethane	59	5U	RCRA Subpart F	
Chloroform	330	100	CDH Surface Water Standard for total trihalomethanes	
1,1 Dichloroethene	32	7	CDH Surface Water Drinking Water Standard	
Tetrachloroethene	33,000	5U	CDH Surface Water; Fish and Water Ingestion Standard	
1,1,1 Trichloroethane	63	200	CDH Surface Water Drinking Water Standard	
1,1,2,2-Tetrachloroethane	45,000	5U	CDH Surface Water Standard	
Trichloroethene	49,000	5	CDH Surface Water; Drinking Water Standard	

TABLE 2-12 (cont.)
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[b] (mg/l)	Potential ARAR (mg/l)	Potential ARAR Reference	Comment
Metals				
Aluminum	2.68	5.0	CDH Agriculture Standard	
Antimony	0.118	0.06U	RCRA Subpart F	
Arsenic	0.040	0.05	CDH Surface Water; Drinking Water Standard	
Barium	0.932	1.0	CDH Surface Water; Drinking Water Standard	
Cadmium	0.006	0.01	CDH Surface Water; Drinking Water Standard	
Calcium	991	NS	No Standard	
Chromium III	0.122	.05	CDH Surface Water; Drinking Water Standard	Analytical result is total chromium.
Chromium VI	0.122	.05	CDH Surface Water; Drinking Water Standard	Analytical result is total chromium.
Copper	0.836	0.2	CDH Ground Water; Agriculture Standard	

TABLE 2-12 (cont.)
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[b] (mg/l)	Potential ARAR (mg/l)	Potential ARAR Reference	Comment
Metals (cont.)				
Iron	4.35	0.3	CDH Surface Water; Drinking Water Standard	Analytical results are soluble iron
Lead	0.024	0.05	CDH Surface Water; Drinking Water Standard	
Lithium	0.22	2.5	CDH Ground Water Standard	
Magnesium	136	NS	No Standard	
Manganese	1.27	0.05	CDH Surface Water; Drinking Water Standard	Analytical results are soluble manganese
Mercury	0.013	0.002	CDH Surface Water; Drinking Water Standard	
Molybdenum	0.135	0.1	CDH Ground Water; Agriculture Standard	
Nickel	1.41	0.2	CDH Ground Water Agriculture Standard	
Potassium	31	NS	No Standard	
Selenium	0.37	0.01	CDH Surface Water; Drinking Water Standard	

TABLE 2-12 (cont.)
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[b] (mg/l)	Potential ARAR (mg/l)	Potential ARAR Reference	Comment
Metals (cont.)				
Silver	0.128	0.05	CDH Surface Water; Drinking Water Standard	
Sodium	405	NS	No Standard	
Strontium	7.71	NS	No Standard	Background is TBC.
Vanadium	0.245	0.1	CDH Ground Water; Agriculture Standard	
Zinc	2.77	2.0	CDH Ground Water; Agriculture Standard	

TABLE 2-12 (cont.)
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[b] (mg/l)	Potential ARAR (mg/l)	Potential ARAR Reference	Comment
Conventional Pollutants				
Nitrite	15.4	1.0	CDH Ground Water Standard	Analytical results are total nitrate plus nitrate nitrogen. Reanalysis required to determine if nitrite potential ARAR is exceeded
Nitrate	15.4	10.0	CDH Ground Water Standard	Analytical results are total nitrate nitrogen.
Chloride	947	250	CDH Ground Water Standard	
Sulfate	1157	250	CDH Ground Water Standard	
Bicarbonate as $CaCO_3$	642	NS	No Standard	
T.D.S.	3219	400	CDH Ground Water Standard	

TABLE 2-12 (cont.)
POTENTIAL CHEMICAL SPECIFIC ARARs
FOR COMPOUNDS AND ELEMENTS DETECTED
AT THE 903 PAD, MOUND, AND EAST TRENCHES

Chemical	Maximum Concentration in Ground Water[b] (mg/l)	Potential ARAR (mg/l)	Potential ARAR Reference	Comment
Radionuclides				
Gross Alpha	250	7 (11)*	CDH Ground Water Standard	
Gross Beta	327	5 (19)	CDH Surface Water Standard	
$Pu^{238,239,240}$	0.522	.05 (.05)	CDH Surface Water Standard	
Am^{241}	0.831	.05 (.05)	CDH Surface Water Standard	
H^{3}	560	500 (500)	CDH Surface Water Standard	
$Sr^{89,90}$	5.0	8	CDH Surface Water Standard	
$Uranium^{total}$	62	5 (10)	CDH Surface Water Standard	

(a) - Maximum compound concentrations determined from first and second quarter 1989 data.
(b) - Maximum compound concentrations determined from 1987 and 1988 database.
U - Detection limit
J - Estimated below detection limit
B - Compound also present in blank
TBC - To be considered
(c) - Below minimum detectable activity (MDA)
* - Value is for Woman Creek; value in parentheses is for Walnut Creek

In addition, combinations of these general response actions may be appropriate and will be evaluated during the FS. Table 2-13 presents these general response actions along with potential component technologies.

As shown in Table 2-14, there are specific requirements that are necessary to evaluate the preliminarily identified technologies. These data will provide for a thorough comparative evaluation of the technologies with respect to implementability, effectiveness, and cost, and allow for informed decisions to be made with respect to selection of preferred technologies. The Field Sampling Plan (Section 5.0) reflects these information requirements.

TABLE 2-13

RESPONSE ACTIONS AND REMEDIAL TECHNOLOGIES

GENERAL RESPONSE ACTIONS	ASSOCIATED REMEDIAL TECHNOLOGIES
Complete or Partial Removal and Treatment of Contaminated Soils	• Off-Site Landfill • On-Site Treatment*/Backfill
In-Situ Contaminated Soils Treatment	• Immobilization • Soil Flushing • Vapor Extraction • Vitrification • Biological Treatment
Ground-Water Collection	• Well Array • Subsurface Drains
Infiltration and Ground-Water Containment Controls	• Capping • Subsurface Barriers • Reinjection
In-Situ Ground-Water Treatment/ Immobilization	• Immobilization • Aeration • Bioreclamation
Ground-Water/Surface Water Treatment	• Biological Treatment • UV/Peroxide or UV/Ozone • Air Stripping • Carbon Adsorption • Ion Exchange • Electrodialysis • Reverse Osmosis
Treated Ground-Water/Surface Water Disposal	• Surface Water Discharge • Ground-Water Reinjection

* See Table 2-14

TABLE 2-14

REMEDIAL TECHNOLOGY DATA REQUIREMENTS

TECHNOLOGY	DATA PURPOSE	DATA NEEDED
Off-Site Disposal	Evaluate RCRA Land Ban and Radioactivity Restrictions	- 40 CFR 268 Table CCWE and Appendix III Analyses - Full Suite of Radionuclide Analyses
	Cost Analysis	- Vertical and Horizontal Extent* of Contamination
Thermal Treatment	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Treatability Study
	Cost Effectiveness	- BTU Content
Vitrification	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Treatability Study
Attrition Scrubbing	Effectiveness	- Gradation (sieve analysis) - Full Suite of Radionuclide Analyses for each soil fraction - Treatability Study
	Secondary Waste Characteristics	- Full Suite of Organic and Inorganic Analyses*
Solvent Extraction	Effectiveness (adsorption characteristics of soils)	- Full Suite of Organic and Inorganic Analyses* - Soil Type - Soil Organic Matter Content - Treatability Study
Immobilization (soils)	Determine Viscosity of Grout Material	- Soil Grain Size Distribution (sieve analysis)
	Effectiveness	- Full Suite of Organic and Inorganic Analyses*
Soil Flushing/Bioreclamation	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Soil Organic Matter Content - Soil Classification - Soil Permeability - BOD - Treatability Study
Vapor Extraction	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Subsurface Geological Characteristics - Depth to Ground Water - Soil Permeability - Treatability Study

TABLE 2-14 (cont.)

REMEDIAL TECHNOLOGY DATA REQUIREMENTS

TECHNOLOGY	DATA PURPOSE	DATA NEEDED
Well Array/Subsurface Drain	Storativity (transient flow)	- Aquifer tests
Capping/Subsurface Barriers	Suitability of On-Site Soils for Use	- Gradation (Sieve Analysis) - Atterberg Limits (Plasticity Tests) - % Moisture - Compaction (Proctor) - Permeability (Triaxial Permeability) - Strength (Triaxial or Direct Shear)
	Effectiveness	- Location of Subcropping Sandstones - Hydraulic Conductivity of Bedrock Materials
	Construction Feasibility	- Grade - Depth to Bedrock
Immobilization (Ground Water Contaminants)	Determine Viscosity of Grout Material	- Soil Grain Size Distribution (sieve analysis)
	Effectiveness	- Full Suite of Organic and Inorganic Analyses*
In-Situ Aeration (Ground Water)	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Subsurface Geological Characteristics - Depth to Ground Water - Soil Permeability - Treatability Study
In-Situ Bioreclamation (Ground Water)	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Soil Organic Matter Content - Soil Classification - Soil Permeability - BOD - Dissolved Oxygen - NO_3, PO_4^{3-}, pH - Treatability Study
Above Ground Biological Treatment	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Soil Organic Matter Content - Soil Classification - Soil Permeability - BOD - Treatability Study
UV Peroxide Oxidation	Process Control	- Iron and Manganese
	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Treatability Study

TABLE 2-14 (cont.)

REMEDIAL TECHNOLOGY DATA REQUIREMENTS

TECHNOLOGY	DATA PURPOSE	DATA NEEDED
Air Stripping	Process Control	- Hardness
	Effectiveness	- Full Suite of Organic and Inorganic Analyses* - Treatability Study
Other Water Treatment Technologies		- Full Suite of Organic and Inorganic Analyses*

* The nature and extent of contamination determined through soils and water analyses for the parameters listed in Tables 2-5 and 2-9 is critical to determining the technical feasibility and cost effectiveness of the technologies listed here.

3.0 PHASE II RFI/RIFS WORK PLAN DATA QUALITY OBJECTIVES

The primary objective of a RI is to collect the data necessary to determine the nature, distribution, and migration pathways of contaminants. The RI also supports the evaluation of remedial alternatives (U.S. EPA, 1987). The five general goals of a RI are:

1) characterize site physical features;
2) define contaminant sources;
3) determine the nature and extent of contamination;
4) describe contaminant fate and transport; and
5) provide a baseline risk assessment (U.S. EPA, 1988a).

Data quality objectives (DQOs) are qualitative and quantitative statements which specify the quality and quantity of data collection required by the RI (U.S. EPA, 1987). Through application of the DQO process, site-specific RIFS goals are established, and data needs are identified for achieving those goals. This section of the RIFS Work Plan reviews conclusions from the Phase I RI as a basis for Phase II RI objectives and identifies data needs to meet the outlined objectives.

3.1 PHASE I RI CONCLUSIONS

Several investigations have been conducted in the vicinity of the 903 Pad, Mound, and East Trenches Areas to date as discussed in Sections 1.0 and 2.0. General conclusions from these investigations are as follows.

1) Surficial materials in the area consist of Rocky Flats Alluvium, colluvium and valley fill alluvium.
2) Bedrock beneath surficial materials consists of Arapahoe Formation claystones and sandstones dipping slightly to the east (less than two degrees). Bedrock materials are weathered below the base of surficial materials in the study area.
3) The extent of Arapahoe sandstones beneath these areas was not fully characterized during the Phase I RI because of the complex depositional pattern (A seismic geophysical program is underway to further characterize the location and extent of bedrock sandstones and claystones).

4) Unconfined ground-water flow occurs in surficial materials, subcropping sandstones, and potentially in weathered subcropping claystones. The flow system in surficial materials is not fully saturated year round. Flow in weathered claystones has not been sufficiently documented, and flow directions in subcropping sandstones are poorly defined due to the complex stratigraphy.

5) Confined ground-water flow occurs in deeper sandstones. This flow system is poorly defined at this time due to the complex stratigraphy and facies changes.

6) Ground-water recharge occurs as infiltration of incident precipitation and flow from ditches and surface water drainages.

7) Discharge from the unconfined ground-water flow system occurs as evapotranspiration, seeps and springs at the edge of the Rocky Flats pediment, to surface water in Woman Creek and South Walnut Creek, and to bedrock sandstones. Site contaminants have been identified in many of these seeps.

8) Wastes have been removed from the 903 Drum Storage Site, the Pallet Burn Site, the Oil Drum Pit No. 2 Site, and the Mound Site. Wastes remain in place in all eleven trenches within the area. Further characterization of all potential contaminant sources is warranted.

9) Boreholes were drilled adjacent to SWMUs in the Phase I RI, and soil samples were collected and analyzed for HSL organics and metals, radionuclides, and inorganics. Further characterization of soils beneath SWMUs is needed.

10) Surficial soils in the area are contaminated with plutonium, americium, and other radionuclides due to wind dispersal of particulates during clean-up of the 903 Drum Storage Site in the late 1960s. Soil sampling results indicate that these compounds are most enriched near the surface, but further investigation of smaller soil intervals is necessary to assess radionuclides' distribution.

11) The unconfined ground-water flow system contains volatile organic compounds The principal volatile organics present are PCE, CCL_4, and TCE. The extent of these contaminants in both the unconfined and confined ground-water flow systems has not been fully determined.

12) Radionuclides were elevated in sediment and unfiltered surface water samples collected during the Phase I RI. Wind dispersal of radionuclides during clean-up of the 903 Drum Storage Site is the likely source of these contaminants; although confirmation of this hypothesis is needed. There are slight indications of radionuclides in a few ground-water wells.

13) Several major and minor elements were elevated above background in soils, groundwater, surface water and sediments, but they do not exhibit clear lateral or vertical gradients.

3.2 SITE-SPECIFIC PHASE II RI OBJECTIVES AND DATA NEEDS

Based on the Phase I RI conclusions and the conceptual site model presented in Section 2.0, the site-specific Phase II RI objectives and associated data needs have been developed (Table 3-1). Specific plans for obtaining the needed data are presented in Section 5.0 (Field Sampling Plan).

TABLE 3-1

PHASE II RI OBJECTIVES AND DATA NEEDS

Objective	Data Need
Characterize Site Physical Features	
1) Determine the extent of saturation and ground-water flow directions for the unconfined flow system both spatially and temporally.	- Additional monitoring well and piezometer data in unexplored areas. - Water level data from various units from all existing and new monitor wells.
2) Describe the interaction between the surface water and ground-water pathways.	- Ground-water flow directions, quality, and potentiometric surface. - Seep locations, flow, and water quality. - Surface water flow elevations, quantity, and quality.
3) Determine the hydraulic connection between surficial deposits and bedrock and quantify material properties	- Long term pumping test data to evaluate hydraulic conductivity and storativity. - Tracer test data to evaluate effective porosity.
4) Delineate the Arapahoe Formation sandstones	- Additional drilling and seismic profile data.
Characterize Contaminant Sources	
1) Characterize the nature and distribution of waste materials remaining on-site.	- Chemical analyses of wastes and soils beneath the wastes. Analyze samples for TCL volatiles, semi-volatiles, and pesticides/PCBs, TAL metals, as well as radionuclides and inorganics.
2) Characterize soils beneath wastes as well as soils at sites where wastes have been removed as potential contaminant sources.	- Same as above.
3) Identify which sites are sources of ground-water and surface water contamination.	- Ground-water levels and quality beneath sites. - SWMU specific upgradient and downgradient water quality data. - Additional surface water quality data from existing stations.

TABLE 3-1 (continued)

PHASE II RI OBJECTIVES AND DATA NEEDS

Objective	Data Need
Characterize the Nature and Extent of Contamination	
1) Determine the horizontal and vertical extent of surficial radionuclide soil contamination due to wind dispersion.	- Radionuclide data on surficial soil scrapes. Sampling will follow Colorado Department of Health procedures. To define the horizontal extent of radionuclide contamination, these samples will be collected within the RI study area as well as in the Plant buffer zone. - Radionuclide data on soil samples from test pits dug in the same areas as surficial soil sample collection to define the vertical extent of radionuclide migration into the soil profile.
2) Determine the nature and extent of ground-water contamination.	- Ground-water chemistry data for surficial materials and subcropping Arapahoe sandstones between areas with and without known ground-water contamination to delineate the extent of contamination. Samples will be analyzed for TCL volatiles, semi-volatiles and pesticides/PCBs, TAL metals, radionuclides, and inorganics
3) Characterize surface water quality.	- Quarterly collection of surface water and sediment samples from existing monitoring stations. Samples will be analyzed for TCL volatiles, TAL metals, radionuclides, and inorganics. Analyze surface water samples for both dissolved and total metals and radionuclides to determine if constituents are suspended or dissolved. Continue routine flow rate measurements at surface water stations.
Provide Data for Baseline Risk Assessment	
1) Describe contaminant fate and transport.	- Data on the physicochemical processes associated with site contaminants based on existing literature and site specific information.

TABLE 3-1 (continued)

PHASE II RI OBJECTIVES AND DATA NEEDS

Objective	Data Need
Provide Data for Baseline Risk Assessment (cont.)	
2) Assess potential interim and final remedial alternatives.	- Information on the effectiveness of interim and final remedial alternatives.
3) Assess the threat to public health and the environment from the no action remedial alternative.	- Reference doses and slope factors for contaminants at the site.
Provide Data for Feasibility Study	
1) Assess potential interim and final remedial alternatives.	- Information on the effectiveness, implementability, and cost of interim and final remedial alternatives. This includes: site geological and hydrogeochemical data; literature data on remedial alternatives performance; treatability study data; and design, construction, and operation and maintenance costs for remedial alternatives.

The highest quality data possible will be collected by following the Rocky Flats Plant ER Program Standard Operating Procedures (SOP) and through adherence to the Rocky Flats Plant ER Program Quality Assurance/Quality Control (QA/QC) Plan. Organic and metal analyses will be performed using CLP routine analytical services (RAS), and other analyses (radionuclides and inorganics) will be performed in accordance with the QA/QC plan specified methods. In addition, analytical methods with detection limits below or near potential chemical-specific ARARs (Table 3-2) will be used to facilitate comparison of resulting data to potential ARARs.

TABLE 3-2

COMPARISON OF POTENTIAL CHEMICAL-SPECIFIC ARARS AND TBCS TO ANALYTICAL DETECTION LIMITS

ANALYTE	ARAR OR TBC	DETECTION LIMIT
Copper	0.2 mg/l	0.025 mg/l
Iron	0.3 mg/l	0.1 mg/l
Manganese	0.05 mg/l	0.015 mg/l
Mercury	0.002 mg/l	0.0002 mg/l
Molybdenum	0.1 mg/l	0.04 mg/l
Nickel	0.2 mg/l	0.04 mg/l
Selenium	0.01 mg/l	0.005 mg/l
Thallium	0.015 mg/l	0.01 mg/l
Zinc	2.0 mg/l	0.02 mg/l
Cobalt	0.05 mg/l	0.05 mg/l
Vanadium	0.1 mg/l	0.05 mg/l
Carbon Tetrachloride	0.005 mg/l	0.005 mg/l
1,1-Dichloroethene	0.007 mg/l	0.005 mg/l
Chloroform	0.10 mg/l	0.005 mg/l
1,2-Dichloroethane	0.005 mg/l	0.005 mg/l
t-1,2-Dichloroethene	0.00003 mg/l	0.005 mg/l
Methylene Chloride	0.005 mg/l	0.005 mg/l
Tetrachloroethene	0.005 mg/l	0.005 mg/l
1,1,1-Trichloroethane	0.20 mg/l	0.005 mg/l
Trichloroethene	0.005 mg/l	0.005 mg/l
Vinyl Chloride	0.002 mg/l	0.01 mg/l*
Gross Alpha	7 pCi/l	2 pCi/l
Gross Beta	5 pCi/l	4 pCi/l
$Pu^{238,239,240}$	0.05 pCi/l	0.01 pCi/l
Americium ^{241}	0.05 pCi/l	0.01 pCi/l
Strontium ^{90}	8 pCi/l	1 pCi/l
Uranium ^{total}	5 pCi/l	1.8 pCi/l
Chloride	250 mg/l	5 mg/l
Sulfate	250 mg/l	5 mg/l
Total Dissolved Solids	400 mg/l	5 mg/l

* Detection limit exceeds potential ARAR or TBC.
TBC = to be considered

4.0 REMEDIAL INVESTIGATION/FEASIBILITY STUDY TASKS

4.1 REMEDIAL INVESTIGATION TASKS

4.1.1 Task 1 - Project Planning

The project planning task includes all efforts required to initiate this Phase II RI of Operable Unit No. 2. Activities undertaken for this project have included detailed review of the Phase I RI results as well as other previous investigation results, review of historical aerial photography, preliminary evaluation of ARARs, and scoping of the Phase II RI. Results of these activities are presented in Sections 1.0 (Introduction) and 2.0 (Phase I RI Site Evaluation).

During the Phase I RI, a complex depositional pattern was recognized in the bedrock beneath the 903 Pad, Mound, and East Trenches Areas. A high resolution seismic reflection program is currently being implemented to further define the location, extent, and orientation of bedrock sandstone units beneath the area. Results of this investigation will be evaluated in scoping of the Phase III RFI/RI for Operable Unit No. 2.

Two project planning documents, including this Work Plan, have been prepared which pertain to this Phase II RI as required by the draft Inter-Agency Agreement between DOE, EPA, and CDH. This Work Plan presents results of the project planning task in addition to plans for the Phase II RFI/RI. A Field Sampling Plan (FSP) is included in this document which presents the locations, media, and frequency of sampling efforts. The second document required by the IAG is a Sampling and Analysis Plan (SAP). Included in the SAP are a Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOP) for all field activities. The current versions (January 1989) of the Rocky Flats Plant ER Program QAPP (Rockwell International, 1989f) and SOP have been submitted previously to EPA and CDH. The QAPP and SOP are being revised and will be submitted in July 1990 in accordance with the draft IAG.

4.1.2 Task 2 - Community Relations

In accordance with the draft IAG, the Communications Department at Rocky Flats is developing a Plant-wide Community Relations Plan to actively involve the public in the decision-making process as it relates to environmental restoration activities. A Draft Community Relations Survey Plan has been completed and forwarded to EPA, CDH, and the public for review. This work plan specifies activities planned to complete the Plant-wide Community Relations Plan, including plans for community interviews. The draft Community Relations Plan will be completed in September 1990 in accordance with the draft IAG schedules. Accordingly, a site-specific Community Relations Plan is not required for Operable Unit No. 2.

The Communications Department also is continuing other public information efforts to keep the public informed of environmental restoration activities and other issues which relate to Plant operations. A Speakers Bureau program sends speakers to civic groups and educational organizations, while a public tour program allows the public to visit Rocky Flats. Road tours of areas such as the 903 Pad, Mound, and East Trenches Areas are common during public tours, as well as other tours arranged for public officials. An Outreach Program also is in place where Plant officials will visit elected officials, the news media, and business and civic organizations to further discuss issues related to Rocky Flats and environmental restoration activities. The Communications Department also receives numerous public inquiries which are answered during telephone conversations or by sending written informational materials to the requestor.

4.1.3 Task 3 - Field Investigation

The Phase II RFI/RI field investigation is designed to meet the objectives outlined in Section 3.0. The following activities will be performed as part of the field investigation:

- Drill and sample soils and wastes within SWMUs;
- Sample surficial soils for radionuclides;
- Install and sample ground-water monitoring wells to characterize the nature and extent of ground-water contamination and the hydraulic connection between surficial materials and bedrock;
- Perform aquifer tests and geotechnical tests;
- Collect surface water and sediment samples.

Sample locations, frequency, and analyses are presented in Section 5.0. All field activities will be performed in accordance with the Rocky Flats Plant ER Program SOP.

4.1.4 Task 4 - Sample Analysis and Data Validation

Analytical methods for chemical analyses are provided in the ER Program QA/QC Plan (Rockwell International, 1989f). Also provided in this document are the analytical detection limits, sample container and volume requirements, preservation requirements, and sample holding times.

Data will be reviewed and validated by the ER Program staff. Results of data review and validation activities will be documented in data validation reports. EPA data validation functional guidelines will be used for validating organic and inorganic (metals) data (U.S. EPA, 1988b). Validation methods for radiochemistry and major ions data have not been published by the EPA; however, data and documentation requirements have been developed by ER Program QA staff. Data validation methods for these data are derived from these requirements. Details of the data validation process are described in the QA/QC Plan (Rockwell International, 1989f).

4.1.5 Task 5 - Data Evaluation

Data collected during the Phase II RI will be incorporated into the existing database and used to better define site characteristics, source characteristics, and the nature and extent of contamination, and to support the evaluation of proposed remedial alternatives.

4.1.5.1 Site Characterization

Geologic and hydrologic data will be incorporated into existing site maps and cross-sections. Geologic data will be used to detail the stratigraphy of surficial materials and weathered bedrock within source areas and to map the extent of paleochannels in the top of bedrock. Hydrologic data will be used to evaluate seasonal variations in water levels, ground-water flow, and the extent of saturated surficial materials. Also evaluated will

be storativity, ground-water velocity, contaminant migration rates, and the interaction between ground water and surface water.

4.1.5.2 Source Characterization

Analytical data from source boreholes will be used to:

- Verify SWMU locations;
- Characterize the nature of source contaminants;
- Characterize the lateral and vertical extent of source contaminants;
- Determine the maximum on-site contaminant concentrations; and
- Quantify the volume of source materials.

At those SWMU locations which are trenches, geologic data from the source boreholes will also determine the trench depths and characterize any trench contents.

4.1.5.3 Nature and Extent of Contamination

Analytical data from soil, sediment, ground-water, and surface water sampling efforts will be used to characterize the nature and extent of contamination. The criteria for the identification of contamination will be analyte specific. For volatile organic compounds, any detectable concentrations in samples that are not attributable to laboratory contamination will be considered likely evidence of contamination. For inorganic compounds (including radionuclides) only those concentrations which exceed expected concentrations in background shall constitute evidence of contamination. The statistical techniques which shall be used to compare concentrations of inorganic compounds collected as part of the Phase II RI to background concentrations are documented in the Background Geochemical Characterization Report (Rockwell International, 1989e). Essential to the implementation of these statistical techniques for ground-water and borehole samples is the classification of each analytical datum by an appropriate geologic unit (such as Rocky Flats Alluvium or colluvium). This identification of the appropriate geologic unit will be based on geological data collected during the Phase II RFI/RI. Background for inorganic analytes will be further characterized

and evaluated in the context of the potential role of evaporative concentration as a mechanism for localized occurrences of inorganic constituents at high concentrations.

The extent of contamination will be delineated through the use of contaminant isopleths maps and cross sections. The possibility of using kriging to contour the isopleths of the most widely distributed contaminants will be investigated. Investigations to date indicate difficulty in identifying the source of contamination because of the close proximity of several possible sources. The statistical technique of principal component analysis will be investigated as a method of identifying the effects of multiple sources. The ability to estimate the individual effects of multiple sources at intermediate sampling sites will aid in the mapping of plumes and in the understanding of the transport of contaminants by the ground-water flow system.

Comparisons of analytical data from ground water and surface water will be made to investigate the movement of contaminants from one pathway to another. Temporal variations of contaminant concentrations in ground water and surface water will be evaluated both for seasonality and long-term trends.

Analytical data from surficial soil scrapes and vertical soil profiles will be evaluated in order to characterize the areal and vertical distribution of plutonium and americium contamination in remedial investigation areas and in other Plant areas (buffer zone) to the south and east.

4.1.5.4 Evaluation of Proposed Remedial Alternatives

The evaluation of proposed remedial alternatives will be based primarily on the information derived for the purpose of site characterization and source characterization. Geotechnical data from source boreholes will be used to evaluate the effectiveness of:

- attrition scrubbing;
- solvent extraction;
- soil immobilization;

- soil flushing/bioreclamation;
- in-situ vitrification; and
- capping/subsurface barriers.

4.1.6 Task 6 - Baseline Risk Assessment

A baseline risk assessment will be prepared for the 903 Pad, Mound, and East Trenches Areas as part of the Phase II RI/FS to evaluate the potential threat to the public health and the environment in the absence of remedial action. The baseline risk assessment will provide the basis for determining whether or not remedial action is necessary in the area and serve as the justification for performing remedial action (U.S. EPA, 1988a).

Several objectives will be accomplished under the risk assessment task including identification and characterization of the following (U.S. EPA, 1988a):

- toxicity and levels of hazardous substances present in relevant media (e.g., air, ground water, soil, surface water, sediment, and biota);
- environmental fate and transport mechanisms within specific environmental media and cross-media fate and transport where appropriate;
- potential human and environmental receptors;
- potential exposure routes and extent of actual or expected exposure;
- extent of expected impact or threat; and the likelihood of such impact or threat occurring (i.e., risk characterization); and
- level(s) of uncertainty associated with the above.

The public health risk assessment and the environmental evaluation will be performed in accordance with EPA and other guidance documents listed in Table 4-1. The risk assessment will address the potential public health and environmental impacts associated with the site under the no-action alternative (no remedial action taken). This assessment will aid in the selection of site remedies based on the contaminants of concern and the environmental media associated with potential risks to public health and the environment.

TABLE 4-1

EPA GUIDANCE DOCUMENTS WHICH WILL BE USED IN THE RISK ASSESSMENT TASK

- Risk Assessment Guidance for Superfund, Human Health Evaluation Manual Part A, Interim Final (U.S. EPA, 1989a)
- Superfund Exposure Assessment Manual (U.S. EPA, 1988c)
- Exposure Factors Handbook (U.S. EPA, 1989b)
- The Endangerment Assessment Handbook (U.S. EPA, 1985)
- CERCLA Compliance With Other Laws Manual (U.S. EPA, 1988d)
- Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, 1988a)
- Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Reference (U.S. EPA, 1989c)
- Risk Assessment Guidance for Superfund -- Environmental Evaluation Manual (U.S. EPA, 1989d)
- Data Quality Objectives for Remedial Response Activities: Development Process (U.S. EPA, 1987)

4.1.6.1 Public Health Evaluation

The risk assessment process is divided into four tasks (U.S. EPA, 1988a), including:

- Contaminant identification;
- Exposure assessment;
- Toxicity assessment; and
- Risk characterization.

The task objectives and description of work for each task are described below.

Contaminant Identification

The objective of contaminant identification is to screen the information that is available on hazardous substances or wastes present at the site and to identify contaminants for the risk assessment process. Previous work characterizing aspects of the Rocky Flats Plant and the surrounding area has been done. Additional sampling and analysis of various media will take place in order to support the human health risk assessment, the ecological assessment, and to further characterize the site. Reduction in the number of contaminants identified to a list of "contaminants of concern" will be evaluated in accordance with EPA guidance (U.S. EPA, 1989a)

Exposure Assessment

The objectives of the exposure assessment are to identify actual or potential exposure pathways, to characterize potentially exposed populations, and to determine the extent of exposure. An exposure pathway is comprised of four elements:

1) a source and mechanism of chemical release to the environment;
2) an environmental transport medium (e.g., air, groundwater) for the released constituent;

3) a point of potential contact of humans or biota with the affected medium (the exposure point); and

4) an exposure route (e.g., inhalation of contaminated dust) at the exposure point.

The exposure assessment process will include the following actions:

- analyze the probable fate and transport of compounds for both the present and the future uses;
- identify the human populations in the area, typical activities that would influence exposure, and sensitive population subgroups;
- identify potential exposure pathways under current and future land use conditions;
- develop exposure scenarios for each identified pathway and select those scenarios that are plausible;
- identify scenarios assuming both existing and potential future uses;
- identify the exposure parameters to be used in assessing the risk for all scenarios; and
- develop an estimate of the expected exposure levels from the potential release of contaminants.

Appropriate exposure scenarios will be identified for the site. Scenarios which could potentially be considered include residential, commercial/industrial, and/or recreational. Factors to be examined in the pathway and receptor identification process will include:

- Location of contaminant source;
- Local topography;
- Local meteorological data;
- Local geohydrology/surface water hydrology;
- Surrounding land use;
- Local water use;
- Prediction of contaminant migration; and
- Persistence and mobility of migrating contaminants.

For each migration pathway and for current and future conditions, receptors will be identified and characterized. Potential receptors will be defined by the appropriate exposure scenarios.

Toxicity Assessment

In accordance with EPA's risk assessment guidelines, the projected concentrations of chemicals of concern at exposure points will be compared with ARARs to judge the degree and extent of risk to public health and the environment (including plants, animals, and ecosystems). Because many ARARs do not exist for certain media (such as soils) nor are all ARARs necessarily health based, this comparison is not sufficient in itself to satisfy the requirements of the risk assessment process. Moreover, receptors may be exposed to contaminants from more than one medium. Nevertheless, the comparison with standards and criteria is useful in defining the exceedance of institutional requirements. Aside from the ARARs listed in Table 2-12, the following criteria will be examined:

- drinking water health advisories;
- ambient water quality criteria for protection of human health;
- Center for Disease Control and Agency for Toxic Substances and Disease Registry soil advisories; and
- National Ambient Air Quality Standards.

Critical toxicity values (i.e., numerical values derived from dose-response information for individual compounds) will be used in conjunction with the intake determinations to characterize risk. Toxicity reference values from EPA's Integrated Risk Information System (IRIS) will be used in preference to other EPA reference values.

The baseline risk assessment will also include a summary of any toxicological studies performed for chemicals of concern. The quality of these studies and their usefulness in estimating human health risks will be described. A more detailed explanation of the toxic effects of target chemicals will be provided in the appendices to the human health risk assessment and the environmental evaluation. Toxicity reference values will also be summarized. For the human health risk assessment, this will include a brief description of the studies upon which selected reference values were based, the uncertainty factors used to calculate RfDs, and the EPA weight-of-evidence classification for carcinogens. For those chemicals without EPA toxicity reference values, a literature search, including computer data bases, will be conducted for selected compounds. A toxicity value will then if possible, be derived from this information. EPA will be consulted regarding the

appropriateness of the data and the methodologies to be used in deriving reference values. Uncertainties regarding the toxicity assessment will be discussed.

Two types of critical toxicity values will be used:

- the risk reference dose (rfd); and
- slope factor (for carcinogenic chemicals only).

Risk Characterization

Risk characterization involves integrating exposure assumptions and toxicity information to quantitatively estimate the risk of adverse health effects. Risk characterization will be performed in accordance with EPA guidance, and a quantitative risk estimate will be performed for all chemicals. To assess the potential adverse health effects associated with access to the site, the potential level of human exposure to the selected chemicals must be determined. Intakes of exposed populations will be calculated separately for all appropriate pathways of exposure to chemicals. Then for each population-at-risk, the total intake by each route of exposure will be calculated by adding the intakes from each pathway. Total oral, inhalation, and dermal exposures will be estimated separately. Because short-term (subchronic) exposures to relatively high concentrations of chemicals may cause different non-carcinogenic effects than those caused by long-term (chronic) exposures to lower concentrations, two intake levels will be calculated for non-carcinogens for each route of exposure to each chemical, i.e., a subchronic daily intake (SDI) and a chronic daily intake (CDI). CDIs will be used for exposure to carcinogens. A reasonable maximum estimate of exposure (RME) based on the 95% upper confidence limit of the exposure data will be used where applicable. Risk will be quantified by comparison of contaminant intakes at exposure points to quantitative criteria for protection of human health (RFDs and slope factors.

An uncertainty analysis will be performed to identify and evaluate non-site and site specific factors that may produce uncertainty in the risk assessment, such as assumptions inherent in the development of toxicological endpoints (potency factors, reference doses). Moreover, site-specific factors which may produce uncertainty will also be discussed.

The results of the baseline risk assessment will be used to define and evaluate the remedial alternatives during the FS.

4.1.6.2 Environmental Evaluation

The objective of the environmental evaluation for Operable Unit No. 2 is to determine if the contaminants have caused or are causing any adverse environmental impact. The data to be collected will be utilized in conjunction with existing data to determine the bio-availability and toxicity of the contaminants to the flora and fauna of the 903 Pad, Mound, and East Trenches Areas.

The environmental evaluation will be conducted per guidance provided in the "Risk Assessment Guidance for Superfund", Volume II, Environmental Evaluation Manual (U. S. EPA, 1989d) as part of the 903 Pad, Mound and East Trenches Areas Phase II RI. The scope of the investigation will include the collection of vegetation, small mammals, arthropods, and aquatic life for determining if bio-accumulation is occurring, where applicable. The radioecology study, (Rocky Flats Plant Radioecology and Airborne Pathway Summary Report (Rockwell International, 1986f), the Final Environmental Impact Statement (U.S. DOE, 1980), the soils and surface water chemical data, and biological parameters collected during this environmental evaluation will be utilized to assess both the current and future ecological impacts from Operable Unit No. 2.

Field and laboratory activities will be necessary to determine what effect contaminants at the 903 Pad, Mound and East Trenches Areas are having on the area's flora and fauna. These activities may include field assessments, toxicity testing, and biomarkers.

Aquatic and terrestrial field surveys will provide detailed assessments of ecological effects. A field survey for aquatic invertebrates in South Walnut Creek will be conducted in order to determine if these organisms have been adversely affected by contaminants at this site. The survey will include relative abundance, species richness, community organization, and biomass. The upper reaches of North Walnut Creek will serve as a "control" for comparison with results from the South Walnut Creek survey.

Toxicity tests will be conducted for the aquatic systems if the aquatic survey indicates an impact. The toxicity of environmental media can be estimated using two approaches: a chemistry-based approach or toxicity-based approach. The chemistry-based approach will first be applied where chemical analyses of water, air, soil, or sediment will be compared to literature criteria to estimate toxicity. If this analysis fails to explain the contaminant impact on the biota, the toxicity based approach will be used. The toxicity-based approach involves the measurements of a biological effect associated with exposure to complex mixtures. For this study, toxicity testing will include acute and chronic toxicity methods for aqueous samples.

The concept of biomarkers is that selected endpoints (such as population-ecosystem density, diversity, or nutrient cycling) which are measured in individual organisms are typically comprised of biochemical or physiological responses that can provide sensitive indices of exposure or sublethal stress. The most direct biomarker to assess exposure is to measure tissue residues which is a key component of bio-accumulation. Biomarkers for sublethal stress include histopathology, determination of skeletal abnormalities, measurement of gas exchange in plants and other various measurements (i.e. enzymes). For this evaluation, toxicological endpoints for indicator or target species will be chosen based on a review of available laboratory toxicity tests providing quantitative data for species of concern, when available. In the absence of toxicological indices for the target species, toxicological endpoints will be derived using safety factors that reflect interspecies extrapolation, acute-to-chronic extrapolations, and added protection for endangered and/or threatened species. Procedures to be used for the field and laboratory activities are presented in the "Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Reference (U.S. EPA, 1989c).

In presenting the conclusions of the environmental evaluation for the 903 Pad, Mound and East Trenches Areas, the degree of success in meeting the overall objective of the evaluation will be discussed. Each conclusion will be presented along with items of evidence which would support or fail to support the conclusions and the uncertainty accompanying that conclusion. Any factors that limited or prevented development of definitive conclusions will also be described. Information will be provided to indicate the degree of confidence in the data that was used to assess the site and its contaminants.

4.1.7 Task 7 - Treatability Studies/Pilot Testing

This task includes efforts to prepare and conduct pilot and bench-scale treatability studies, and/or review data from recently conducted testing. These activities will serve to determine the operability, reliability, cost-effectiveness, and overall implementability of a particular remedial alternative. A comprehensive plan for treatability studies designed for remediation of waste sources, soils, and water at all operable units at Rocky Flats will be prepared and submitted to the regulatory agency in July 1990 in accordance with the draft IAG schedule. This section briefly discusses some of the work that has been conducted, is in progress, or is planned as part of this task.

The treatability studies/pilot testing to be conducted or reviewed focuses on removal of radionuclides from water and soil. Many of the promising soil treatments for remediating radionuclide contaminated soils evaluated in Rocky Flats' laboratories during the late 1970's and early 1980's are currently being revisited. These technologies are generally directed toward substantially reducing the volume of contaminated soils, with the subsequent intention of disposing of a small remaining concentrated fraction of contaminated soil in a facility approved to receive radioactive wastes. Past investigations have included evaluations of dry screening, wet screening, scrubbing, ultrasonics, chemical oxidation, calcination, desliming, flotation, and heavy-liquid density separation. Treatment processes currently being evaluated include wet screening, scrubbing (vibratory and attrition), mineral jigs, and acid leaching. Wash solutions used in these processes can be treated to remove radioactivity and recycled back to the process. A few of these studies are discussed below.

Metal Adsorption on MRA

A biomass material called Metal Recovery Agent (MRA) has been developed by Advanced Mineral Technologies (AMT) of Golden, Colorado. According to AMT, this material can be used to remove metals from water. Laboratory- and pilot-scale testing and full-scale systems have proven that MRA is reliable at high metal concentrations. However, testing is necessary to determine the effectiveness of MRA in removing low concentrations of radionuclides from water. The potential benefits of this technology are:

- radionuclide removal would be accomplished without having to retreat the water or significantly change the pH;

- the MRA material can potentially be regenerated at Rocky Flats; and
- the possibility that all metal removal from ground water can be accomplished using one process.

Metal Adsorption on Activated Carbon

This study is intended to determine if radionuclides in contaminated ground water can be adsorbed onto granular activated carbon (GAC). Positive test results would enable GAC to be considered for removing volatile organic compounds and radioactive metals from ground water. Subsequently, GAC may be tested to determine its efficiency in removing non-radioactive metals from ground water. An additional benefit of this study is that it will determine the extent of radionuclide loading on carbon. If it is determined that radionuclides significantly load onto carbon, subsequent evaluations of GAC to remove volatile organics from ground water must include the cost of either an on-site GAC regeneration facility or the cost of shipping the loaded GAC to the Nevada Test Site for disposal.

Column Test (Ferrite) for Radionuclide Removal

A proven technology previously used at Rocky Flats for removing highly levels of plutonium from process waste and uranium from water is treatment with ferrite (magnetite). The process requires ferrite to be added to a contaminated solution. With the pH in the 11 to 13 range, radionuclides adsorb to the ferrite. A flocculating agent is added to the slurry to improve settling and separation. The sludge settles to the bottom of the vessel, and is then removed and disposed, ferrite and all. The clean effluent remains. In this study, radionuclide contaminated water at a high pH is passed through a column filled with ferrite to determine the efficiency of radionuclide removal. The use of ferrite in a column will significantly reduce the amount of waste that must ultimately be handled. Once the ferrite is loaded with radionuclides, the column can be backflushed with a mild acid to remove the radionuclides, allowing reuse of the ferrite in the column. The concentrated metal contaminated stream would require further processing prior to disposal.

Mineral Jig Tests

The uses of a mineral jig to separate heavy metals (plutonium and americium) from coral was demonstrated at Johnston Atoll and at the Nevada Test Site using Rocky Flats soils.

The mineral jig would be the final stage in a three stage process intended to reduce the volume of plutonium contaminated soil by 75 to 85 percent. The first stage involves a soil washing technique which will reduce the total volume of contaminated soil by 60 to 70 percent. The second stage uses an attrition scrubbing technique to reduce the remaining volume of soil by an additional 25 to 30 percent. The third stage uses a mineral jig to reduce the volume of the remaining soil by an additional 10 to 15 percent.

The mineral jig process is the final stage of a possible technology for reducing the volume of contaminated soil at the 903 Pad Area. A number of questions can be answered by performing laboratory-scale work. First, the radionuclide removal efficiency using a mineral jig on actual Rocky Flats soil would be evaluated more thoroughly than what was done in the previous study. Second, important data would be obtained in order to scale up the equipment for pilot- or full-scale application. Finally, this data could then be used to estimate equipment and operating costs for the chosen mineral jig system. These costs would be compared with the cost of disposing the contaminated soils off-site. The potential use of a mineral jig as a secondary treatment rather than a tertiary treatment may also be determined from this study.

Pilot-Scale Tests for Soil Decontamination

If the laboratory-scale study of soil washing and attrition scrubbing is successful, pilot-scale development work should be conducted to properly size equipment to meet production requirements. The lack of pilot-scale data supporting the use of this technology would make it virtually impossible to evaluate the use of a full-scale soil washing/attrition scrubbing/mineral jig system to decontaminate Rocky Flats soils to acceptable levels. A pilot-scale system would be designed and tested on the contaminated sites using actual contaminated soils. The draft treatability study plan to be completed in July 190 will present specific tasks and methods for the technologies proposed.

4.1.8 Task 8 - Remedial Investigation Report

An RI Report will be prepared to consolidate and summarize the data obtained during Phase I, II, and III RI field work. This report will:

- Describe in detail the field activities which serve as a basis for the RI report. This will include any deviations from the work plan which occurred during implementation of the field investigation.
- Thoroughly discuss site physical conditions. This discussion will include surface features, meteorology, surface water hydrology, surficial geology, ground-water hydrology, demography and land use, and ecology.
- Present site characterization results from all RI investigative activities at Operable Unit No. 2 in order to further characterize the nature and extent of contamination as well as the rate of contaminant migration. The media to be addressed will include contaminant sources, soils, ground water, surface water, air, and biota.
- Discuss contaminant fate and transport. This discussion will include potential migration routes, contaminant persistence, and contaminant migration.
- Present a baseline risk assessment. The risk assessment will include human health and environmental evaluations.
- Present a summary and conclusions.

4.2 FEASIBILITY STUDY TASKS

At this time, a FS is planned for the 903 Pad, Mound, and East Trenches Areas to evaluate remedial alternatives for clean up of contaminated soils, ground water and surface water. Results of the Phase II RI and baseline risk assessment will indicate to what extent other remedial action is necessary for Operable Unit No. 2.

The FS process occurs in two phases. The first phase consists of developing and screening remedial alternatives, and the second phase includes a detailed analysis of alternatives (U.S. EPA, 1988a). Each of these two phases are discussed in the following sections.

4.2.1 Task 9 - Remedial Alternatives Development and Screening

The goal of this task is to identify and screen remedial alternatives. The work consists of four parts:

- Identifying remedial technologies;
- Screening remedial technologies;
- Developing remedial alternatives; and
- Screening remedial alternatives.

General response actions that may prove appropriate at the site were identified in Section 2.5. These general response actions were identified in order to determine data gaps to be addressed in RI activities. For each response action, potentially applicable remedial technologies were identified. These are also presented in Section 2.5. As the Phase II RI progresses, additional potentially applicable technologies may be determined.

During screening, the broad expanse of potentially applicable technology types will be narrowed by eliminating those technologies that are not technically implementable. Based on contaminant concentrations and other site-specific information contained in the Phase II RI, non-implementable technology types will be screened and eliminated from further consideration.

Technology process options will then be screened in order to select a representative process option for each technology type that is technically implementable. Process options are compared and eliminated based on their effectiveness relative to other processes within the same technology type. The screening is based on the volume of media to be treated, achievement of remediation goals, potential impacts on human health and the environment, and the proven performance and reliability of the option considering the contaminants and site characteristics. In addition to effectiveness, the process options will also be evaluated based on administrative feasibility and relative cost.

To develop alternatives, general response actions and the process options that are representative of the various technology types for each medium will be combined to form alternatives for the operable unit. In general, more than one response action is applicable to each medium. Response actions and process options

will be assembled based primarily on medium-specific considerations and implementability. Descriptions of each alternative will be developed for inclusion in the FS report.

During alternative screening, the developed alternatives will be evaluated to ensure that they protect human health and welfare and the environment from each potential pathway of concern at the operable unit. Treatment rates will be identified, and the size and configuration of on-site extraction and treatment systems or containment structures will be developed. The time frame in which treatment, containment or removal goals can be achieved will be determined. Lastly, spatial requirements for treatment units, containment structures, staging of construction materials, excavated wastes, etc. will be determined. If there are off-site actions such as surface water discharge, a regulatory review will be conducted to determine permit and compliance requirements.

Alternatives will then be further defined to provide sufficient information to differentiate among alternatives with respect to effectiveness, implementability and cost. Each alternative will be evaluated to determine its effectiveness in protecting human health and the environment, and in reducing toxicity, mobility or volume of hazardous wastes or contaminated media. As a consequence of reducing the toxicity, mobility or volume, the inherent threats or risks associated with wastes are decreased.

Implementability is a measure of both the technical and administrative feasibility of constructing, operating and maintaining a remedial action alternative. It is used during screening to evaluate the combinations of process options with respect to the site-specific conditions. Technical feasibility refers to the ability to construct, reliably operate and comply with action-specific (technology-specific) requirements in order to complete the remedial action. Administrative feasibility refers to the ability to obtain required permits and approvals; to obtain the necessary services and capacity for treatment, storage and disposal of hazardous wastes; and to obtain essential equipment and technical expertise.

Cost estimates for screening will be derived from cost curves, generic unit costs, vendor information, conventional cost estimating guides and prior estimates made for Rocky Flats and similar sites, with modifications made for Rocky Flats Plant conditions. Absolute cost accuracy is not necessary. The cost estimates for the alternatives however, will have the same relative accuracy for comparison and screening.

The cost estimating procedures used during screening are similar to those that will be used during the later detailed alternatives analysis. The later detailed analysis however, will receive more in-depth and detailed cost estimates of the components of each alternative. The screening cost estimates will include capital, operating, and maintenance costs. The operating and maintenance costs will be calculated for the lifetime of the treatment unit operation at the site. Present worth cost analysis will be used for alternatives in order to make the costs for the various alternatives comparable.

Alternatives with the most favorable results from the composite evaluation will be retained for further scrutiny during the detailed analysis. Not more than ten alternatives will be retained for detailed analysis (including containment and no action). At that time, it may be determined that additional site-specific information or technology-specific treatability studies are necessary for an objective detailed analysis. Also, it will be necessary to identify and verify the action-specific ARARs that each respective alternative will be required to meet.

4.2.2 Task 10 - Detailed Analysis of Remedial Alternatives

The detailed analysis is not a decision-making process, but it is the process of analyzing and comparing relevant information in order to select a remedial action. Each alternative will be assessed against nine evaluation criteria, and the assessments will be compared to identify the key tradeoffs among the alternatives. Assessment against the nine evaluation criteria is necessary for the FS and the subsequent Record of Decision (ROD)/Corrective Action Decision (CAD) to comply with the requirements of CERCLA/RCRA.

4.2.2.1 Alternative Analysis Against Nine Evaluation Criteria

Overall Protection of Human Health and the Environment

The alternatives will be individually analyzed to determine if the alternative provides adequate protection of human health and the environment. The protectiveness evaluation focuses on how the risks posed by each pathway are being eliminated, reduced or controlled by treatment, engineering or institutional measures.

Compliance with ARARs

Each alternative will be analyzed to determine whether it will comply with all state and federal ARARs that have been identified. The analysis will address compliance with chemical-specific, location-specific and action-specific ARARs. If an alternative will not comply with an ARAR, the FS report will present the basis for justifying a waiver.

Long-Term Effectiveness and Permanence

This criterion assesses the risks that are left at the site after the response objectives have been met. The risks associated with any remaining untreated wastes or treatment residuals will be evaluated. For each alternative, the magnitude of the residual risk, and the reliability and adequacy of the controls used to manage untreated wastes and treatment residuals will be addressed.

Reduction of Toxicity, Mobility or Volume Through Treatment

This criterion evaluates the statutory preference of selecting remedial actions that permanently reduce toxicity, mobility or volume of the hazardous materials. Factors evaluated for each alternative will include the proposed treatment process and the materials treated; the quantity of materials to be treated or destroyed, and how the primary hazardous threat will be addressed; the estimated degree of the reduction in toxicity, mobility or volume that will be achieved; the extent to which the treatment will be irreversible; the type and quantity of treatment residuals that will remain following treatment; and a determination if the alternative will comply with the statutory preference for treatment.

Short-Term Effectiveness

Short-term effectiveness refers to the effects an alternative may have during the construction and implementation phases until the cleanup objectives have been achieved. Alternatives will be evaluated to determine the effects on human health and the environment during implementation. Each alternative will be

assessed against the following factors: protection of the community and workers during the remedial action; environmental impacts; and the time required to achieve the remedial action objectives.

Implementability

This criterion assesses the technical and administrative feasibility of implementing an alternative, and the availability of the necessary services and materials. The following factors will be analyzed during the implementability assessment: the technical feasibility of construction and operation; the reliability of the technology; the practicability of employing additional remedial actions; the ability to monitor the effectiveness of the remedial action; administrative coordination with other offices and agencies; the availability of adequate off-site hazardous (or mixed) waste treatment, storage and disposal; and the availability of equipment, expertise and other services and materials.

Costs

An in-depth cost estimate will be conducted, and if necessary, a cost sensitivity analysis will be prepared to evaluate costing assumptions. Capital costs include direct construction costs and indirect non-construction costs and overhead costs. Operating and maintenance costs are incurred after construction in order to operate the remedial action on a continuous basis until the remedial action objectives have been achieved. FS cost estimates are expected to be within an accuracy range of minus 30 percent to plus 50 percent. If this accuracy cannot be achieved, it will be stated in the FS report.

A cost sensitivity analysis may be conducted to determine the effect that specific cost assumptions have on the total estimated cost of an alternative. The cost assumptions will be based on site-specific data, technological operating data, etc. although the assumptions will be subject to varying degrees of uncertainty depending on the accuracy of the data.

State Acceptance

This criterion addresses the state's administrative and technical issues and concerns with each of the alternatives.

Community Acceptance

Community acceptance addresses the public's concerns and issues with each of the alternatives.

4.2.2.2 Comparison of Alternatives

The FS report will contain a narrative discussion of each alternatives evaluation against the nine criteria. The narrative will describe how each alternative addresses the technical treatability issues, long-term and short-term effectiveness, costs, protection of human health and the environment, compliance with ARARs, etc. Once the alternatives have been described, a comparative analysis will be conducted to evaluate the relative performance of each alternative. The relative advantages and disadvantages of each alternative with respect to the other alternatives will be determined in order to assess the key tradeoffs that must be made in selecting a remedial action. A candidate alternative must generally attain the primary objectives of compliance with ARARs and overall protection of human health and the environment in order for it to be eligible for selection as the remedial action. A narrative discussion of the alternatives comparison describing the tradeoffs, and the benefits and detriments of each alternative in comparison to the others will be included in the FS report.

Following completion of the FS process, the results of the detailed alternatives comparison and risk management will be used as the rationale for selecting a preferred alternative and a remedial action. Although the purpose of the FS report and process is not to select a remedial action, it will present and evaluate the alternatives in sufficient detail in order to objectively consider all significant issues and select a feasible, cost-effective and defensible remedial action.

4.2.3 Task 11 - Feasibility Study Report

The FS Report will discuss and present the results of the feasibility study. The report will include sections describing site background; nature and extent of problem; results of the RI; risk assessment and environmental evaluation; identification, screening and detailed evaluation of remedial alternatives, and the recommended remedial actions. This task includes development of a Draft FS, a revised Draft FS that incorporates EPA and CDH comments, and preparation of a Final FS that incorporates public comments.

5.0 PHASE II RFI/RI FIELD SAMPLING PLAN

The overall objectives of the Phase II RFI/RI are source characterization and better definition of the nature and extent of contamination. Within these broad objectives, site specific data objectives and needs have been identified in Section 3.0. The purpose of this section is to provide a detailed field sampling plan which will realize these data objectives and needs.

The 903 Pad, Mound, and East Trenches Phase II RFI/RI will be performed in two steps. Step one will consist of contaminant plume delineation and will collect the data necessary to evaluate the need for an Interim Measure/Interim Remedial Action (IM/IRA) addressing contaminated ground water at Operable Unit No. 2. The Step One investigation discussed in Section 5.1 includes characterization of the nature and extent of contamination in alluvial ground water as well as in bedrock units directly connected with the alluvium. The Step Two investigation discussed in Section 5.2 will characterize the sources of contamination at Operable Unit No. 2.

5.1 STEP ONE- PLUME CHARACTERIZATION

Step One of the Phase II RFI/RI will focus on additional ground-water, surface water, sediment, and soil sampling to further characterize the nature and extent of contamination in each of these media arising from the SWMUs. These sampling programs are outlined in detail below.

5.1.1 Ground Water

Based on data collected during the Phase I investigation, volatile organics are present in alluvial and bedrock ground-water flow systems at the 903 Pad, Mound, and East Trenches Areas. The extent of contamination is not fully delineated, and additional monitor wells are needed to define the vertical and lateral extent of the organics. Potential major ion, trace metal, and radionuclide impacts to ground water were not well characterized in the Phase I RI report due to the lack of appropriate background ground-water quality data. Presented below are proposed monitoring well locations and rationale to further characterize ground-

water flow and quality in surficial materials and subcropping sandstones at Operable Unit No. 2. Further bedrock investigations will be proposed in the Phase III RFI/RI sampling plan scheduled for completion in 1990, subsequent to completion of the high resolution seismic reflection program.

All alluvial and bedrock ground-water monitoring wells will be drilled, sampled, and completed in accordance with the Rocky Flats ER Program SOP. The screened interval of all alluvial and bedrock monitor wells will extend across the entire saturated thickness, unless that interval is greater than ten feet. If the encountered saturated thickness is ten feet or less, a single well will be installed, and the screened interval will extend from five feet above the water table to the base of the water bearing zone. Two wells will be installed if the saturated thickness is greater than ten feet and less than 30 feet. One of the two wells will be completed at the water table as described above, and a second well will be completed across the lower part of the water bearing unit. If a saturated thickness greater than 30 feet is encountered, a third well will be completed at the base of the water bearing unit.

5.1.1.1 Alluvial Monitor Well Locations

903 Pad Area

Sixteen new alluvial monitor wells are proposed to further define the lateral extent of saturation, the potentiometric surface, and the extent volatile organics in the shallow ground-water system east and southeast of the 903 Pad Area (Figure 5-1 and Table 5-1). Three wells (1-90, 2-90, and 3-90) will be completed in Rocky Flats Alluvium east of the 903 Drum Storage Site to define the extent of volatile organics in alluvial ground water and to characterize alluvial ground-water flow. Likewise, six alluvial wells (4-90 through 9-90) will be completed in colluvium southeast of the 903 Pad Area for plume delineation. Alluvial wells 10-90, 11-90, and 12-90 will be drilled along the northern berm of the South Interceptor Ditch and completed in the berm to monitor the quality of ground water adjacent to the ditch. Well 13-90 will be located on the southern berm of the ditch across from 29-87 to evaluate the elevated inorganics detected in well 29-87 and the relationship between the South Interceptor Ditch and alluvial ground-water flow and quality.

TABLE 5-1

PROPOSED PHASE II WELLS AND BOREHOLES
FOR PLUME CHARACTERIZATION

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
1-90	Volatile organic plume definition downgradient (east) of 903 Pad and Mound Area.	25	5-25
2-90	Volatile organic plume definition downgradient (east) of 903 Pad and Mound Areas.	15	5-15
3-90	Volatile organic plume definition downgradient (east) of 903 Pad and Mound Areas.	15	5-15
4-90	Volatile organic plume definition downgradient (southeast) of 903 Pad and Mound Areas. Extent of saturated colluvium.	15	5-15
5-90	Volatile organic plume definition downgradient (southeast) of 903 Pad. Extent of saturated colluvium.	10	5-10
6-90	Volatile organic plume definition downgradient (southeast) of 903 Pad. Extent of saturated colluvium.	10	5-10
7-90	Volatile organic plume definition downgradient (southeast) of 903 Pad. Extent of saturated colluvium.	10	5-10
8-90	Volatile organic plume definition downgradient (southeast) of 903 Pad. Extent of saturated colluvium.	10	5-10
9-90	Volatile organic plume definition downgradient (south) of 903 Pad. Extent of saturated colluvium.	10	5-10
10-90	Volatile organic plume definition downgradient (south) of the 903 Pad Area. Ground water/surface water interaction at SID.	20	5-20
11-90	Volatile organic plume definition downgradient (southeast) of the 903 Pad Area. Ground water/surface water interaction at SID.	20	5-20
12-90	Volatile organic plume definition downgradient (southeast) of the 903 Pad Area. Ground water/surface water interaction at SID.	20	5-20

TABLE 5-1
(continued)

PROPOSED PHASE II WELLS AND BOREHOLES
FOR PLUME CHARACTERIZATION

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
13-90	Determine extent of elevated inorganics in well 29-87. Ground-water/surface water interaction at SID.	20	5-20
14-90	Woman Creek valley fill alluvial ground water. Upgradient of Pond C-1 and downgradient of well 64-86.	10	5-10
15-90	Woman Creek valley fill alluvial ground water upgradient of 65-86.	10	5-10
16-90	Woman Creek valley fill alluvial ground water downgradient of 65-86.	10	5-10
17-90	Ground water quality upgradient (west) of Operable Unit No. 2.	15	5-15
18-90	Ground-water quality and extent of saturation adjacent to possible Pallet Burn Site.	15	5-15
19-90	Ground-water quality downgradient (north) of Pallet Burn Site.	10	5-10
20-90	Ground-water quality downgradient (south) of Oil Burn Pit Site.	10	5-10
21-90	Ground-water quality downgradient (south) of Mound Site.	10	5-10
22-90	Ground-water quality downgradient of Trench T-1 and upgradient of Mound to differentiate between sources.	25	5-25
23-90	Ground-water quality upgradient of Trench T-1 and downgradient of the 903 Pad to differentiate between sources.	25	5-25
24-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	10	5-10
25-90	Volatile organic plume definition downgradient (east) of 903 Pad and Mound Areas.	15	5-15
26-90	Volatile organic plume definition downgradient (east) of Mound Area.	20	5-20
27-90	Volatile organic plume definition downgradient (north) of Mound Area	20	5-20
28-90	Volatile organic plume definition downgradient (north) of Mound Area.	10	5-10
29-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	15	5-15

TABLE 5-1
(continued)

PROPOSED PHASE II ALLUVIAL WELLS AND BOREHOLES
903 PAD, MOUND, AND EAST TRENCHES AREAS

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
30-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	10	5-10
31-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	15	5-15
32-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	15	5-15
33-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	15	5-15
34-90	Volatile organic plume definition downgradient (northeast) of Mound Area.	15	5-15
35-90	Volatile organic plume definition downgradient (north) of Trench T-3. Replace well 3-74.	10	5-10
36-90	Ground-water quality downgradient of Trench T-3 and upgradient of Trench T-4 to differentiate between sources.	10	5-10
37-90	Volatile organic plume definition downgradient (south) of Trench T-3.	15	5-15
38-90	Ground-water quality downgradient (south) of Trench T-4 and upgradient (north) of Trench T-11 to differentiate between sources.	15	5-15
39-90	Ground-water quality downgradient (south of Trench T-4) and upgradient (north) Trench T-10 to differentiate between sources.	15	5-15
40-90	Volatile organic plume definition downgradient (south) of Trench T-10.	20	5-20
41-90	Volatile organic plume definition downgradient (south) of Trench T-11.	20	5-20
42-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
43-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
44-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	20	5-20

TABLE 5-1
(continued)

PROPOSED PHASE II ALLUVIAL WELLS AND BOREHOLES
903 PAD, MOUND, AND EAST TRENCHES AREAS

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
45-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
46-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
47-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
48-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
49-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	10	5-10
50-90	Ground-water quality upgradient of southern East Trenches	25	5-25
51-90	Ground-water quality downgradient (north) of Trench T-9.	30	5-30
52-90	Ground-water quality downgradient (south) of Trench T-9.	40	5-40
53-90	Ground-water quality downgradient (north) of Trench T-5.	40	5-40
54-90	Ground-water quality downgradient (east) of Trenches T-5, T-6, and T-7. Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
55-90	Ground-water quality downgradient (south) of Trench T-7 and upgradient (north) of Trench T-8 to differentiate between sources.	40	5-40
56-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40
57-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40
58-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40

TABLE 5-1
(continued)

PROPOSED PHASE II ALLUVIAL WELLS AND BOREHOLES
903 PAD, MOUND, AND EAST TRENCHES AREAS

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
59-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40
60-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40
61-90	Volatile organic plume definition downgradient (southeast) of East Trenches Area.	40	5-40
62-90	Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
63-90	Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
64-90	Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
65-90	Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
66-90	Evaluate influence of East Spray Field Sites on ground-water flow and quality.	40	5-40
67-90	Volatile organic plume definition and extent of saturation downgradient (north) of East Trenches Area.	40	5-40
68-90	Ground-water quality southeast of East Trenches Area.	10	5-10

PLUME –
TOTAL 68 WELLS

No volatile organics have been detected in Woman Creek valley fill alluvium downgradient of the 903 Pad Area in well 65-86. However, inorganic compounds appear elevated in this well, and PCE was detected at 8J ug/l in well 64-86 during one sampling event (second quarter 1989). Thus, three additional wells will be installed along Woman Creek to further characterize the valley fill alluvium. Well 14-90 will be completed west (upgradient) of Pond C-1; well 15-90 will be completed west (upgradient) of 65-86 and east (downgradient) of Pond C-1; and well 16-90 will be drilled east (downgradient) of 65-86 but west (upgradient) of Pond C-2.

Mound Area

Several new alluvial monitor wells are proposed for the Mound Area. The current upgradient well (43-86) appears to be impacted by the 903 Drum Storage Site, so another upgradient alluvial well is needed. Well 17-90 will be installed in Rocky Flats Alluvium west of 43-86 and the 903 Pad Area to serve as an upgradient well.

Four wells will be located downgradient of the Oil Burn Pit No 2 Site and the Pallet Burn Site to monitor ground water from these sites. As these SWMUs are within the PSZ fence, well installation downgradient of them is difficult. Wells will be placed as close as possible to the SWMUs. Well 18-90 will be installed adjacent to the Western Pallet Burn Site, and wells 19-90 and 20-90 will be installed downgradient of this site inside the PSZ fence. Well 21-90 will be installed downgradient of the Oil Burn Pit No. 2 Site outside of the PSZ fence.

Thirteen wells will be located downgradient of Trench T-1 and the Mound Site. Wells 22-90 and 23-90 will be installed adjacent to and downgradient of Trench T-1. Data from well 22-90, located between the trench and the Mound Site, will differentiate between sources. In addition, three wells (24-90, 25-90, and 26-90) will be installed downgradient of the Mound Site and Trench T-1 to the east to evaluate the extent of volatile organic contamination in this direction. Eight wells (27-90 through 34-90) will be completed north and northeast of the Mound Area to characterize ground-water flow and quality toward South Walnut Creek.

East Trenches Area

Seven new alluvial wells will be drilled within the northern trench area to characterize ground-water quality and flow. Wells 35-90, 36-90, and 37-90 will be installed downgradient of Trench T-3 to the north, east, and south, respectively. These wells will assist in differentiating between Trenches T-3 and T-4 as the source of volatile organics in well 36-87. Wells 38-90 and 39-90 will be constructed between Trenches T-3/T-4 and T-11/T-10 in an attempt to differentiate the two groups of trenches as contaminant sources. Alluvial ground-water flow in this area is to the southeast toward Trenches T-10 and T-11. Wells 40-90 and 41-90 will be located southeast of Trenches T-11 and T-10 to further characterize the extent of volatile organics in alluvial ground water.

Downgradient of the northern East Trenches toward South Walnut Creek, eight new wells will be installed to evaluate saturated conditions and to delineate the plume north of the Trenches (wells 42-90, 43-90, 44-90, 45-90, 46-90, 47-90, 48-90, and 49-90).

Eight new alluvial wells are proposed within the southern trenches, again, to help differentiate between these potential contaminant sources and define the extent of contamination. Well 50-90 will be installed south of the northern trenches and west of the southern trenches to differentiate between these source areas. Wells 51-90 and 52-90 will be drilled adjacent to Trench T-9, and wells 53-90, 54-90, and 55-90 will bracket flow into and out of the group of Trenches T-5, T-6, and T-7. In addition, well 55-90, located downgradient of Trenches T-5, T-6, and T-7 and upgradient of Trench T-8 will help differentiate these sites as contaminant sources. Wells 56-90 and 57-90 will be located downgradient (south and southeast) of Trench T-8.

Ten alluvial wells will be installed surrounding the southern East Trenches and the East Spray Field to monitor flow and quality of ground water exiting the area. These wells (58-90 through 67-90) will help delineate the southern and eastern extent of volatile organics in Rocky Flats alluvial ground water. Well 68-90 will be located south of this line of wells and will be completed in colluvium to further characterize hydrogeologic conditions in this area.

5.1.1.2 Bedrock Monitor Well Locations

Arapahoe sandstones which subcrop within Operable Unit No. 2 are in hydraulic connection with surficial materials and are thus part of the uppermost aquifer. During previous investigations, bedrock monitoring wells were installed adjacent to alluvial wells in the uppermost sandstone encountered. Some of these wells are completed in subcropping sandstone, and volatile organic contaminants have been detected in some wells as discussed in Section 2.0. In order to further characterize ground-water flow directions and ground-water quality within these shallow sandstones, additional bedrock monitor wells will be installed during the Phase II RFI/RI.

The placement of bedrock monitor wells will be based on conditions encountered during alluvial well drilling. Alluvial wells will be drilled five feet into bedrock to locate subcropping sandstones. If a saturated subcropping sandstone greater than three feet in thickness is encountered within this five-foot interval, surface casing will be set, the boring will be advanced through the sandstone, and a bedrock well will be completed. A second boring will then be drilled adjacent to the bedrock well for installation of an alluvial well.

5.1.1.3 Chemical Analysis of Ground-water Samples

Ground-water samples will be collected from all new and existing monitoring wells at the 903 Pad, Mound, and East Trenches Areas upon completion of well development. Ground-water samples will be analyzed in the field for pH, conductivity, and temperature. With the exception of samples designated for organics, major ions, and tritium analyses, all samples will be filtered and preserved in the field. Organics, major ions, and tritium samples will not be filtered. Samples will be analyzed for the parameters listed in Table 5-2 during the first round of sampling after completion of 1990 wells. This parameter list may be reduced in subsequent quarterly sampling events if certain parameter groups are not detected or are not significantly above background levels.

TABLE 5-2

PHASE II RI
GROUND-WATER SAMPLING PARAMETERS

FIELD PARAMETERS
- pH
- Specific Conductance
- Temperature

INDICATORS
- Total Dissolved Solids

DISSOLVED METALS
- Target Analyte List - Metals
  - Aluminum
  - Antimony
  - Arsenic
  - Barium
  - Beryllium
  - Cadmium
  - Calcium
  - Chromium
  - Cobalt
  - Copper
  - Iron
  - Lead
  - Magnesium
  - Manganese
  - Mercury
  - Nickel
  - Potassium
  - Selenium
  - Silver
  - Sodium
  - Thallium
  - Vanadium
  - Zinc
- Other Metals
  - Molybdenum
  - Strontium
  - Cesium
  - Lithium
  - Tin

ANIONS
- Carbonate
- Bicarbonate
- Chloride
- Sulfate
- Nitrate as N
- Cyanide

ORGANICS
- Target Compound List - Volatiles
  - Chloromethane
  - Bromomethane
  - Vinyl Chloride
  - Chloroethane
  - Methylene Chloride
  - Acetone
  - Carbon Disulfide
  - 1,1-Dichloroethene
  - 1,1-Dichloroethane
  - total 1,2-Dichloroethene
  - Chloroform

TABLE 5-2 (Continued)

PHASE II RI
GROUND-WATER SAMPLING PARAMETERS

ORGANICS (CONT.)

Target Compound List - Volatiles (Continued)

1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
cis-1,3-Dichloropropene
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene
Ethyl Benzene
Styrene
Total Xylenes

Target Compound List -- Semi-volatiles

Phenol
bis(2-Chloroethyl)ether
2-Chlorophenol
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Benzyl Alcohol
1,2-Dichlorobenzene
2-Methylphenol
bis(2-Chloroisopropyl)ether
4-Methylphenol
N-Nitroso-Dipropylamine
Hexachloroethane
Nitrobenzene
Isophorone
2-Nitrophenol
2,4-Dimethylphenol
Benzoic Acid
bis(2-Chloroethoxy)methane
2,4-Dichlorophenol
1,2,4-Trichlorobenzene
Naphthalene
4-Chloroaniline
Hexachlorobutadiene
4-Chloro-3-methylphenol(para-chloro-meta-cresol)
2-Methylnaphthalene
Hexachlorocyclopentadiene
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
2-Chloronaphthalene
2-Nitroaniline
Dimethylphthalate
Acenaphthylene

TABLE 5-2 (Continued)

PHASE II RI
GROUND-WATER SAMPLING PARAMETERS

ORGANICS (CONT.)

Target Compound List -- Semi-volatiles (Continued)

- 3-Nitroaniline
- Acenaphthene
- 2,4-Dinitrophenol
- 4-Nitrophenol
- Dibenzofuran
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- Diethylphthalate
- 4-Chlorophenyl Phenyl ether
- Fluorene
- 4-Nitroaniline
- 4,6-Dinitro-2-methylphenol
- N-nitrosodiphenylamine
- 4-Bromophenyl Phenyl ether
- Hexachlorobenzene
- Pentachlorophenol
- Phenanthrene
- Anthracene
- Di-n-butylphthalate
- Fluoranthene
- Pyrene
- Butyl Benzylphthalate
- 3,3'-Dichlorobenzidine
- Benzo(a)anthracene
- bis(2-ethylhexyl)phthalate
- Chrysene
- Di-n-octyl Phthalate
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Indeno(1,2,3-cd)pyrene
- Dibenz(a,h)anthracene
- Benzo(g,h,i)perylene

Target Compound List -- Pesticides/PCBs

- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- Heptachlor
- Aldrin
- Heptachlor Epoxide
- Endosulfan I
- Dieldrin
- 4,4'-DDE
- Endrin
- Endosulfan II
- 4,4'-DDD
- Endosulfan Sulfate
- 4,4'-DDT
- Endrin Ketone
- Methoxychlor
- alpha-Chlordane
- gamma-Chlordane
- Toxaphene
- AROCLOR-1016

TABLE 5-2 (Continued)

PHASE II RI
GROUND-WATER SAMPLING PARAMETERS

ORGANICS (CONT.)

Target Compound List -- Pesticides/PCBs (continued)

AROCLOR-1221
AROCLOR-1232
AROCLOR-1242
AROCLOR-1248
AROCLOR-1254
AROCLOR-1260

RADIONUCLIDES

Gross Alpha
Gross Beta
Uranium 233+234, 235, and 238
Americium 241
Plutonium 239+240
Tritium
Cesium 137
Strontium 90
Radium 226, 228

5.1.1.4 Hydraulic Testing Program

Three multi-well pumping and tracer tests will be performed to evaluate the hydraulic properties of the subsurface materials at the 903 Pad, Mound and East Trenches Areas. The goals of the program are to:

1. Develop parameters for rate of movement calculations (hydraulic conductivity and effective porosity) for both the bedrock and alluvial materials,
2. Evaluate the degree of connection between the alluvium and the bedrock (both sandstone and claystone), and
3. Develop parameters for estimation of production rates from remedial ground-water collection systems.

The testing program has been designed based on the hydrogeologic model of the subsurface described in earlier sections of this plan. Three distinct situations are present in the subsurface at the 903 Pad, Mound and East Trenches Areas.

1. The Rocky Flats Alluvium is unsaturated and is directly underlain by the of the Arapahoe Number One Sandstone Formation (saturated).
2. The Rocky Flats Alluvium is directly underlain by the Number One Sandstone and both are saturated.
3. The Rocky Flats Alluvium is saturated and is underlain by claystone of the Arapahoe Formation.

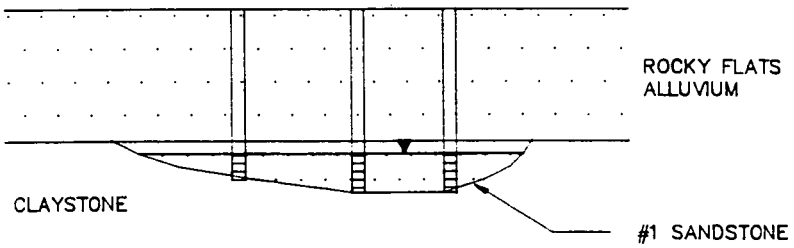
Different tests have been designed to evaluate hydraulic conductivity, storage properties, and the effective porosity for each of these situations. Schematics of the subsurface conditions and test well layouts are shown on Figure 5-2.

Detailed designs for each of the tests are presented below; however, before the tests are actually performed, the production wells will be installed and tested (step-drawdown or other single hole technique) to establish better estimates of the hydraulic properties at the test locations. The tests will then be re-evaluated

TEST T-1:

ALLUVIUM DRY
SATURATED SANDSTONE.

MULTI-WELL PUMPING TEST
CONVERGING RADIAL TRACER TEST

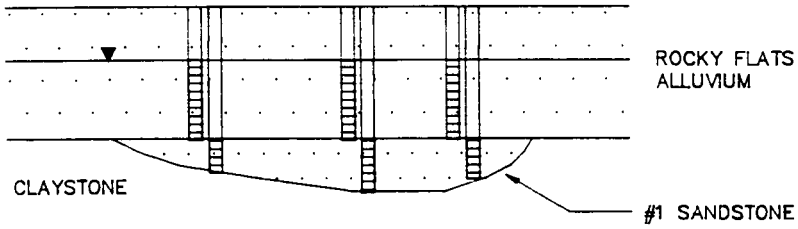


TEST T-2:

SATURATED ALLUVIUM &
SATURATED SANDSTONE

PUMPING TEST OF ALLUVIUM
W/ OBSERVATION WELLS IN
SANDSTONE.

PUMPING TEST OF SANDSTONE
W/ OBSERVATION WELLS IN
ALLUVIUM.



TEST T-3:

SATURATED ALLUVIUM
UNDERLAIN BY CLAYSTONE.

PUMPING TEST OF ALLUVIUM
W/ OBSERVATION WELL IN CLAYSTONE.

CONVERGING RADIAL TRACER TEST

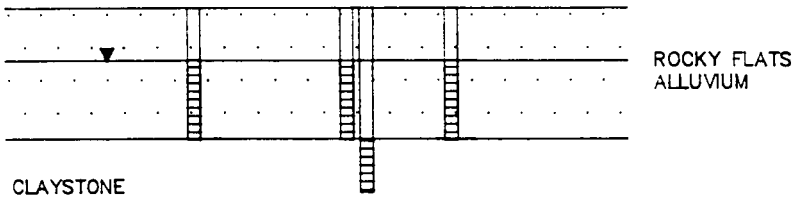


FIGURE 5-2
HYDRAULIC TEST DIAGRAMS

and possibly re-designed (observation well locations, pumping rates and duration of pumping). After re-evaluation of the test designs, the observation wells will be installed and the tests will be performed. All water produced during the testing of the production wells will be stored in tanker trucks and reinjected into the production well from which the water was produced.

Case 1. Unsaturated Alluvium over Saturated Sandstone

A multi-well pumping test followed by a converging radial tracer test will be performed at the T-1 location shown on Figure 5-1. An array of one production well and four observation wells will be completed in the Number One Sandstone. The observation wells will be located at distances of 5, 10, 20 and 40 feet from the production well (Figure 5-3).

Using Theis (1935) and hydraulic properties developed in the Phase I RI (hydraulic conductivity of 4×10^{-4} cm/s, storage coefficient of 0.1 and saturated thickness of 15 feet), it is anticipated that a steady pumping rate of one gallon per minute (gpm) can be maintained at the T-1 location. If the test array is located approximately 40 feet from the edge of the sandstone channel, significant interference from the boundary (additive drawdown of 0.5 feet) should be observable in the most distant observation well after five days of pumping. All produced water (7,200 gallons) will be stored in tanker trucks and then reinjected into the production well at the end of the recovery period (see below).

Immediately following the five days of steady pumping, a converging radial tracer test will be performed by injecting rhodamine-WT dye into the observation located five feet from the production well (steady pumping will continue throughout the tracer test). It is anticipated that the 50 percent concentration will arrive at the production well approximately ten hours after introduction of the fluorescent dye and that the entire test will require approximately 24 hours to complete. The tracer test will be analyzed following Sauty (1980).

After completion of the tracer test, recovery of the system will be monitored for an additional six days. Drawdowns in the observation and production wells will be evaluated using methods described in Bedinger and Reed (1988), such as Neuman (1972 and 1973).

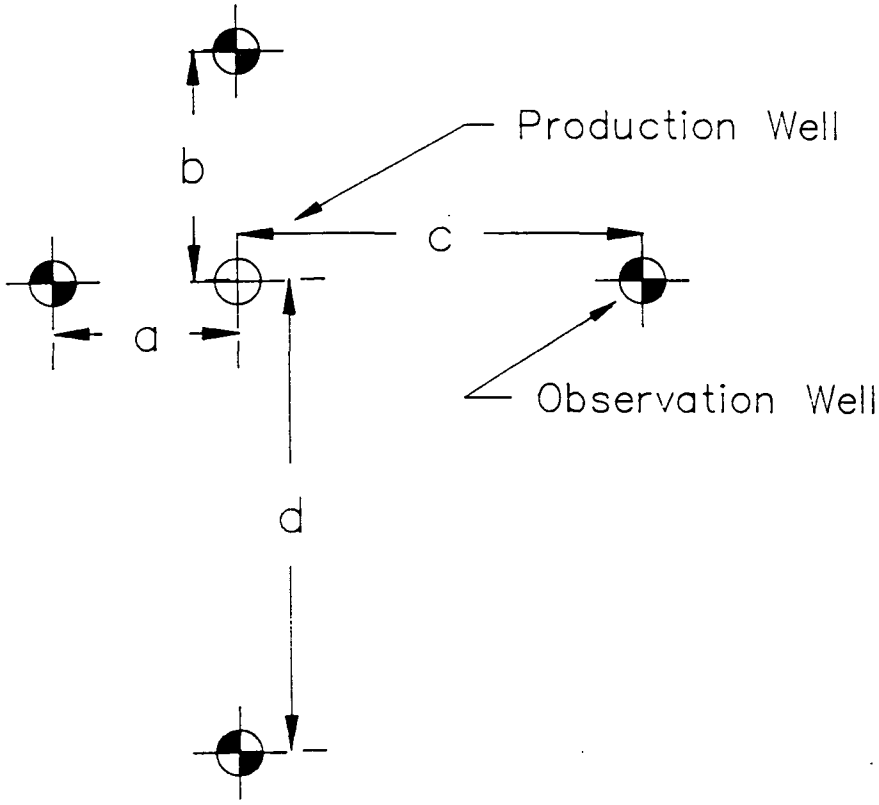
Case 2. Saturated Alluvium over Saturated Sandstone

Two multi-well pumping tests will be performed at the T-2 location shown on Figure 5-1. An array of one production well and four observation wells will be completed in the Rocky Flats Alluvium and a second array of one production well and four observation wells will be completed in the Number One Sandstone. The observation wells in the Rocky Flats Alluvium will be located at distances of 5, 10, 30 and 75 feet from the production well. The observation wells in the Number One Sandstone will be located at distances of 5, 10, 20 and 40 feet from the production well (Figure 5-3).

A five day production test of the Rocky Flats Alluvium will be performed with an additional five days of recovery. Water level responses will be measured in both the alluvium and the sandstone. A second five day production test of the sandstone will be performed with monitoring of observation wells in both the alluvium and the sandstone. A tracer test will not be performed as part of this test because of expected interference (dilution effects) from the overlying or underlying units.

The pumping test of the sandstone will be conducted at one gpm (see discussion of Case 1 above for expected production volume and aquifer responses). Using Theis (1935) and alluvial hydraulic properties developed in the Phase I RI (hydraulic conductivity of 1×10^{-2} cm/s, storage coefficient of 0.1 and saturated thickness of five feet), it is anticipated that a steady pumping rate of three gpm can be maintained from the alluvium. At the end of the recovery period for the second test, all produced water (22,000 gallons from the alluvium and 7,200 gallons from the sandstone stored in separate tanker trucks) will be reinjected into the production well from which the water came.

Drawdowns in the observation and production wells will be evaluated using numerical modeling techniques such as Lappala et al. (1987) as well as the more standard methods described in Bedinger and Reed (1988). However, because the hydrogeologic conditions do not meet the assumptions of the standard leaky-aquifer analyses, it is anticipated that numerical modeling will be the only effective method to evaluate the interconnection between the alluvium and the sandstone.



EXPLANATION OF WELL SPACINGS (FEET)

	a	b	c	d
Sandstone	5	10	20	40
Alluvium	5	10	30	75

FIGURE 5-3
OBSERVATION WELL LAYOUT

Case 3. Saturated Alluvium over Claystone

A multi-well pumping test followed by a converging radial tracer test will be performed at the T-3 location shown on Figure 5-1. An array of one production well and four observation wells will be completed in alluvium. The observation wells will be located at distances of 5, 10, 30 and 75 feet from the production well (Figure 5-3). In addition, a single observation well will be installed adjacent to the production well to monitor head response at a depth of approximately five feet into the claystone.

Using Theis (1935) and alluvial properties developed in the Phase I RI (hydraulic conductivity of $1x10^{-2}$ cm/s, storage coefficient of 0.1 and saturated thickness of five feet), it is anticipated that a steady pumping rate of three gpm can be maintained from the alluvium. All produced water (22,000 gallons) will be stored in tanker trucks and then reinjected into the production well at the end of the recovery period. Using a simple finite-difference evaluation, it is estimated that a water level response will be measurable in the claystone (0.1 feet of drawdown for a vertical conductivity of $1x10^{-6}$ cm/s) after five days of pumping.

Immediately following the five days of steady pumping, a converging radial tracer test will be performed by injecting rhodamine-WT dye into the observation located five feet from the production well. It is anticipated that the 50 percent concentration will arrive at the production well approximately one hour after introduction of the fluorescent dye and that the entire test will require approximately 24 hours to complete. The tracer test will be analyzed following Sauty (1980).

After completion of the tracer test, recovery of the system will be monitored for an additional six days. Drawdowns in the observation and production wells in the alluvium will be evaluated using methods described in Bedinger and Reed (1988). The response of the observation well in the claystone will be evaluated using methods described in Bedinger and Reed (1988), such as Lappala et al. (1987).

5.1.2 Surface Water and Sediments

5.1.2.1 Sample Locations

Nineteen surface water stations were established south of the 903 Pad and East Trenches Areas in the Woman Creek drainage during the 1986 and 1987 investigations, and 12 stations were established north of the Mound and East Trenches Areas in the South Walnut Creek drainage. These 31 stations will also be sampled during the Phase II RFI/RI investigation. Figure 2-11 presents surface water monitoring locations in the area, and Table 5-3 presents the surface water stations to be sampled during the Phase II RI.

Sediment samples were taken in October 1989 at stations along South Walnut Creek as well as Woman Creek and the South Interceptor Ditch. The resulting data should suffice as confirmatory information regarding the concentrations of volatile organics, metals, other inorganics, and radionuclides in the sediments. For the Phase II RI, physical characteristics of the sediments (background and "downgradient") and the spatial distribution of the metal concentrations will be examined to assess the adequacy of the background sediment geochemical characterization and thus whether metals are contaminants in the sediments at the 903 Pad, Mound, and East Trenches Areas.

5.1.2.2 Chemical Analysis of Surface Water and Sediment Samples

Surface water samples will be analyzed in the field for pH, conductivity, temperature, and dissolved oxygen. Laboratory analyses of surface water samples will consist of the parameters listed in Table 5-4, and sediments will be analyzed for the parameters listed in Table 5-5. All samples requiring filtration will be filtered in the field, and all samples will be preserved in the field. Surface water sampling and stream flow measurements will follow the procedures described in the Rocky Flats ER Program SOP.

TABLE 5-3

SURFACE WATER SAMPLING STATIONS

SW-21
SW-22
SW-23
SW-24
SW-25
SW-26
SW-27
SW-28
SW-29
SW-30
SW-50
SW-51
SW-52
SW-53
SW-54
SW-55
SW-56
SW-57
SW-58
SW-59
SW-60
SW-61
SW-62
SW-63
SW-64
SW-65
SW-70
SW-77
SW-101
SW-102
SW-103

TABLE 5-4

PHASE II RI
SURFACE WATER SAMPLING PARAMETERS

FIELD PARAMETERS

- pH
- Specific Conductance
- Temperature
- Dissolved Oxygen

INDICATORS

- Total Dissolved Solids
- Total Suspended Solids

DISSOLVED AND TOTAL METALS

Target Analyte List - Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Silver
- Sodium
- Thallium
- Vanadium
- Zinc

Other Metals

- Molybdenum
- Strontium
- Cesium
- Lithium
- Tin

ANIONS

- Carbonate
- Bicarbonate
- Chloride
- Sulfate
- Nitrate as N
- Cyanide

ORGANICS

Target Compound List - Volatiles

- Chloromethane

TABLE 5-4 (Continued)

PHASE II RI
SURFACE WATER SAMPLING PARAMETERS

Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Carbon Disulfide
1,1-Dichloroethene

ORGANICS (CONT.)

Target Compound List - Volatiles (Continued)

1,1-Dichloroethane
total 1,2-Dichloroethene
Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2Trichloroethane
Benzene
cis-1,3-Dichloropropene
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene
Ethyl Benzene
Styrene
Total Xylenes

RADIONUCLIDES

Gross Alpha (Filtered)
Gross Beta (Filtered)
Uranium 233+ 234, 235, and 238
(Filtered and Unfiltered)
Americium 241 (Filtered and Unfiltered)
Plutonium 239+240 (Filtered and Unfiltered)
Tritium (Unfiltered)
Cesium 137
Radium 226, 228
Strontium 90

TABLE 5-5

PHASE II RI
SOURCE SAMPLING PARAMETERS
SOIL, SEDIMENT AND WASTE SAMPLES

METALS

Target Analyte List - Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Calcium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Nickel
- Potassium
- Selenium
- Silver
- Sodium
- Thallium
- Vanadium
- Zinc

Other Metals

- Molybdenum
- Cesium
- Strontium
- Lithium
- Tin

INORGANICS

- pH
- Nitrate
- Percent Solids

ORGANICS

Target Compound List - Volatiles

- Chloromethane
- Bromomethane
- Vinyl Chloride
- Chloroethane
- Methylene Chloride
- Acetone
- Carbon Disulfide
- 1,1-Dichloroethene
- 1,1-Dichloroethane
- total 1,2-Dichloroethene
- Chloroform
- 1,2-Dichloroethane
- 2-Butanone
- 1,1,1-Trichloroethane
- Carbon Tetrachloride
- Vinyl Acetate
- Bromodichloromethane
- 1,1,2,2-Tetrachloroethane
- 1,2-Dichloropropane
- trans-1,2-Dichloropropene
- Trichloroethene

TABLE 5-5

PHASE II RI
SOURCE SAMPLING PARAMETERS
SOIL, SEDIMENT AND WASTE SAMPLES

ORGANICS (CONT.)

Target Compound List - Volatiles (Continued)

- Dibromochloromethane
- 1,1,2-Trichloroethane
- Benzene
- cis-1,3-Dichloropropene
- Bromoform
- 2-Hexanone
- 4-Methyl-2-pentanone
- Tetrachloroethene
- Toluene
- Chlorobenzene
- Ethyl Benzene
- Styrene
- Total Xylenes
- 1,1-Dichloroethane

Target Compound List -- Semi-volatiles

- Phenol
- bis(2-Chloroethyl)ether
- 2-Chlorophenol
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Benzyl Alcohol
- 1,2-Dichlorobenzene
- 2-Methylphenol
- bis(2-Chloroisopropyl)ether
- 4-Methylphenol
- N-Nitroso-Dipropylamine
- Hexachloroethane
- Nitrobenzene
- Isophorone
- 2-Nitrophenol
- 2,4-Dimethylphenol
- Benzoic Acid
- bis(2-Chloroethoxy)methane
- 2,4-Dichlorophenol
- 1,2,4-Trichlorobenzene
- Naphthalene
- 4-Chloroaniline
- Hexachlorobutadiene
- 4-Chloro-3-methylphenol(para-chloro-meta-cresol)
- 2-Methylnaphthalene
- Hexachlorocyclopentadiene
- 2,4,6-Trichlorophenol
- 2,4,5-Trichlorophenol
- 2-Chloronaphthalene
- 2-Nitroaniline
- Dimethylphthalate
- Acenaphthylene
- 3-Nitroaniline
- Acenaphthene
- 2,4-Dinitrophenol
- 4-Nitrophenol
- Dibenzofuran
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene

TABLE 5-5 (Continued)

PHASE II RI
SOURCE SAMPLING PARAMETERS
SOIL, SEDIMENT AND WASTE SAMPLES

ORGANICS (CONT.)

Target Compound List -- Semi-volatiles (continued)

- Diethylphthalate
- 4-Chlorophenyl Phenyl ether
- Fluorene
- 4-Nitroaniline
- 4,6-Dinitro-2-methylphenol
- N-nitrosodiphenylamine
- 4-Bromophenyl Phenyl ether
- Hexachlorobenzene
- Pentachlorophenol
- Phenanthrene
- Anthracene
- Di-n-butylphthalate
- Fluoranthene
- Pyrene
- Butyl Benzylphthalate
- 3,3'-Dichlorobenzidine
- Benzo(a)anthracene
- bis(2-ethylhexyl)phthalate
- Chrysene
- Di-n-octyl Phthalate
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Indeno(1,2,3-cd)pyrene
- Dibenz(a,h)anthracene
- Benzo(g,h,i)perylene

Target Compound List -- Pesticides/PCBs

- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- Heptachlor
- Aldrin
- Heptachlor Epoxide
- Endosulfan I
- Dieldrin
- 4,4'-DDE
- Endrin
- Endosulfan II
- 4,4'-DDD
- Endosulfan Sulfate
- 4,4'-DDT
- Endrin Ketone
- Methoxychlor
- alpha-Chlordane
- gamma-Chlordane
- Toxaphene
- AROCLOR-1016
- AROCLOR-1221
- AROCLOR-1232
- AROCLOR-1242
- AROCLOR-1248
- AROCLOR-1254
- AROCLOR-1260

TABLE 5-5 (Continued)

PHASE I RI
SOURCE SAMPLING PARAMETERS
SOIL, SEDIMENT AND WASTE SAMPLES

RADIONUCLIDES

Gross Alpha
Gross Beta
Uranium 233+234, 235 and 238
Americium 241
Plutonium 239+240
Tritium
Strontium 90, 89
Cesium 137

NOTE: Select samples will be analyzed for constituents in 40 CFR 268 Table CCWE and Appendix III as well as organic matter content and BTU content.

5.1.3 Surficial Soils

Plutonium was elevated above background levels in Phase I RI boreholes from several sites in the 903 Pad, Mound, and East Trenches Areas. However, plutonium contamination is presumed to be limited to the uppermost soil. In order to characterize the vertical and horizontal extent of surficial soil plutonium contamination, surficial soil scrapes and vertical soil profiles will be collected in all three remedial investigation areas, and in the Plant areas (buffer zone) south and east of these areas to Indiana Street during the Step One investigation.

In addition to the RI activities, EG&G conducts annual soil sampling to assess plutonium contamination in soils surrounding the 903 Drum Storage Site. The Rocky Flats Plant site soil sampling procedures are designed to assess total plutonium in the soil. A ten cm by ten cm frame is driven five cm into the soil, and material within the frame is collected. Ten subsamples are collected from an area approximately three meters by one meter. Samples are collected annually on one and two mile intervals from points located on 18 degree radii from Plant center. Soil is collected from approximately the same point each year. Figure 5-4 is a map showing soil plutonium concentrations at the sample points averaged over the years 1984-1987. Extensive sampling has also occurred off site. However, off-site soil sampling is outside the scope of this investigation, as off-site soil contamination is being remediated as a separate project.

In order to assess the extent of plutonium in surficial soils within Plant boundaries, soil samples will be collected across the area identified in Figure 5-5. Figure 5-5 was constructed by including all areas where soil plutonium concentrations are expected to exceed two dpm/g (approximately one pCi/g). This area consists of approximately 800 acres and is based on the data in Figure 5-4. The State of Colorado requires special techniques for construction lands with plutonium concentrations greater than two dpm/g of dry soil which is approximately equal to one pCi/g. To evaluate the soil plutonium values relative to this standard, the CDH sampling protocol will be used.

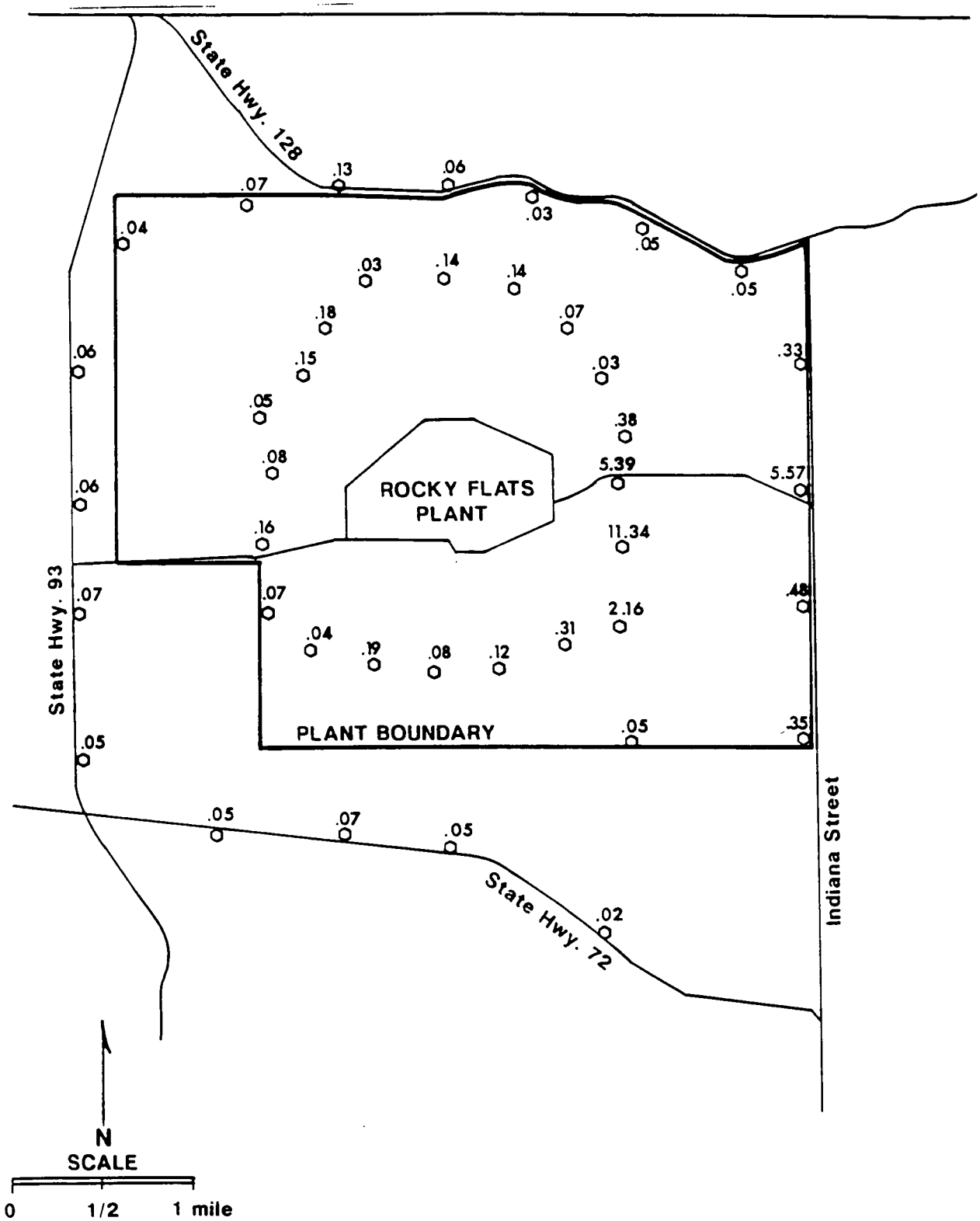


FIGURE 5-4
AVERAGE PLUTONIUM CONCENTRATIONS IN SOIL, 1984-1987
(values in picoCuries per gram)

The CDH sampling protocol requires 25 subsamples to be composited within a 10-acre area to compose a soil sample. The 10-acre grids will be located as indicated on Figure 5-5. Grids will not be contiguous except near the 903 Pad. Lines of grids will be placed to define the southern and northern extent of contamination. Other grids will be used to confirm values from within the areas of concern. The northwest corner of each grid will be located by survey and identified with an appropriately marked steel post. Grids will be oriented on the cardinal compass directions. The 25 subsamples will be located with a handheld compass and tape measure using the northwest corner as the starting point.

In order to assess the vertical distribution of plutonium 239 + 240 and americium 241 in the soil profile, subsurface sampling will also be done at the locations shown on Figure 5-5. The 24 subsurface soil sampling locations will be placed at the center of the 10 acre plots to facilitate comparison of the data. Backhoe pits will be excavated at each of the indicated locations to a depth of one meter. A 1/8 inch surface scrape, 1/8 inch to 1 cm deep sample, and 1 cm to 5 cm deep sample will be taken. Samples will then be collected each 5 to 10 cm. Samples will be collected from the face of the pit, with all samples being collected within 50 cm of each other horizontally. The samples will be collected from the bottom upward to the surface and equipment will be decontaminated between collection of each sample.

5.2 STEP TWO - SOURCE CHARACTERIZATION

Step Two of the Phase II RFI/RI will focus on characterization of source areas (SWMUs) within Operable Unit No. 2. Boreholes will be drilled into SWMUs where access is feasible to characterize any waste materials remaining in place and to assess the maximum contaminant concentrations in soils directly beneath the sites. In addition, ground-water monitoring wells will be installed adjacent to some of the boreholes to characterize ground-water quality directly beneath the sites. This section discusses those wells and boreholes which will be drilled for source characterization. Wells to be drilled outside of SWMUs for characterizing the extent of contamination are discussed in Section 5.1. Table 5-6 provides an overview of all proposed Phase II RFI/RI source characterization boreholes and wells which are shown on Figure 5-1. All drilling, sampling, and well installation will follow the Rocky Flats Plant ER Program SOP.

TABLE 5-6

PROPOSED PHASE II WELLS AND BOREHOLES
FOR SOURCE CHARACTERIZATION

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
69-90/BH0190	Characterization upgradient (west) of 903 Pad.	15	5-15
70-90/BH0290	Ground-water quality beneath 903 Pad. Source characterization 903 Pad.	15	5-15
BH0390	Source characterization 903 Pad	N/A	N/A
71-90/BH0490	Ground-water quality beneath 903 Pad. Source characterization 903 Pad.	15	5-15
72-90/BH0590	Ground-water quality downgradient (south) of 903 Pad. Soil characterization adjacent to 903 Pad.	15	5-15
73-90/BH0690	Ground-water quality downgradient (north) of 903 Pad. Soil characterization adjacent to 903 Pad.	20	5-20
BH0790	Source characterization 903 Pad	N/A	N/A
74-90/BH0890	Ground-water quality beneath 903 Pad. Source characterization 903 Pad.	20	5-20
BH0990	Source characterization 903 Pad	N/A	N/A
BH1090	Source characterization 903 Pad	N/A	N/A
75-90/BH1190	Ground-water quality downgradient (east) of 903 Pad. Soil characterization adjacent to 903 Pad.	20	5-20
76-90/BH1290	Ground-water quality downgradient (east) of 903 Pad. Soil characterization adjacent to 903 Pad.	20	5-20
77-90/BH1390	Ground-water quality downgradient (south) of 903 Pad. Soil characterization adjacent to 903 Pad.	20	5-20
78-90/BH1490	Ground-water quality beneath Trench T-2. Source characterization Trench T-2.	10	5-10
BH1590	Source characterization Trench T-2. Extent of soil contamination.	N/A	N/A
79-90/BH1690	Ground-water quality downgradient (south) of 903 Pad and upgradient of Trench T-2 (north) to differentiate between sources.	10	5-10
BH1790	Source characterization Trench T-2. Extent of soil contamination.	N/A	N/A

TABLE 5-6
(continued)

PROPOSED PHASE II ALLUVIAL WELLS AND BOREHOLES
FOR SOURCE CHARACTERIZATION

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
BH1890	Source characterization Trench T-2. Extent of soil contamination.	N/A	N/A
80-90/BH1990	Ground-water quality downgradient south of Trench T-2. Extent of soil contamination.	10	5-10
81-90/BH2090	Source characterization Reactive Metal Destruction Site.	N/A	N/A
82-90/BH2190	Ground-water quality downgradient (south) of Reactive Metal Destruction Site.	10	5-10
83-90/BH2290	Source characterization Reactive Metal Destruction Site.	N/A	N/A
84-90/BH2390	Ground-water quality downgradient of Reactive Metal Destruction Site. Extent of soil contamination.	10	5-10
85-90/BH2490	Ground-water quality downgradient of 903 and Reactive Metal Destruction Site. Extent of soil contamination.	10	5-10
86-90/BH2590	Ground-water quality beneath Mound Site. Source characterization.	25	5-25
87-90/BH2690	Ground-water quality beneath Mound Site. Source characterization.	25	5-25
BH2790	Extent of soil contamination Mound Site.	N/A	N/A
BH2890	Investigation possible Pallet Burn Site location.	N/A	N/A
88-90/BH2990	Ground-water quality beneath Trench T-3. Source characterization.	20	10-20
89-90/BH3090	Ground-water quality beneath Trench T-4. Source characterization.	20	10-20
90-90/BH3190	Ground-water quality beneath Trench T-4. Source characterization.	25	10-25
91-90/BH3290	Ground-water quality beneath Trench T-11. Source characterization.	25	10-25
92-90/BH3390	Ground-water quality beneath Trench T-11. Source characterization.	25	10-25

TABLE 5-6
(continued)

PROPOSED PHASE II ALLUVIAL WELLS AND BOREHOLES
FOR SOURCE CHARACTERIZATION

WELL OR BOREHOLE NO.	PURPOSE	ANTICIPATED MONITOR WELL TOTAL DEPTH (ft. below g.s)	ANTICIPATED SCREENED INTERVAL
93-90/BH3490	Ground-water quality beneath Trench T-9. Source characterization.	40	10-40
94-90/BH3590	Ground-water quality beneath Trench T-5. Source characterization.	40	10-40
95-90/BH3690	Ground-water quality beneath Trench T-5. Source characterization.	40	10-40
96-90/BH3790	Ground-water quality beneath Trench T-6. Source characterization.	40	10-40
97-90/BH3890	Ground-water quality beneath Trench T-7. Source characterization.	40	10-40
98-90/BH3990	Ground-water quality beneath Trench T-7. Source characterization.	40	10-40
99-90/BH4090	Ground-water quality beneath Trench T-8. Source characterization.	40	10-40
100-90/BH4190	Ground-water quality beneath Trench T-8. Source characterization.	40	10-40
101-90/BH4290	Ground-water quality beneath the East Spray Field. Source characterization.	40	5-40
102-90/BH4390	Ground-water quality beneath the East Spray Field. Source characterization.	45	5-45
103-90/BH4490	Ground-water quality beneath the East Spray Field. Source characterization.	40	5-40
104-90/BH4590	Ground-water quality beneath the East Spray Field. Source characterization.	40	5-40

Boreholes to be drilled into SWMUs will extend from the ground surface to the base of weathered bedrock. Continuous samples will be collected for geologic descriptions for the entire borehole depth. From this core, discrete samples will be submitted for laboratory chemical analyses every two feet from the ground surface to the water table. In addition, a discrete sample will be collected for chemical analysis at the water table. Core from saturated surficial materials will not be submitted to the laboratory, as the presence of waterin this zone will affect interpretation of chemical results. In order to prevent alluvial ground water from affecting weathered bedrock samples, surface casing will be grouted into the borehole through surficial materials. Subsequent to grout hardening, the borehole will then be advanced through weathered bedrock with continuous sampling. Discrete samples from the core will be submitted to the laboratory for chemical analysis from two feet immediately below the casing and every four feet thereafter to the base of weathering. To further characterize bedrock immediately beneath the sites, in-situ packer tests will be performed in the weathered bedrock where drilling conditions allow.

Alluvial and bedrock ground-water monitoring wells will also be installed to characterize ground-water quality directly beneath SWMUs. Wells will be drilled, sampled, and completed in accordance with the Rocky Flats ER Program SOP. The screened interval of all alluvial and bedrock monitor wells will extend across the entire saturated thickness, unless that interval is greater than ten feet. If the saturated thickness is ten feet or less, a single well will be installed, and the screened interval will extend from five feet above the water table to the base of the water bearing zone. Two wells will be installed if the saturated thickness is greater than ten feet and less than 30 feet. One of the two wells will be completed at the water table as described above, and a second well will be completed across the lower part of the water bearing unit. If a saturated thickness greater than 30 feet is encountered, a third well will be completed at the base of the water bearing unit. Source characterization alluvial well locations are discussed in the following sections.

5.2.1 Borehole Locations

5.2.1.1 903 Pad Area

SWMUs of the 903 Pad Area are shown in Figure 1-5. Specific source sampling activities for sites within the 903 Pad Area are discussed below.

903 Drum Storage Site (SWMU Ref. No. 112)

In order to characterize the vertical and horizontal extent of radionuclide and solvent contamination beneath the 903 Pad, 13 boreholes (BH0190 through BH1390) are proposed within and immediately adjacent to the site. These boreholes have been located in areas which contained drums as well as in areas which historically did not contain drums (Figure 5-6).

In order to characterize the ground water beneath and adjacent to the 903 Pad, alluvial monitoring wells 69-90 through 77-90 will be installed adjacent to boreholes BH0190, BH0290, BH0490, BH0590, BH0690, BH0890, BH1190, BH1290, and BH1390, respectively.

903 Lip Site (SWMU Ref. No. 155)

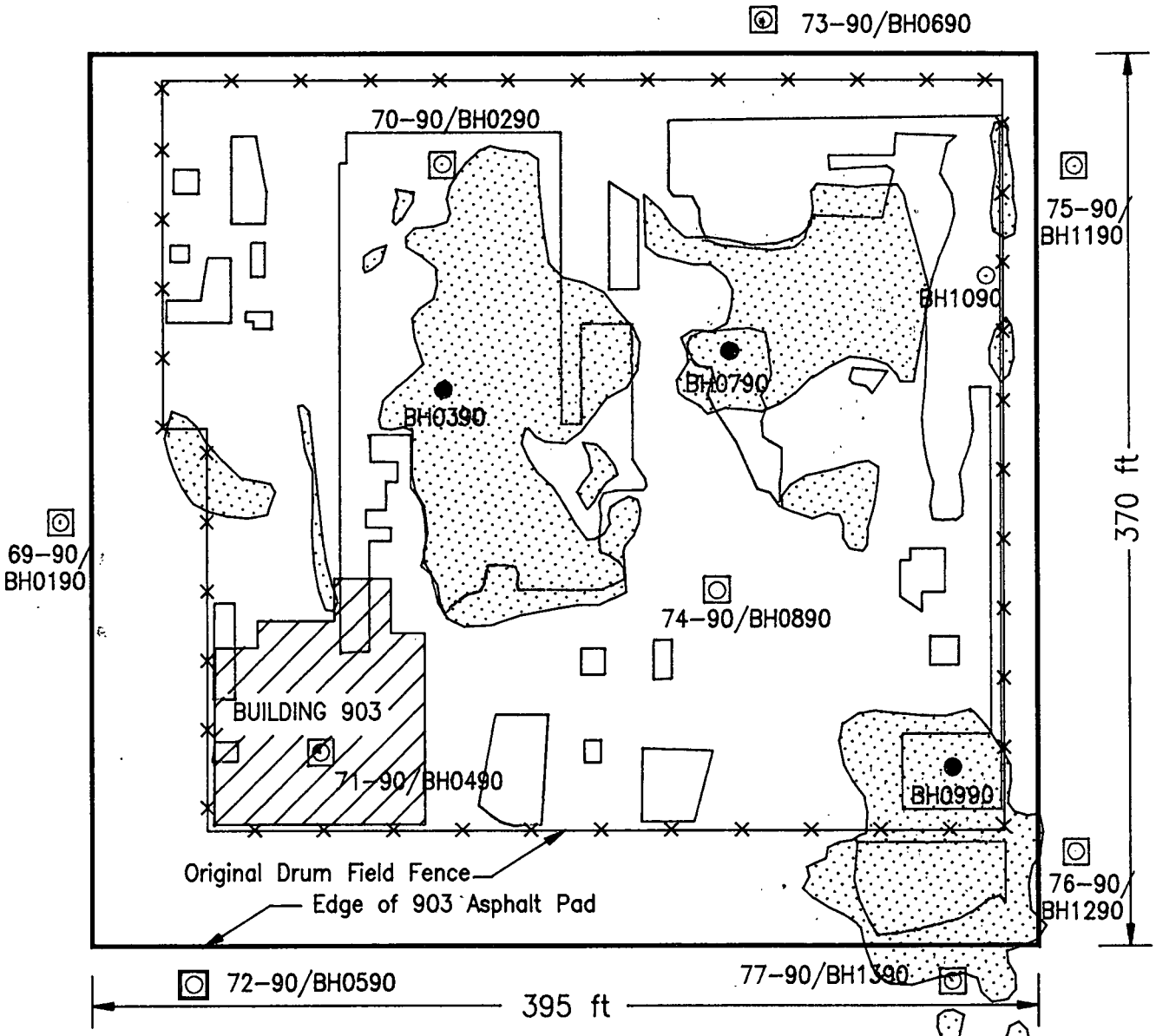
Boreholes will not be drilled specifically for source characterization of the 903 Lip Site, as surficial radionuclides are the contaminants of concern. Therefore, surficial soil sampling and radionuclide analyses will be performed in the area. This sampling is discussed in Section 5.1.3.

Trench T-2 Site (SWMU Ref. No. 109)

One alluvial well/borehole pair (78-90/BH1490) will be drilled through the east end of Trench T-2 to characterize the contents and dimensions of the site (Figure 5-1). Barrels are known to be present at the west

FIGURE 5-6

PROPOSED BOREHOLE AND MONITOR WELL LOCATIONS FOR THE 903 PAD DRUM STORAGE SITE



EXPLANATION

- ⊙ PROPOSED BOREHOLE LOCATION
- ☐ PROPOSED MONITOR WELL
- AREAS OF DRUM STORAGE-MAY 1963, THROUGH SEPTEMBER 1968. BASED ON AERIAL PHOTOGRAPHS FROM: 5/5/63, 4/29/65, 4/29/67, 9/10/68.
- AREA OF SOIL STAINING BASED ON AERIAL PHOTOGRAPHS FROM: 4/29/67, 4/10/68, 5/24/69.

NOTE: BUILDING 903 LOCATION BASED ON AERIAL PHOTOGRAPHS FROM 4/10/68.

R33007.PJ-040990

end of the trench, so no borehole will be drilled in this area. Well 78-90 will be completed as a colluvial monitoring well in order to sample ground water directly beneath this site.

In addition to well/borehole 78-90/BH1490, boreholes BH1590, BH1690, BH1790, BH1890, and BH1990 will be drilled around Trench T-2 to verify its location and to evaluate the extent of soil contamination in the area. Colluvial monitoring wells 79-90 and 80-90 will be installed adjacent to boreholes BH1690 and BH1990, respectively, to monitor water quality upgradient and downgradient of Trench T-2.

Reactive Metal Destruction Site (SWMU Ref. No. 140)

Three boreholes (BH2089, BH2190, and BH2290) will be drilled within the Reactive Metal Destruction Site to further characterize this source and the extent of soil contamination. Boreholes BH2390 and BH2490, downgradient of the site, will be drilled and sampled to evaluate the extent of soil contamination in the area. Colluvial monitoring wells 81-90 through 85-90 will be completed adjacent to boreholes BH2090 through BH2490, respectively, to monitor water quality within and downgradient of the site (Figure 5-1).

5.2.1.2 Mound Area

SWMUs within the Mound Area are identified on Figure 1-5. Proposed well and borehole locations are shown on Figure 5-1 and summarized in Table 5-6. Details of source characterization activities planned for sites within the Mound Area are provided below.

Mound Site (SWMU Ref. No. 113)

Boreholes BH2590 and BH2690, are proposed within the revised boundaries of the Mound Site to characterize soils and any remaining wastes. Alluvial monitoring wells 86-90 and 87-90 will be completed adjacent to boreholes BH2590 and BH2690, respectively, to monitor ground-water quality beneath the site. In addition, borehole BH2790 will be drilled and sampled downgradient of the Mound Site adjacent to existing

wells 1-74 and 19-87. This hole will serve to characterize the nature and extent of soil contamination possibly associated with the high levels of PCE and TCE detected in well 1-74.

Trench T-1 Site (SWMU Ref. No. 108)

No boreholes are proposed within Trench T-1 because of the ubiquitous presence of barrels. However, additional alluvial ground-water monitoring wells are proposed adjacent to the trench in Section 5.1.1.1.

Oil Burn Pit No. 2 Site (SWMU Ref. No. 153

This site was removed in the 1970's and its location is currently covered by the PSZ fence which is inaccessible for security purposes. Therefore, no additional boreholes are proposed for source characterization of this site. Additional monitor wells upgradient and downgradient of the Oil Burn Pit Site are discussed in Section 5.1.1.1.

Pallet Burn Site (SWMU Ref. No. 154)

The westernmost of the two possible locations for this site is located within the PSZ fence. As this area is inaccessible and boreholes were drilled adjacent to this site during the Phase I RI, no additional boreholes are proposed. However, an additional borehole (BH2890) will be drilled in the possible eastern location of the Pallet Burn Site identified from historical aerial photographs. This borehole will aid in verifying the location of SWMU 154.

5.2.1.3 East Trenches Area

Trenches T-3 Through T-11 (SWMU Ref. Nos. 110, 111.1 through 111.8)

As shown in Figure 1-5, SWMUs within the East Trenches are closely spaced and portions of the trenches are occupied by barrels. Location of boreholes and monitoring wells are presented in Figure 5-1 and summarized on Table 5-6.

The boreholes proposed within the East Trenches are located in portions of the trenches devoid of barrels. Boreholes within the trenches will provide not only waste and source characterization but also details on the construction of the trenches. Alluvial monitoring wells will be completed adjacent to all of the boreholes. These sampling locations are discussed below.

Five boreholes will be drilled through the northern trenches in areas not containing barrels. Borehole BH2990 will be drilled through the western end of Trench T-3 which is devoid of barrels, and boreholes BH3090 and BH3190 will be drilled through Trench T-4. Boreholes BH3290 and BH3390 will be drilled at the ends of Trench T-11 outside of the area containing barrels. Trench T-10 is filled with barrels; therefore, no boreholes will be drilled into this SWMU. Alluvial monitoring wells will be completed adjacent to all of the source characterization boreholes in the northern trenches (wells 88-90 through 92-90).

Nine boreholes (BH3490 through BH4190) will be drilled and sampled in portions of the southern trenches devoid of barrels (Table 5-6). All of these boreholes will have alluvial monitoring wells (93-90 through 100-90) completed adjacent to them to characterize alluvial ground-water quality immediately beneath the sites.

East Spray Field (SWMU Ref. Nos. 216.2 and 216.3)

Four boreholes, BH4290 through BH4590, are proposed within the boundaries of the East Spray Field to characterize soils. Alluvial monitoring wells (wells 101-90 through 104-90) will be completed adjacent to all of the source characterization boreholes.

5.2.2 Analysis of Borehole Samples

Soil samples will be collected from boreholes within and adjacent to SWMUs to characterize sources. All samples will be analyzed for the chemical parameters listed in Table 5-5 following CLP or the methods specified in the QA/QC plan. These parameters are essentially the same as those analyzed in the Phase I RI except that oil and grease and RCRA characteristics are eliminated. Oil and grease have not proven useful in determining extent of soil contamination, and RCRA hazardous waste characteristics have been within acceptable limits. The TCL list for organics and the TAL list for inorganics are nearly the same as the previously used HSL list for organics and inorganics. The physical properties of on-site geologic materials will also be characterized to support the evaluation of remedial action alternatives. Bulk samples will be collected from continuous core of alluvial wells to characterize each of the materials found within the 903 Pad, Mound and East Trenches Areas. (Rocky Flats Alluvium, colluvium, valley fill alluvium, and weathered bedrock). Specifically, five samples of each material type will be submitted for grain size analyses (sieve and hydrometer analyses), Atterberg limits testing, and recompacted permeability testing to evaluate the variability of these parameters across the site.

5.2.3 Surficial Soil Samples

Soil samples for plutonium 239 + 240 and americium 241 will be collected from 57 10-acre plots near the 903 Pad, Mound, and East Trenches Areas and in the buffer zone to Indiana Street following the CDH sampling protocol. In addition, vertical profiles of plutonium and americium will be developed at 24 sites in the same general area (Section 5.2.1.1). Samples will be collected every 5 to 10 cm to a depth of one meter in order to evaluate the vertical distribution of plutonium and americium.

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APPENDIX A

OPERABLE UNIT NO. 2

SOIL SAMPLING RESULTS

APPENDIX A-1

VOLATILE ORGANIC COMPOUNDS

SOIL SAMPLING RESULTS

Operable Unit No. 2

Volatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH2287	07/09/87	0.00 - 9.30	50U	50U	50U	50U	25U	48JB	25U	25U
BH2287	07/09/87	0.00 - 9.30	50U	50U	50U	50U	25U	56B	25U	25U
BH2287	07/09/87	9.70 - 10.60	50U	50U	50U	50U	25U	65B	25U	25U
BH2287	07/09/87	10.60 - 18.40	50U	50U	50U	50U	25U	66B	25U	25U
BH2387	07/07/87	0.00 - 7.50	50U	50U	50U	50U	6J	110B	25U	25U
BH2387	07/07/87	0.00 - 7.50	50U	50U	50U	50U	5J	120B	25U	25U
BH2987	06/12/87	0.00 - 10.00	50U	50U	50U	50U	9 J	53 B	25U	25U
BH2987	06/12/87	9.70 - 12.70	50U	50U	50U	50U	11 J	430 B	25U	25U
BH3087	06/16/87	0.00 - 9.00	10 U	10 U	10 U	10 U	31.6 B	124.2 B	5 U	5 U
BH3087	06/16/87	9.00 - 10.35	50U	50U	50U	50U	12 J	230 B	25U	25U
BH3087	06/16/87	11.50 - 17.15	50U	50U	50U	50U	13 J	220 B	25U	25U
BH3087	06/16/87	20.00 - 20.80	50U	50U	50U	50U	7 J	180 B	25U	25U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	10 U	10 U	10 U	10 U	46.9 B	43.1 B	5 U	5 U
BH2487	07/08/87	2.43 - 4.85	50U	50U	50U	50U	6J	30JB	25U	25U
BH2587	06/18/87	0.00 - 9.00	50U	50U	50U	50U	19 J	110 B	25U	25U
BH2587	06/18/87	0.00 - 9.00	50U	50U	50U	7 J	15 J	44 J	25U	25U
BH2587	06/18/87	8.40 - 8.85	50U	50U	50U	50U	12 J	340	25U	25U
BH2587	06/18/87	9.50 - 10.40	50U	50U	50U	50U	9 JB	70 B	25U	25U
BH2587	06/18/87	14.50 - 15.70	500U	500U	500U	500U	250U	1100 B	250U	250U
BH2687	07/16/87	0.30 - 2:50	12 U	12 U	12 U	12 U	20 B	23	6 U	6 U
BH2687	07/16/87	2.15 - 2.95	12 U	12 U	12 U	12 U	18 B	14 B	6 U	6 U
BH2787	07/06/87	0.00 - 4.80	50U	50U	50U	50U	7J	140B	25U	25U
BH2787	07/06/87	4.80 - 10.00	50U	50U	50U	50U	5J	140B	25U	25U
BH2887	07/13/87	0.00 - 0.90	50U	50U	50U	50U	25U	50U	25U	25U
BH2887	07/13/87	0.90 - 3.75	50U	50U	50U	50U	25U	50U	25U	25U
BH2887	07/13/87	3.75 - 4.85	50U	50U	50U	50U	12J	58B	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Volatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH2287	07/09/87	0.00 - 9.30	25U	NR	25U	25U	50U	25U	25U	50U
BH2287	07/09/87	0.00 - 9.30	25U	NR	25U	25U	50U	25U	25U	50U
BH2287	07/09/87	9.70 - 10.60	25U	NR	25U	25U	50U	25U	25U	50U
BH2287	07/09/87	10.60 - 18.40	25U	NR	25U	25U	50U	25U	25U	50U
BH2387	07/07/87	0.00 - 7.50	25U	NR	25U	25U	50U	25U	25U	50U
BH2387	07/07/87	0.00 - 7.50	25U	NR	25U	25U	50U	25U	25U	50U
BH2987	06/12/87	0.00 - 10.00	25U	NR	25U	25U	50U	25U	25U	50U
BH2987	06/12/87	9.70 - 12.70	25U	NR	25U	25U	50U	25U	25U	50U
BH3087	06/16/87	0.00 - 9.00	5 U	NR	5 U	5 U	10 U	5 U	5 U	10 U
BH3087	06/16/87	9.00 - 10.35	25U	NR	25U	25U	19 J	25U	25U	50U
BH3087	06/16/87	11.50 - 17.15	25U	NR	25U	25U	33 J	25U	25U	50U
BH3087	06/16/87	20.00 - 20.80	25U	NR	25U	25U	9 J	25U	25U	50U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	5 U	NR	5 U	5 U	10 U	5 U	5 U	10 U
BH2487	07/08/87	2.43 - 4.85	25U	NR	25U	25U	50U	25U	25U	50U
BH2587	06/18/87	0.00 - 9.00	25U	NR	25U	25U	50U	25U	25U	50U
BH2587	06/18/87	0.00 - 9.00	25U	NR	25U	25U	50U	25U	25U	50U
BH2587	06/18/87	8.40 - 8.85	25U	NR	25U	25U	16 J	25U	25U	50U
BH2587	06/18/87	9.50 - 10.40	25U	NR	25U	25U	6 J	25U	25U	50U
BH2587	06/18/87	14.50 - 15.70	250U	NR	250U	250U	210 J	250U	250U	500U
BH2687	07/16/87	0.30 - 2.50	6 U	NR	6 U	6 U	12 U	6 U	6 U	12 U
BH2687	07/16/87	2.15 - 2.95	6 U	NR	6 U	NR	12 U	6 U	6 U	12 U
BH2787	07/06/87	0.00 - 4.80	25U	NR	25U	25U	50U	25U	25U	50U
BH2787	07/06/87	4.80 - 10.00	25U	NR	25U	25U	50U	25U	25U	50U
BH2887	07/13/87	0.00 - 0.90	25U	NR	25U	25U	50U	25U	25U	50U
BH2887	07/13/87	0.90 - 3.75	25U	NR	25U	25U	50U	25U	25U	50U
BH2887	07/13/87	3.75 - 4.85	25U	NR	8J	25U	50U	25U	50	50U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Volatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH2287	07/09/87	0.00 - 9.30	25U	25U	25U	25U	25U	25U	25U	25U
BH2287	07/09/87	0.00 - 9.30	25U	25U	25U	25U	25U	25U	25U	25U
BH2287	07/09/87	9.70 - 10.60	25U	25U	25U	25U	25U	25U	25U	25U
BH2287	07/09/87	10.60 - 18.40	25U	25U	25U	25U	25U	25U	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	25U	25U	25U	25U	25U	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	25U	25U	25U	25U	25U	25U	25U
BH2987	06/12/87	0.00 - 10.00	25U	25U	25U	25U	25U	25U	25U	25U
BH2987	06/12/87	9.70 - 12.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3087	06/16/87	0.00 - 9.00	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BH3087	06/16/87	9.00 - 10.35	25U	25U	25U	25U	25U	25U	25U	25U
BH3087	06/16/87	11.50 - 17.15	25U	25U	25U	25U	25U	25U	25U	25U
BH3087	06/16/87	20.00 - 20.80	25U	25U	25U	25U	25U	25U	25U	25U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BH2487	07/08/87	2.43 - 4.85	25U	25U	25U	25U	25U	25U	25U	25U
BH2587	06/18/87	0.00 - 9.00	25U	25U	25U	97	25U	25U	25U	25U
BH2587	06/18/87	0.00 - 9.00	25U	25U	25U	100	25U	25U	25U	25U
BH2587	06/18/87	8.40 - 8.85	25U	25U	25U	93	25U	25U	25U	25U
BH2587	06/18/87	9.50 - 10.40	25U	25U	25U	51	25U	25U	25U	25U
BH2587	06/18/87	14.50 - 15.70	250U	250U	250U	7000	250U	250U	250U	250U
BH2687	07/16/87	0.30 - 2.50	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BH2687	07/16/87	2.15 - 2.95	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BH2787	07/06/87	0.00 - 4.80	25U	25U	25U	25U	25U	25U	25U	25U
BH2787	07/06/87	4.80 - 10.00	25U	25U	25U	25U	25U	25U	25U	25U
BH2887	07/13/87	0.00 - 0.90	25U	25U	25U	25U	25U	25U	25U	25U
BH2887	07/13/87	0.90 - 3.75	25U	25U	25U	25U	25U	25U	25U	25U
BH2887	07/13/87	3.75 - 4.85	25U	25U	25U	6J	25U	25U	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH2287	07/09/87	0.00 - 9.30	25U	50U	50U	25U	25U	25U	25U	25U
BH2287	07/09/87	0.00 - 9.30	25U	50U	50U	25U	25U	25U	25U	25U
BH2287	07/09/87	9.70 - 10.60	25U	50U	50U	25U	25U	25U	25U	25U
BH2287	07/09/87	10.60 - 18.40	25U	50U	50U	25U	25U	25U	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	50U	50U	25U	25U	25U	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	50U	50U	25U	25U	25U	25U	25U
BH2987	06/12/87	0.00 - 10.00	25U	50U	50U	25U	25U	25U	25U	25U
BH2987	06/12/87	9.70 - 12.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3087	06/16/87	0.00 - 9.00	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
BH3087	06/16/87	9.00 - 10.35	25U	50U	50U	25U	25U	25U	25U	25U
BH3087	06/16/87	11.50 - 17.15	25U	50U	50U	25U	25U	25U	25U	25U
BH3087	06/16/87	20.00 - 20.80	25U	50U	50U	25U	25U	25U	25U	25U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	5 U	10 U	10 U	5 U	5 U	1.7 B	5 U	5 U
BH2487	07/08/87	2.43 - 4.85	25U	50U	50U	25U	25U	25U	25U	25U
BH2587	06/18/87	0.00 - 9.00	25U	50U	50U	130	25U	6 J	25U	11 J
BH2587	06/18/87	0.00 - 9.00	25U	50U	50U	8 J	25U	25U	25U	25U
BH2587	06/18/87	8.40 - 8.85	25U	50U	50U	25U	25U	25U	25U	25U
BH2587	06/18/87	9.50 - 10.40	25U	50U	50U	28	25U	8 J	25U	25U
BH2587	06/18/87	14.50 - 15.70	250U	500U	500U	10000	250U	640	250U	780
BH2687	07/16/87	0.30 - 2.50	6 U	12 U	12 U	6 U	6 U	6 U	6 U	6 U
BH2687	07/16/87	2.15 - 2.95	6 U	12 U	12 U	6 U	6 U	6 U	6 U	6 U
BH2787	07/06/87	0.00 - 4.80	25U	50U	50U	25U	25U	25U	25U	25U
BH2787	07/06/87	4.80 - 10.00	25U	50U	50U	25U	25U	25U	25U	25U
BH2887	07/13/87	0.00 - 0.90	25U	50U	50U	25U	25U	25U	25U	25U
BH2887	07/13/87	0.90 - 3.75	25U	50U	50U	25U	25U	25U	25U	25U
BH2887	07/13/87	3.75 - 4.85	25U	50U	50U	84	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH2287	07/09/87	0.00 - 9.30	25U	25U
BH2287	07/09/87	0.00 - 9.30	25U	25U
BH2287	07/09/87	9.70 - 10.60	25U	25U
BH2287	07/09/87	10.60 - 18.40	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	25U
BH2387	07/07/87	0.00 - 7.50	25U	25U
BH2987	06/12/87	0.00 - 10.00	25U	25U
BH2987	06/12/87	9.70 - 12.70	25U	25U
BH3087	06/16/87	0.00 - 9.00	5 U	5 U
BH3087	06/16/87	9.00 - 10.35	25U	25U
BH3087	06/16/87	11.50 - 17.15	17 J	25U
BH3087	06/16/87	20.00 - 20.80	25U	25U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	5 U	5 U
BH2487	07/08/87	2.43 - 4.85	25U	25U
BH2587	06/18/87	0.00 - 9.00	25U	60
BH2587	06/18/87	0.00 - 9.00	25U	25U
BH2587	06/18/87	8.40 - 8.85	25U	25U
BH2587	06/18/87	9.50 - 10.40	25U	25U
BH2587	06/18/87	14.50 - 15.70	250U	3300
BH2687	07/16/87	0.30 - 2.50	6 U	6 U
BH2687	07/16/87	2.15 - 2.95	6 U	6 U
BH2787	07/06/87	0.00 - 4.80	25U	25U
BH2787	07/06/87	4.80 - 10.00	25U	25U
BH2887	07/13/87	0.00 - 0.90	25U	25U
BH2887	07/13/87	0.90 - 3.75	25U	25U
BH2887	07/13/87	3.75 - 4.85	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Volatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH2887	07/13/87	4.85 - 5.90	50U	50U	50U	50U	12J	70B	25U	25U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	50U	50U	50U	50U	10 J	170 B	25U	25U
BH2987	06/12/87	17.50 - 18.50	50U	50U	50U	50U	10 J	430 B	25U	25U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	50U	50U	50U	50U	8J	78B	25U	25U
BH2287	07/09/87	22.20 - 23.35	50U	50U	50U	50U	9J	73B	25U	25U
BH2387	07/07/87	7.20 - 8.20	50U	50U	50U	50U	9J	140B	25U	25U
BH2387	07/07/87	11.20 - 11.85	50U	50U	50U	50U	5J	150B	25U	25U
BH2487	07/08/87	8.00 - 8.30	50U	50U	50U	50U	7J	55B	25U	25U
BH2487	07/08/87	8.30 - 8.90	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	10.00 - 10.90	10 U	10 U	10 U	10 U	19 B	60 B	5 U	5 U
BH2587	06/18/87	18.50 - 19.30	50U	50U	50U	50 J	150 JB	760 B	25U	25U
BH2587	06/18/87	19.70 - 20.50	500U	500U	500U	500U	59 J	1100 B	250U	250U
BH2687	07/16/87	6.00 - 6.90	50U	50U	50U	50U	8J	120	25U	25U
BH2787	07/06/87	13.00 - 14.40	50U	50U	50U	50U	6J	170B	25U	25U
BH2887	07/13/87	8.80 - 9.00	50U	50U	50U	50U	25U	11JB	58	25U
BH2887	07/13/87	11.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3087	06/16/87	24.50 - 25.20	50U	50U	50U	50U	9 J	200 B	25U	25U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	50U	50U	50U	50U	17J	89	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH2887	07/13/87	4.85 - 5.90	25U	NR	17J	25U	50U	25U	100	50U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	25U	NR	25U	25U	50U	5 J	25U	50U
BH2987	06/12/87	17.50 - 18.50	25U	NR	25U	25U	50U	25U	25U	50U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	25U	NR	25U	25U	50U	25U	25U	50U
BH2287	07/09/87	22.20 - 23.35	25U	NR	25U	25U	50U	25U	25U	50U
BH2387	07/07/87	7.20 - 8.20	25U	NR	25U	25U	58	25U	25U	50U
BH2387	07/07/87	11.20 - 11.85	25U	NR	25U	25U	50U	25U	25U	50U
BH2487	07/08/87	8.00 - 8.30	25U	NR	25U	25U	50U	25U	25U	50U
BH2487	07/08/87	8.30 - 8.90	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	10.00 - 10.90	5 U	NR	5 U	5 U	10 U	5 U	5 U	10 U
BH2587	06/18/87	18.50 - 19.30	25U	NR	130 J	25U	50U	75 J	25U	50U
BH2587	06/18/87	19.70 - 20.50	250U	NR	250U	250U	150 J	180 J	250U	500U
BH2687	07/16/87	6.00 - 6.90	25U	NR	25U	25U	50U	25U	25U	50U
BH2787	07/06/87	13.00 - 14.40	25U	NR	25U	25U	50U	25U	25U	50U
BH2887	07/13/87	8.80 - 9.00	25U	NR	25U	25U	50U	25U	29	50U
BH2887	07/13/87	11.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3087	06/16/87	24.50 - 25.20	25U	NR	25U	25U	16 J	25U	25U	50U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	25U	NR	25U	6J	50U	25U	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH2887	07/13/87	4.85 - 5.90	25U	25U	25U	15J	25U	25U	25U	25U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	25U	25U	25U	25U	25U	25U	25U	25U
BH2987	06/12/87	17.50 - 18.50	25U	25U	25U	25U	25U	25U	25U	25U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	25U	25U	25U	25U	25U	25U	25U	25U
BH2287	07/09/87	22.20 - 23.35	25U	25U	25U	25U	25U	25U	25U	25U
BH2387	07/07/87	7.20 - 8.20	25U	25U	25U	25U	25U	25U	25U	25U
BH2387	07/07/87	11.20 - 11.85	25U	25U	25U	25U	25U	25U	25U	25U
BH2487	07/08/87	8.00 - 8.30	25U	25U	25U	25U	25U	25U	25U	25U
BH2487	07/08/87	8.30 - 8.90	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	10.00 - 10.90	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BH2587	06/18/87	18.50 - 19.30	25U	25U	25U	16000	25U	25U	25U	25U
BH2587	06/18/87	19.70 - 20.50	250U	250U	250U	13000	250U	250U	250U	250U
BH2687	07/16/87	6.00 - 6.90	25U	25U	25U	25U	25U	25U	25U	25U
BH2787	07/06/87	13.00 - 14.40	25U	25U	25U	25U	25U	25U	25U	25U
BH2887	07/13/87	8.80 - 9.00	25U	25U	6J	5J	25U	25U	25U	25U
BH2887	07/13/87	11.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3087	06/16/87	24.50 - 25.20	25U	25U	25U	25U	25U	25U	25U	25U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH2887	07/13/87	4.85 - 5.90	25U	50U	50U	210	25U	25U	25U	25U

903-Pad Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH2987	06/12/87	15.70 - 16.80	25U	50U	50U	25U	25U	25U	25U	25U
BH2987	06/12/87	17.50 - 18.50	25U	50U	50U	25U	25U	25U	25U	25U

903-Pad Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH2287	07/09/87	18.40 - 20.60	25U	50U	50U	25U	25U	25U	25U	25U
BH2287	07/09/87	22.20 - 23.35	25U	50U	50U	25U	25U	25U	25U	25U
BH2387	07/07/87	7.20 - 8.20	25U	50U	50U	25U	25U	25U	25U	25U
BH2387	07/07/87	11.20 - 11.85	25U	50U	50U	25U	25U	25U	25U	25U
BH2487	07/08/87	8.00 - 8.30	25U	50U	50U	25U	25U	25U	25U	25U
BH2487	07/08/87	8.30 - 8.90	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	10.00 - 10.90	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
BH2587	06/18/87	18.50 - 19.30	25U	120 J	50U	3800	25U	330	25U	290
BH2587	06/18/87	19.70 - 20.50	250U	500U	500U	2100	250U	300	250U	250U
BH2687	07/16/87	6.00 - 6.90	25U	50U	50U	25U	25U	25U	25U	25U
BH2787	07/06/87	13.00 - 14.40	25U	50U	50U	25U	25U	25U	25U	25U
BH2887	07/13/87	8.80 - 9.00	25U	50U	50U	14J	25U	25U	25U	25U
BH2887	07/13/87	11.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3087	06/16/87	24.50 - 25.20	25U	50U	50U	25U	25U	25U	25U	25U

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH3187	08/04/87	0.00 - 11.70	25U	50U	50U	16J	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH2887	07/13/87	4.85 - 5.90	25U	25U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	25U	25U
BH2987	06/12/87	17.50 - 18.50	25U	25U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	25U	25U
BH2287	07/09/87	22.20 - 23.35	25U	25U
BH2387	07/07/87	7.20 - 8.20	25U	25U
BH2387	07/07/87	11.20 - 11.85	25U	25U
BH2487	07/08/87	8.00 - 8.30	25U	25U
BH2487	07/08/87	8.30 - 8.90	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH2487	07/08/87	10.00 - 10.90	5 U	5 U
BH2587	06/18/87	18.50 - 19.30	25U	480
BH2587	06/18/87	19.70 - 20.50	250U	250U
BH2687	07/16/87	6.00 - 6.90	25U	25U
BH2787	07/06/87	13.00 - 14.40	25U	25U
BH2887	07/13/87	8.80 - 9.00	25U	25U
BH2887	07/13/87	11.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH3087	06/16/87	24.50 - 25.20	25U	25U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH3187	08/04/87	0.00 - 11.70	50U	50U	50U	50U	10J	70	25U	25U
BH3187	08/04/87	11.70 - 12.60	50U	50U	50U	50U	15J	100	25U	25U
BH3287	08/03/87	0.00 - 8.00	50U	50U	50U	50U	9J	99	25U	25U
BH3287	08/03/87	8.00 - 15.00	50U	50U	50U	50U	9J	120	25U	25U
BH3287	08/03/87	8.00 - 15.00	50U	50U	50U	50U	6J	91	25U	25U
BH3287	08/03/87	15.10 - 16.20	50U	50U	50U	50U	25U	86	25U	25U
BH3387	07/30/87	0.00 - 4.00	10U	50U	50U	50U	25U	130	25U	25U
BH3387	07/30/87	7.80 - 14.70	50U	50U	50U	50U	25U	160	25U	25U
BH3387	07/30/87	7.80 - 14.70	50U	50U	50U	50U	25U	190	25U	25U
BH3387	07/30/87	14.70 - 15.90	50U	50U	50U	50U	25U	170	25U	25U
BH3487	07/29/87	0.00 - 8.00	50U	50U	50U	50U	25U	210	25U	25U
BH3487	07/29/87	6.60 - 8.00	50U	50U	50U	50U	25U	350	25U	25U
BH3487	07/29/87	8.00 - 14.70	50U	50U	50U	50U	25U	220	25U	25U
BH3487	07/29/87	8.00 - 14.70	50U	50U	50U	50U	25U	500	25U	25U
BH3487	07/29/87	14.70 - 16.30	50U	50U	50U	50U	25U	150	25U	25U
BH3487	07/29/87	17.00 - 18.00	50U	50U	50U	50U	25U	210	25U	25U
BH3587	07/27/87	0.00 - 12.30	50U	50U	50U	50U	25U	360	25U	25U
BH3587	07/27/87	0.00 - 12.30	50U	50U	50U	50U	25U	310	25U	25U
BH3587	07/28/87	12.00 - 15.00	50U	50U	50U	50U	25U	50U	25U	25U
BH3587	07/28/87	14.10 - 15.40	50U	50U	50U	50U	25U	480	25U	25U
BH3687	07/20/87	0.00 - 5.00	50U	50U	50U	50U	7J	19J	25U	25U
BH3687	07/20/87	0.00 - 5.00	50U	50U	50U	50U	9J	53	25U	25U
BH3687	07/20/87	4.60 - 5.50	50U	50U	50U	50U	9J	52	25U	25U
BH3687	07/20/87	5.00 - 15.00	50U	50U	50U	50U	11J	51	25U	25U
BH3687	07/20/87	17.70 - 20.40	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3787	07/16/87	0.00 - 5.00	12 U	12 U	12 U	12 U	37.4	28	6 U	6 U
BH3787	07/16/87	0.00 - 5.00	12 U	12 U	12 U	12 U	10	25	6 U	6 U
BH3787	07/17/87	11.00 - 12.30	50U	50U	50U	50U	17JB	48JB	25U	25U
BH3887	07/14/87	0.00 - 9.50	50U	50U	50U	50U	12J	86JB	25U	25U
BH3887	07/14/87	9.50 - 10.85	50U	50U	50U	50U	12J	120B	25U	25U

Mound Area Sandstone

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH3187	08/04/87	0.00 - 11.70	25U	NR	25U	10J	50U	25U	25U	50U
BH3187	08/04/87	11.70 - 12.60	25U	NR	25U	32	50U	25U	25U	50U
BH3287	08/03/87	0.00 - 8.00	25U	NR	25U	29	50U	25U	25U	50U
BH3287	08/03/87	8.00 - 15.00	25U	NR	25U	11J	50U	25U	25U	50U
BH3287	08/03/87	8.00 - 15.00	25U	NR	25U	9J	50U	25U	25U	50U
BH3287	08/03/87	15.10 - 16.20	25U	NR	25U	25U	50U	25U	25U	50U
BH3387	07/30/87	0.00 - 4.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3387	07/30/87	7.80 - 14.70	25U	NR	25U	12J	50U	25U	25U	50U
BH3387	07/30/87	7.80 - 14.70	25U	NR	25U	12J	50U	25U	25U	50U
BH3387	07/30/87	14.70 - 15.90	25U	NR	25U	11J	50U	25U	25U	50U
BH3487	07/29/87	0.00 - 8.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3487	07/29/87	6.60 - 8.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3487	07/29/87	8.00 - 14.70	25U	NR	25U	25U	50U	25U	25U	50U
BH3487	07/29/87	8.00 - 14.70	25U	NR	25U	25U	50U	25U	25U	50U
BH3487	07/29/87	14.70 - 16.30	25U	NR	25U	25U	50U	25U	25U	50U
BH3487	07/29/87	17.00 - 18.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3587	07/27/87	0.00 - 12.30	25U	NR	25U	25U	50U	25U	25U	50U
BH3587	07/27/87	0.00 - 12.30	25U	NR	25U	25U	50U	25U	25U	50U
BH3587	07/28/87	12.00 - 15.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3587	07/28/87	14.10 - 15.40	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	0.00 - 5.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	0.00 - 5.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	4.60 - 5.50	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	5.00 - 15.00	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	17.70 - 20.40	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3787	07/16/87	0.00 - 5.00	6 U	NR	6 U	6 U	12 U	6 U	6 U	12 U
BH3787	07/16/87	0.00 - 5.00	6 U	NR	6 U	6 U	12 U	6 U	6 U	12 U
BH3787	07/17/87	11.00 - 12.30	25U	NR	25U	25U	50U	25U	25U	50U
BH3887	07/14/87	0.00 - 9.50	25U	NR	25U	25U	50U	25U	25U	50U
BH3887	07/14/87	9.50 - 10.85	25U	NR	25U	25U	50U	25U	25U	50U

Mound Area Sandstone

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Volatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH3187	08/04/87	0.00 - 11.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3187	08/04/87	11.70 - 12.60	25U	25U	25U	25U	25U	25U	25U	25U
BH3287	08/03/87	0.00 - 8.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3287	08/03/87	15.10 - 16.20	25U	25U	25U	25U	25U	25U	25U	25U
BH3387	07/30/87	0.00 - 4.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3387	07/30/87	14.70 - 15.90	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	0.00 - 8.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	6.60 - 8.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	14.70 - 16.30	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	17.00 - 18.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	25U	25U	25U	25U	25U	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	25U	25U	25U	25U	25U	25U	25U
BH3587	07/28/87	12.00 - 15.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3587	07/28/87	14.10 - 15.40	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	4.60 - 5.50	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	5.00 - 15.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	17.70 - 20.40	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3787	07/16/87	0.00 - 5.00	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BH3787	07/16/87	0.00 - 5.00	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
BH3787	07/17/87	11.00 - 12.30	25U	25U	25U	25U	25U	25U	25U	25U
BH3887	07/14/87	0.00 - 9.50	25U	25U	25U	25U	25U	25U	25U	25U
BH3887	07/14/87	9.50 - 10.85	25U	25U	25U	25U	25U	25U	25U	25U

Mound Area Sandstone

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH3187	08/04/87	0.00 - 11.70	25U	50U	50U	8J	25U	25U	25U	25U
BH3187	08/04/87	11.70 - 12.60	25U	50U	50U	20J	25U	7J	25U	25U
BH3287	08/03/87	0.00 - 8.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3287	08/03/87	15.10 - 16.20	25U	50U	50U	25U	25U	25U	25U	25U
BH3387	07/30/87	0.00 - 4.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3387	07/30/87	14.70 - 15.90	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	0.00 - 8.00	25U	50U	50U	25U	25U	10J	25U	25U
BH3487	07/29/87	6.60 - 8.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	14.70 - 16.30	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	17.00 - 18.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	50U	50U	25U	25U	7J	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	50U	50U	25U	25U	6J	25U	25U
BH3587	07/28/87	12.00 - 15.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3587	07/28/87	14.10 - 15.40	25U	50U	50U	25U	25U	25U	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3687	07/20/87	4.60 - 5.50	25U	50U	50U	25U	25U	7J	25U	25U
BH3687	07/20/87	5.00 - 15.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3687	07/20/87	17.70 - 20.40	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH3787	07/16/87	0.00 - 5.00	6 U	12 U	12 U	6 U	6 U	6 U	6 U	6 U
BH3787	07/16/87	0.00 - 5.00	6 U	12 U	12 U	6 U	6 U	6 U	6 U	6 U
BH3787	07/17/87	11.00 - 12.30	25U	50U	50U	25U	25U	25U	25U	25U
BH3887	07/14/87	0.00 - 9.50	25U	50U	50U	25U	25U	25U	25U	25U
BH3887	07/14/87	9.50 - 10.85	25U	50U	50U	25U	25U	25U	25U	25U

Mound Area Sandstone

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH3187	08/04/87	0.00 - 11.70	25U	25U
BH3187	08/04/87	11.70 - 12.60	25U	25U
BH3287	08/03/87	0.00 - 8.00	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	25U
BH3287	08/03/87	8.00 - 15.00	25U	25U
BH3287	08/03/87	15.10 - 16.20	25U	25U
BH3387	07/30/87	0.00 - 4.00	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	25U
BH3387	07/30/87	7.80 - 14.70	25U	25U
BH3387	07/30/87	14.70 - 15.90	25U	25U
BH3487	07/29/87	0.00 - 8.00	25U	25U
BH3487	07/29/87	6.60 - 8.00	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	25U
BH3487	07/29/87	8.00 - 14.70	25U	25U
BH3487	07/29/87	14.70 - 16.30	25U	25U
BH3487	07/29/87	17.00 - 18.00	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	25U
BH3587	07/27/87	0.00 - 12.30	25U	25U
BH3587	07/28/87	12.00 - 15.00	25U	25U
BH3587	07/28/87	14.10 - 15.40	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	25U
BH3687	07/20/87	0.00 - 5.00	25U	25U
BH3687	07/20/87	4.60 - 5.50	25U	25U
BH3687	07/20/87	5.00 - 15.00	25U	25U
BH3687	07/20/87	17.70 - 20.40	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH3787	07/16/87	0.00 - 5.00	6 U	6 U
BH3787	07/16/87	0.00 - 5.00	6 U	6 U
BH3787	07/17/87	11.00 - 12.30	25U	25U
BH3887	07/14/87	0.00 - 9.50	25U	25U
BH3887	07/14/87	9.50 - 10.85	25U	25U

Mound Area Sandstone

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH3387	07/30/87	18.90 - 19.80	50U	50U	50U	50U	14J	320	25U	25U
BH3387	07/30/87	19.50 - 20.80	50U	50U	50U	50U	15J	96	25U	25U
BH3487	07/29/87	21.00 - 22.10	50U	50U	50U	50U	25U	130	25U	25U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	50U	50U	50U	50U	9J	110	25U	25U
BH3287	08/03/87	17.20 - 18.00	50U	50U	50U	50U	25U	170	25U	25U
BH3587	07/28/87	18.40 - 19.45	50U	50U	50U	50U	25U	280	25U	25U
BH3687	07/20/87	23.40 - 24.50	50U	50U	50U	50U	8J	64	25U	25U
BH3787	07/17/87	18.00 - 21.70	50U	50U	50U	50U	12JB	130B	25U	25U
BH3787	07/17/87	25.00 - 26.20	50U	50U	50U	50U	17JB	150B	25U	25U
BH3987	08/12/87	14.50 - 17.00	50U	50U	50U	50U	25U	170	25U	25U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	50U	50U	50U	50U	25U	110	25U	25U
BH3987	08/12/87	2.00 - 3.40	50U	50U	50U	50U	25U	79	25U	25U
BH3987	08/12/87	4.00 - 5.50	50U	50U	50U	50U	25U	170	25U	25U
BH3987	08/12/87	7.00 - 8.00	50U	50U	50U	50U	25U	220	25U	25U
BH3987	08/12/87	9.50 - 12.00	50U	50U	50U	50U	25U	200	25U	25U
BH3987	08/12/87	12.00 - 14.00	50U	50U	50U	50U	25U	150	25U	25U
BH4087	08/13/87	4.00 - 6.80	50U	50U	50U	50U	25U	140	25U	25U
BH4087	08/13/87	7.00 - 9.30	50U	50U	50U	50U	25U	120	25U	25U
BH4187	08/17/87	0.00 - 10.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	0.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	9.50 - 10.80	50U	50U	50U	50U	25U	210	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH3387	07/30/87	18.90 - 19.80	25U	NR	25U	10J	50U	25U	25U	50U
BH3387	07/30/87	19.50 - 20.80	25U	NR	25U	7J	50U	25U	25U	50U
BH3487	07/29/87	21.00 - 22.10	25U	NR	25U	25U	50U	25U	25U	50U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	25U	NR	25U	5J	50U	25U	25U	50U
BH3287	08/03/87	17.20 - 18.00	25U	NR	25U	19J	50U	25U	25U	50U
BH3587	07/28/87	18.40 - 19.45	25U	NR	25U	25U	50U	25U	25U	50U
BH3687	07/20/87	23.40 - 24.50	25U	NR	25U	25U	50U	25U	25U	50U
BH3787	07/17/87	18.00 - 21.70	25U	NR	25U	25U	50U	25U	25U	50U
BH3787	07/17/87	25.00 - 26.20	25U	NR	25U	25U	50U	25U	25U	50U
BH3987	08/12/87	14.50 - 17.00	25U	NR	25U	25U	72	25U	25U	50U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	25U	NR	25U	15J	47J	25U	25U	50U
BH3987	08/12/87	2.00 - 3.40	25U	NR	25U	14J	40J	25U	25U	50U
BH3987	08/12/87	4.00 - 5.50	25U	NR	25U	25U	56	25U	25U	50U
BH3987	08/12/87	7.00 - 8.00	25U	NR	25U	25U	88	25U	25U	50U
BH3987	08/12/87	9.50 - 12.00	25U	NR	25U	25U	140	25U	25U	50U
BH3987	08/12/87	12.00 - 14.00	25U	NR	25U	6J	48J	25U	25U	50U
BH4087	08/13/87	4.00 - 6.80	25U	NR	25U	25U	50U	25U	25U	50U
BH4087	08/13/87	7.00 - 9.30	25U	NR	25U	25U	50U	25U	25U	50U
BH4187	08/17/87	0.00 - 10.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	0.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	9.50 - 10.80	25U	NR	25U	25U	50U	25U	25U	50U

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Volatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH3387	07/30/87	18.90 - 19.80	25U	25U	25U	25U	25U	25U	25U	25U
BH3387	07/30/87	19.50 - 20.80	25U	25U	25U	25U	25U	25U	25U	25U
BH3487	07/29/87	21.00 - 22.10	25U	25U	25U	25U	25U	25U	25U	25U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	25U	25U	25U	25U	25U	25U	25U	25U
BH3287	08/03/87	17.20 - 18.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3587	07/28/87	18.40 - 19.45	25U	25U	25U	25U	25U	25U	25U	25U
BH3687	07/20/87	23.40 - 24.50	25U	25U	25U	25U	25U	25U	25U	25U
BH3787	07/17/87	18.00 - 21.70	25U	25U	6J	25U	25U	25U	25U	25U
BH3787	07/17/87	25.00 - 26.20	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	14.50 - 17.00	25U	25U	25U	25U	25U	25U	25U	25U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	2.00 - 3.40	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	4.00 - 5.50	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	7.00 - 8.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	9.50 - 12.00	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	12.00 - 14.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4087	08/13/87	4.00 - 6.80	25U	25U	25U	25U	25U	25U	25U	25U
BH4087	08/13/87	7.00 - 9.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4187	08/17/87	0.00 - 10.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	0.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	9.50 - 10.80	25U	25U	25U	25U	25U	25U	12J	25U

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Volatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH3387	07/30/87	18.90 - 19.80	25U	50U	50U	25U	25U	25U	25U	25U
BH3387	07/30/87	19.50 - 20.80	25U	50U	50U	25U	25U	25U	25U	25U
BH3487	07/29/87	21.00 - 22.10	25U	50U	50U	25U	25U	25U	25U	25U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	25U	50U	50U	25U	25U	25U	25U	25U
BH3287	08/03/87	17.20 - 18.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3587	07/28/87	18.40 - 19.45	25U	50U	50U	25U	25U	25U	25U	25U
BH3687	07/20/87	23.40 - 24.50	25U	50U	50U	25U	25U	25U	25U	25U
BH3787	07/17/87	18.00 - 21.70	25U	50U	50U	25U	25U	25U	25U	25U
BH3787	07/17/87	25.00 - 26.20	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	14.50 - 17.00	25U	50U	50U	25U	25U	25U	25U	25U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	2.00 - 3.40	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	4.00 - 5.50	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	7.00 - 8.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	9.50 - 12.00	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	12.00 - 14.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4087	08/13/87	4.00 - 6.80	25U	50U	50U	25U	25U	25U	25U	25U
BH4087	08/13/87	7.00 - 9.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4187	08/17/87	0.00 - 10.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	0.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4187	08/17/87	9.50 - 10.80	25U	50U	50U	25U	25U	25U	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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Operable Unit No. 2

Volatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH3387	07/30/87	18.90 - 19.80	25U	25U
BH3387	07/30/87	19.50 - 20.80	25U	25U
BH3487	07/29/87	21.00 - 22.10	25U	25U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	25U	25U
BH3287	08/03/87	17.20 - 18.00	25U	25U
BH3587	07/28/87	18.40 - 19.45	25U	25U
BH3687	07/20/87	23.40 - 24.50	25U	25U
BH3787	07/17/87	18.00 - 21.70	25U	25U
BH3787	07/17/87	25.00 - 26.20	25U	25U
BH3987	08/12/87	14.50 - 17.00	25U	25U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	25U	25U
BH3987	08/12/87	2.00 - 3.40	25U	25U
BH3987	08/12/87	4.00 - 5.50	25U	25U
BH3987	08/12/87	7.00 - 8.00	25U	25U
BH3987	08/12/87	9.50 - 12.00	25U	25U
BH3987	08/12/87	12.00 - 14.00	25U	25U
BH4087	08/13/87	4.00 - 6.80	25U	25U
BH4087	08/13/87	7.00 - 9.30	25U	25U
BH4187	08/17/87	0.00 - 10.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4187	08/17/87	0.00 - 12.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4187	08/17/87	9.50 - 10.80	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH4187	08/17/87	12.00 - 14.50	50U	50U	50U	50U	25U	150	25U	25U
BH4187	08/17/87	14.50 - 17.00	50U	50U	50U	50U	25U	210	25U	25U
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	7.00 - 8.30	50U	50U	50U	50U	25U	100	25U	25U
BH4287	08/18/87	17.00 - 18.80	50U	50U	50U	50U	25U	71	25U	25U
BH4287	08/18/87	22.00 - 24.50	50U	50U	50U	50U	25U	50U	25U	25U
BH4387	09/04/87	0.00 - 1.60	50U	50U	50U	50U	8J	340	25U	25U
BH4387	09/04/87	2.00 - 3.60	50U	50U	50U	50U	12J	240	25U	25U
BH4387	09/04/87	4.00 - 5.30	50U	50U	50U	50U	8J	300	25U	25U
BH4387	09/04/87	4.00 - 5.30	50U	50U	50U	50U	20J	270	25U	25U
BH4387	09/04/87	7.00 - 7.90	50U	50U	50U	50U	10J	290	25U	25U
BH4387	09/04/87	9.50 - 10.30	50U	50U	50U	50U	13J	290	25U	25U
BH4387	09/04/87	12.00 - 12.90	50U	50U	50U	50U	14J	330	25U	25U
BH4387	09/04/87	14.50 - 15.80	50U	50U	50U	50U	15J	290	25U	25U
BH4387	09/04/87	17.00 - 18.30	50U	50U	50U	50U	13J	360	25U	25U
BH4387	09/08/87	22.20 - 23.20	50U	50U	50U	50U	17JB	130B	25U	25U
BH4387	09/08/87	24.70 - 26.00	50U	50U	50U	50U	18JB	120B	25U	25U
BH4487	09/09/87	4.00 - 6.20	50U	50U	50U	50U	7J	160B	25U	25U
BH4487	09/09/87	14.50 - 16.40	50U	50U	50U	50U	7J	130B	25U	25U
BH4487	09/09/87	19.50 - 22.00	50U	50U	50U	50U	8J	150B	25U	25U
BH4487	09/09/87	22.00 - 23.50	50U	50U	50U	50U	8J	140B	25U	25U
BH4487	09/09/87	24.50 - 27.00	50U	50U	50U	50U	11J	120B	25U	25U
BH4587	08/31/87	0.00 - 9.50	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	7.00 - 9.50	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	08/31/87	9.50 - 17.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	14.50 - 16.50	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	08/31/87	17.50 - 19.90	50U	50U	50U	50U	25U	50U	25U	25U
BH4687	09/02/87	0.00 - 9.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	7.00 - 9.00	50U	50U	50U	50U	25U	50U	25U	25U
BH4687	09/02/87	9.50 - 17.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	17.00 - 17.80	50U	50U	50U	50U	25U	50U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH4187	08/17/87	12.00 - 14.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4187	08/17/87	14.50 - 17.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	7.00 - 8.30	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/18/87	17.00 - 18.80	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/18/87	22.00 - 24.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4387	09/04/87	0.00 - 1.60	25U	NR	25U	25U	150	110	25U	50U
BH4387	09/04/87	2.00 - 3.60	25U	NR	25U	25U	100	20J	25U	50U
BH4387	09/04/87	4.00 - 5.30	25U	NR	25U	25U	120	25U	25U	50U
BH4387	09/04/87	4.00 - 5.30	25U	NR	25U	25U	100	84	25U	50U
BH4387	09/04/87	7.00 - 7.90	25U	NR	25U	25U	120	91	25U	50U
BH4387	09/04/87	9.50 - 10.30	25U	NR	25U	25U	110	130	25U	50U
BH4387	09/04/87	12.00 - 12.90	25U	NR	25U	25U	130	6J	25U	50U
BH4387	09/04/87	14.50 - 15.80	25U	NR	25U	25U	110	8J	25U	50U
BH4387	09/04/87	17.00 - 18.30	25U	NR	25U	25U	130	20J	25U	50U
BH4387	09/08/87	22.20 - 23.20	25U	NR	25U	25U	50U	25U	25U	50U
BH4387	09/08/87	24.70 - 26.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	4.00 - 6.20	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	14.50 - 16.40	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	19.50 - 22.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	22.00 - 23.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	24.50 - 27.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	0.00 - 9.50	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	7.00 - 9.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	9.50 - 17.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	14.50 - 16.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	17.50 - 19.90	25U	NR	25U	25U	50U	25U	25U	50U
BH4687	09/02/87	0.00 - 9.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	7.00 - 9.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4687	09/02/87	9.50 - 17.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	17.00 - 17.80	25U	NR	25U	25U	50U	190	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH4187	08/17/87	12.00 - 14.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4187	08/17/87	14.50 - 17.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	7.00 - 8.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/18/87	17.00 - 18.80	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/18/87	22.00 - 24.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	0.00 - 1.60	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	2.00 - 3.60	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	7.00 - 7.90	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	9.50 - 10.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	12.00 - 12.90	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	14.50 - 15.80	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/04/87	17.00 - 18.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/08/87	22.20 - 23.20	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/08/87	24.70 - 26.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	4.00 - 6.20	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	14.50 - 16.40	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	19.50 - 22.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	22.00 - 23.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	24.50 - 27.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	0.00 - 9.50	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	7.00 - 9.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	9.50 - 17.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	14.50 - 16.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	17.50 - 19.90	25U	25U	25U	25U	25U	25U	25U	25U
BH4687	09/02/87	0.00 - 9.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	7.00 - 9.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4687	09/02/87	9.50 - 17.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	17.00 - 17.80	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH4187	08/17/87	12.00 - 14.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4187	08/17/87	14.50 - 17.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	7.00 - 8.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/18/87	17.00 - 18.80	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/18/87	22.00 - 24.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	0.00 - 1.60	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	2.00 - 3.60	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	7.00 - 7.90	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	9.50 - 10.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	12.00 - 12.90	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	14.50 - 15.80	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/04/87	17.00 - 18.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/08/87	22.20 - 23.20	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/08/87	24.70 - 26.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	4.00 - 6.20	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	14.50 - 16.40	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	19.50 - 22.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	22.00 - 23.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	24.50 - 27.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	0.00 - 9.50	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	7.00 - 9.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	9.50 - 17.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4587	08/28/87	14.50 - 16.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	17.50 - 19.90	25U	50U	50U	25U	25U	25U	25U	25U
BH4687	09/02/87	0.00 - 9.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	7.00 - 9.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4687	09/02/87	9.50 - 17.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	17.00 - 17.80	25U	50U	50U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH4187	08/17/87	12.00 - 14.50	25U	25U
BH4187	08/17/87	14.50 - 17.00	25U	25U
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4287	08/18/87	0.00 - 8.30	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4287	08/18/87	7.00 - 8.30	25U	25U
BH4287	08/18/87	17.00 - 18.80	25U	25U
BH4287	08/18/87	22.00 - 24.50	25U	25U
BH4387	09/04/87	0.00 - 1.60	25U	25U
BH4387	09/04/87	2.00 - 3.60	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	25U
BH4387	09/04/87	4.00 - 5.30	25U	25U
BH4387	09/04/87	7.00 - 7.90	25U	25U
BH4387	09/04/87	9.50 - 10.30	25U	25U
BH4387	09/04/87	12.00 - 12.90	25U	25U
BH4387	09/04/87	14.50 - 15.80	25U	25U
BH4387	09/04/87	17.00 - 18.30	25U	25U
BH4387	09/08/87	22.20 - 23.20	25U	25U
BH4387	09/08/87	24.70 - 26.00	25U	25U
BH4487	09/09/87	4.00 - 6.20	25U	25U
BH4487	09/09/87	14.50 - 16.40	25U	25U
BH4487	09/09/87	19.50 - 22.00	25U	25U
BH4487	09/09/87	22.00 - 23.50	25U	25U
BH4487	09/09/87	24.50 - 27.00	25U	25U
BH4587	08/31/87	0.00 - 9.50	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4587	08/28/87	7.00 - 9.50	25U	25U
BH4587	08/31/87	9.50 - 17.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4587	08/28/87	14.50 - 16.50	25U	25U
BH4587	08/31/87	17.50 - 19.90	25U	25U
BH4687	09/02/87	0.00 - 9.00	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4687	09/02/87	7.00 - 9.00	25U	25U
BH4687	09/02/87	9.50 - 17.80	INSUFFICIENT SAMPLE FOR VOLATILE ORGANIC ANALYSIS	
BH4687	09/02/87	17.00 - 17.80	25U	25U

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DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH4687	09/03/87	24.50 - 25.10	50U	50U	50U	50U	5J	210B	25U	25U
BH4787	09/11/87	0.00 - 1.40	50U	50U	50U	50U	7J	84B	25U	25U
BH4787	09/11/87	2.00 - 3.64	50U	50U	50U	50U	25U	65B	25U	25U
BH4787	09/11/87	4.00 - 5.32	50U	50U	50U	50U	25U	77B	25U	25U
BH4787	09/11/87	6.00 - 7.15	50U	50U	50U	50U	25U	120B	25U	25U
BH4787	09/11/87	8.00 - 9.00	50U	50U	50U	50U	25U	8J	140B	25U
BH4787	09/11/87	9.50 - 10.52	50U	50U	50U	50U	25U	70B	25U	25U
BH4787	09/11/87	11.50 - 12.66	50U	50U	50U	50U	25U	93B	25U	25U
BH4787	09/11/87	13.50 - 14.78	50U	50U	50U	50U	6J	130B	25U	25U
BH4787	09/11/87	15.00 - 15.65	50U	50U	50U	50U	25U	53B	25U	25U
BH4787	09/14/87	16.00 - 17.62	50U	50U	50U	50U	11JB	820B	25U	25U
BH4787	09/14/87	20.50 - 21.00	50U	50U	50U	50U	12JB	410B	25U	25U
BH4787	09/14/87	21.00 - 22.50	50U	50U	50U	50U	15JB	480B	25U	25U
BH4787	09/14/87	22.50 - 24.30	50U	50U	50U	50U	11JB	330B	25U	25U
BH4887	09/16/87	6.00 - 7.14	50U	50U	50U	50U	11JB	100B	25U	25U
BH4887	09/17/87	10.00 - 11.43	50U	50U	50U	50U	25U	220B	25U	25U
BH4987	09/18/87	6.00 - 7.30	50U	50U	50U	50U	25U	300B	25U	25U
BH4987	09/18/87	8.00 - 15.54	50U	50U	50U	50U	25U	710B	25U	25U
BH4987	09/21/87	20.00 - 22.00	50U	50U	50U	50U	6JB	91B	25U	25U
BH4987	09/21/87	22.00 - 24.00	50U	50U	50U	50U	7JB	90B	25U	25U
BH5087	09/17/87	7.00 - 8.90	50U	50U	50U	50U	25U	940B	25U	25U
BH5087	09/17/87	12.00 - 12.90	50U	50U	50U	50U	25U	1000B	25U	25U
BH5187	09/18/87	0.00 - 9.00	50U	50U	50U	50U	25U	1700B	25U	25U
BH5187	09/22/87	12.00 - 14.40	50U	50U	50U	50U	6JB	300B	25U	25U
BH5187	09/22/87	14.50 - 17.00	50U	50U	50U	50U	6JB	420B	25U	25U
BH5287	09/22/87	0.00 - 9.50	00U	50U	50U	50U	6JB	43JB	25U	25U
BH5287	09/22/87	12.00 - 13.00	50U	50U	50U	50U	6JB	51B	25U	25U
BH5387	09/11/87	0.00 - 18.80	50U	50U	50U	50U	11J	75B	25U	25U
BH5387	09/11/87	2.00 - 3.50	50U	50U	50U	50U	5J	61B	25U	25U
BH5387	09/11/87	6.00 - 7.80	50U	50U	50U	50U	25U	58B	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH4687	09/03/87	24.50 - 25.10	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	0.00 - 1.40	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	2.00 - 3.64	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	4.00 - 5.32	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	6.00 - 7.15	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	8.00 - 9.00	25U	NR	25U	25U	50U	13J	25U	50U
BH4787	09/11/87	9.50 - 10.52	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	11.50 - 12.66	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	13.50 - 14.78	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/11/87	15.00 - 15.65	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/14/87	16.00 - 17.62	25U	NR	25U	21J	50U	25U	25U	50U
BH4787	09/14/87	20.50 - 21.00	25U	NR	25U	12J	50U	25U	25U	50U
BH4787	09/14/87	21.00 - 22.50	25U	NR	25U	19J	50U	25U	25U	50U
BH4787	09/14/87	22.50 - 24.30	25U	NR	25U	25U	50U	25U	25U	50U
BH4887	09/16/87	6.00 - 7.14	25U	NR	25U	8J	50U	25U	25U	50U
BH4887	09/17/87	10.00 - 11.43	25U	NR	25U	25U	50U	25U	25U	50U
BH4987	09/18/87	6.00 - 7.30	25U	NR	25U	23J	50U	25U	25U	50U
BH4987	09/18/87	8.00 - 15.54	25U	NR	25U	25U	50U	25U	25U	50U
BH4987	09/21/87	20.00 - 22.00	25U	NR	25U	15J	50U	25U	25U	50U
BH4987	09/21/87	22.00 - 24.00	25U	NR	25U	15J	50U	25U	25U	50U
BH5087	09/17/87	7.00 - 8.90	25U	NR	25U	25U	50U	25U	25U	50U
BH5087	09/17/87	12.00 - 12.90	25U	NR	25U	25U	50U	25U	25U	50U
BH5187	09/18/87	0.00 - 9.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5187	09/22/87	12.00 - 14.40	25U	NR	25U	7J	50U	25U	25U	50U
BH5187	09/22/87	14.50 - 17.00	25U	NR	25U	24J	50U	25U	25U	50U
BH5287	09/22/87	0.00 - 9.50	25U	NR	25U	7J	50U	25U	25U	50U
BH5287	09/22/87	12.00 - 13.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5387	09/11/87	0.00 - 18.80	25U	NR	25U	25U	50U	25U	25U	50U
BH5387	09/11/87	2.00 - 3.50	25U	NR	25U	25U	50U	25U	25U	50U
BH5387	09/11/87	6.00 - 7.80	25U	NR	25U	25U	50U	25U	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH4687	09/03/87	24.50 - 25.10	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	0.00 - 1.40	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	2.00 - 3.64	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	4.00 - 5.32	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	6.00 - 7.15	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	8.00 - 9.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	9.50 - 10.52	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	11.50 - 12.66	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	13.50 - 14.78	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/11/87	15.00 - 15.65	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/14/87	16.00 - 17.62	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/14/87	20.50 - 21.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/14/87	21.00 - 22.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/14/87	22.50 - 24.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4887	09/16/87	6.00 - 7.14	25U	25U	25U	25U	25U	25U	25U	25U
BH4887	09/17/87	10.00 - 11.43	25U	25U	25U	25U	25U	25U	25U	25U
BH4987	09/18/87	6.00 - 7.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4987	09/18/87	8.00 - 15.54	25U	25U	25U	25U	25U	25U	25U	25U
BH4987	09/21/87	20.00 - 22.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4987	09/21/87	22.00 - 24.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5087	09/17/87	7.00 - 8.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5087	09/17/87	12.00 - 12.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5187	09/18/87	0.00 - 9.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5187	09/22/87	12.00 - 14.40	25U	25U	25U	25U	25U	25U	25U	25U
BH5187	09/22/87	14.50 - 17.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5287	09/22/87	0.00 - 9.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5287	09/22/87	12.00 - 13.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/11/87	0.00 - 18.80	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/11/87	2.00 - 3.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/11/87	6.00 - 7.80	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH4687	09/03/87	24.50 - 25.10	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	0.00 - 1.40	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	2.00 - 3.64	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	4.00 - 5.32	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	6.00 - 7.15	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	8.00 - 9.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	9.50 - 10.52	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	11.50 - 12.66	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	13.50 - 14.78	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/11/87	15.00 - 15.65	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/14/87	16.00 - 17.62	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/14/87	20.50 - 21.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/14/87	21.00 - 22.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/14/87	22.50 - 24.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4887	09/16/87	6.00 - 7.14	25U	50U	50U	25U	25U	25U	25U	25U
BH4887	09/17/87	10.00 - 11.43	25U	50U	50U	25U	25U	25U	25U	25U
BH4987	09/18/87	6.00 - 7.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4987	09/18/87	8.00 - 15.54	25U	50U	50U	25U	25U	25U	25U	25U
BH4987	09/21/87	20.00 - 22.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4987	09/21/87	22.00 - 24.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5087	09/17/87	7.00 - 8.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5087	09/17/87	12.00 - 12.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5187	09/18/87	0.00 - 9.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5187	09/22/87	12.00 - 14.40	25U	50U	50U	25U	25U	25U	25U	25U
BH5187	09/22/87	14.50 - 17.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5287	09/22/87	0.00 - 9.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5287	09/22/87	12.00 - 13.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/11/87	0.00 - 18.80	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/11/87	2.00 - 3.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/11/87	6.00 - 7.80	25U	50U	50U	25U	25U	25U	25U	25U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH4687	09/03/87	24.50 - 25.10	25U	25U
BH4787	09/11/87	0.00 - 1.40	25U	25U
BH4787	09/11/87	2.00 - 3.64	25U	25U
BH4787	09/11/87	4.00 - 5.32	25U	25U
BH4787	09/11/87	6.00 - 7.15	25U	25U
BH4787	09/11/87	8.00 - 9.00	25U	25U
BH4787	09/11/87	9.50 - 10.52	25U	25U
BH4787	09/11/87	11.50 - 12.66	25U	25U
BH4787	09/11/87	13.50 - 14.78	25U	25U
BH4787	09/11/87	15.00 - 15.65	25U	25U
BH4787	09/14/87	16.00 - 17.62	25U	25U
BH4787	09/14/87	20.50 - 21.00	25U	25U
BH4787	09/14/87	21.00 - 22.50	25U	25U
BH4787	09/14/87	22.50 - 24.30	25U	25U
BH4887	09/16/87	6.00 - 7.14	25U	25U
BH4887	09/17/87	10.00 - 11.43	25U	25U
BH4987	09/18/87	6.00 - 7.30	25U	25U
BH4987	09/18/87	8.00 - 15.54	25U	25U
BH4987	09/21/87	20.00 - 22.00	25U	25U
BH4987	09/21/87	22.00 - 24.00	25U	25U
BH5087	09/17/87	7.00 - 8.90	25U	25U
BH5087	09/17/87	12.00 - 12.90	25U	25U
BH5187	09/18/87	0.00 - 9.00	25U	25U
BH5187	09/22/87	12.00 - 14.40	25U	25U
BH5187	09/22/87	14.50 - 17.00	25U	25U
BH5287	09/22/87	0.00 - 9.50	25U	25U
BH5287	09/22/87	12.00 - 13.00	25U	25U
BH5387	09/11/87	0.00 - 18.80	25U	25U
BH5387	09/11/87	2.00 - 3.50	25U	25U
BH5387	09/11/87	6.00 - 7.80	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH5387	09/11/87	8.00 - 9.90	50U	50U	50U	50U	6J	130B	25U	25U
BH5387	09/14/87	14.20 - 16.20	50U	50U	50U	50U	10JB	900B	25U	25U
BH5387	09/14/87	16.20 - 17.90	50U	50U	50U	50U	10JB	430B	25U	25U
BH5387	09/14/87	18.60 - 20.60	50U	50U	50U	50U	10JB	1600B	25U	25U
BH5387	09/14/87	20.60 - 22.60	50U	50U	50U	50U	9JB	2000B	25U	25U
BH5487	09/15/87	2.00 - 4.00	50U	50U	50U	50U	7JB	300B	25U	25U
BH5487	09/16/87	6.00 - 7.50	50U	50U	50U	50U	11JB	270B	25U	25U
BH5487	09/16/87	8.00 - 9.65	50U	50U	50U	50U	9JB	200B	25U	25U
BH5487	09/16/87	10.00 - 11.50	50U	50U	50U	50U	13JB	150B	25U	25U
BH5487	09/16/87	12.20 - 14.20	50U	50U	50U	50U	9JB	290B	25U	25U
BH5487	09/18/87	14.20 - 22.80	50U	50U	50U	50U	25U	1600B	25U	25U
BH5487	09/21/87	23.50 - 32.80	50U	50U	50U	50U	14JB	190B	25U	25U
BH5487	09/21/87	38.50 - 39.00	50U	50U	50U	50U	25U	29B	25U	25U
BH5487	09/21/87	40.50 - 41.00	50U	50U	50U	50U	25U	22B	25U	25U
BH5587	09/15/87	2.00 - 3.30	50U	50U	50U	50U	6JB	810B	25U	25U
BH5587	09/15/87	9.50 - 10.90	50U	50U	50U	50U	5JB	540B	25U	25U
BH5587	09/15/87	12.00 - 14.00	50U	50U	50U	50U	6JB	1200B	25U	25U
BH5587	09/15/87	14.50 - 23.50	50U	50U	50U	50U	5JB	850B	25U	25U
BH5587	09/15/87	27.00 - 29.20	50U	50U	50U	50U	5JB	1100B	25U	25U
BH5587	09/09/87	29.50 - 32.00	50U	50U	50U	50U	8JB	1200B	25U	25U
BH5687	09/10/87	2.00 - 3.50	50U	50U	50U	50U	25U	50U	25U	25U
BH5687	09/10/87	4.00 - 5.30	50U	50U	50U	50U	25U	50U	25U	25U
BH5687	09/10/87	9.50 - 10.40	50U	50U	50U	50U	25U	50U	25U	25U
BH5687	09/10/87	12.00 - 14.00	50U	50U	50U	50U	25U	50U	25U	25U
BH5687	09/11/87	17.00 - 18.90	50U	50U	50U	50U	5J	74B	25U	25U
BH5687	09/11/87	19.50 - 22.00	50U	50U	50U	50U	4B	120B	25U	25U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	50U	50U	50U	50U	25U	120	25U	25U
BH3987	08/12/87	19.50 - 22.00	50U	50U	50U	50U	25U	140	25U	25U
BH4287	08/19/87	24.50 - 27.00	50U	50U	50U	50U	25U	110	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH5387	09/11/87	8.00 - 9.90	25U	NR	25U	25U	50U	25U	25U	50U
BH5387	09/14/87	14.20 - 16.20	25U	NR	25U	8J	50U	25U	25U	50U
BH5387	09/14/87	16.20 - 17.90	25U	NR	25U	30	50U	25U	25U	50U
BH5387	09/14/87	18.60 - 20.60	25U	NR	25U	16J	50U	25U	25U	50U
BH5387	09/14/87	20.60 - 22.60	25U	NR	25U	13J	50U	25U	25U	50U
BH5487	09/15/87	2.00 - 4.00	25U	NR	5J	120	50U	25U	25U	50U
BH5487	09/16/87	6.00 - 7.50	25U	NR	25U	8J	50U	25U	25U	50U
BH5487	09/16/87	8.00 - 9.65	25U	NR	25U	11J	50U	25U	25U	50U
BH5487	09/16/87	10.00 - 11.50	25U	NR	25U	14J	50U	25U	25U	50U
BH5487	09/16/87	12.20 - 14.20	25U	NR	25U	5J	50U	25U	25U	50U
BH5487	09/18/87	14.20 - 22.80	25U	NR	25U	46	50U	25U	25U	50U
BH5487	09/21/87	23.50 - 32.80	25U	NR	25U	22J	50U	25U	25U	50U
BH5487	09/21/87	38.50 - 39.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5487	09/21/87	40.50 - 41.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5587	09/15/87	2.00 - 3.30	25U	NR	25U	14J	50U	25U	25U	50U
BH5587	09/15/87'	9.50 - 10.90	25U	NR	25U	5J	50U	25U	25U	50U
BH5587	09/15/87	12.00 - 14.00	25U	NR	25U	6J	50U	25U	25U	50U
BH5587	09/15/87	14.50 - 23.50	25U	NR	25U	18J	50U	25U	25U	50U
BH5587	09/15/87	27.00 - 29.20	25U	NR	25U	19J	50U	25U	25U	50U
BH5587	09/09/87	29.50 - 32.00	25U	NR	25U	100	50U	25U	25U	50U
BH5687	09/10/87	2.00 - 3.50	25U	NR	25U	25U	50U	25U	25U	50U
BH5687	09/10/87	4.00 - 5.30	25U	NR	25U	25U	50U	25U	25U	50U
BH5687	09/10/87	9.50 - 10.40	25U	NR	25U	25U	50U	25U	25U	50U
BH5687	09/10/87	12.00 - 14.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5687	09/11/87	17.00 - 18.90	25U	NR	25U	25U	50U	25U	25U	50U
BH5687	09/11/87	19.50 - 22.00	25U	NR	25U	25U	50U	25U	25U	50U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	25U	NR	25U	25U	58	25U	25U	50U
BH3987	08/12/87	19.50 - 22.00	25U	NR	25U	25U	55	25U	25U	50U
BH4287	08/19/87	24.50 - 27.00	25U	NR	25U	25U	50U	25U	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH5387	09/11/87	8.00 - 9.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/14/87	14.20 - 16.20	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/14/87	16.20 - 17.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/14/87	18.60 - 20.60	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/14/87	20.60 - 22.60	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/15/87	2.00 - 4.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/16/87	6.00 - 7.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/16/87	8.00 - 9.65	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/16/87	10.00 - 11.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/16/87	12.20 - 14.20	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/18/87	14.20 - 22.80	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/21/87	23.50 - 32.80	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/21/87	38.50 - 39.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/21/87	40.50 - 41.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	2.00 - 3.30	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	9.50 - 10.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	12.00 - 14.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	14.50 - 23.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	27.00 - 29.20	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/09/87	29.50 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/10/87	2.00 - 3.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/10/87	4.00 - 5.30	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/10/87	9.50 - 10.40	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/10/87	12.00 - 14.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/11/87	17.00 - 18.90	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/11/87	19.50 - 22.00	25U	25U	25U	25U	25U	25U	25U	25U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	25U	25U	25U	25U	25U	25U	25U	25U
BH3987	08/12/87	19.50 - 22.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/19/87	24.50 - 27.00	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH5387	09/11/87	8.00 - 9.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/14/87	14.20 - 16.20	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/14/87	16.20 - 17.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/14/87	18.60 - 20.60	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/14/87	20.60 - 22.60	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/15/87	2.00 - 4.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/16/87	6.00 - 7.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/16/87	8.00 - 9.65	25U	50U	50U	25U	25U	30	25U	25U
BH5487	09/16/87	10.00 - 11.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/16/87	12.20 - 14.20	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/18/87	14.20 - 22.80	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/21/87	23.50 - 32.80	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/21/87	38.50 - 39.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/21/87	40.50 - 41.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	2.00 - 3.30	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	9.50 - 10.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	12.00 - 14.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	14.50 - 23.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	27.00 - 29.20	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/09/87	29.50 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/10/87	2.00 - 3.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/10/87	4.00 - 5.30	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/10/87	9.50 - 10.40	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/10/87	12.00 - 14.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/11/87	17.00 - 18.90	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/11/87	19.50 - 22.00	25U	50U	50U	25U	25U	25U	25U	25U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	25U	50U	50U	25U	25U	25U	25U	25U
BH3987	08/12/87	19.50 - 22.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/19/87	24.50 - 27.00	25U	50U	50U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH5387	09/11/87	8.00 - 9.90	25U	25U
BH5387	09/14/87	14.20 - 16.20	25U	25U
BH5387	09/14/87	16.20 - 17.90	25U	25U
BH5387	09/14/87	18.60 - 20.60	25U	25U
BH5387	09/14/87	20.60 - 22.60	25U	25U
BH5487	09/15/87	2.00 - 4.00	25U	13J
BH5487	09/16/87	6.00 - 7.50	25U	25U
BH5487	09/16/87	8.00 - 9.65	25U	25U
BH5487	09/16/87	10.00 - 11.50	25U	25U
BH5487	09/16/87	12.20 - 14.20	25U	25U
BH5487	09/18/87	14.20 - 22.80	25U	25U
BH5487	09/21/87	23.50 - 32.80	25U	25U
BH5487	09/21/87	38.50 - 39.00	25U	25U
BH5487	09/21/87	40.50 - 41.00	25U	25U
BH5587	09/15/87	2.00 - 3.30	25U	5J
BH5587	09/15/87	9.50 - 10.90	25U	25U
BH5587	09/15/87	12.00 - 14.00	25U	25U
BH5587	09/15/87	14.50 - 23.50	25U	25U
BH5587	09/15/87	27.00 - 29.20	25U	25U
BH5587	09/09/87	29.50 - 32.00	25U	25U
BH5687	09/10/87	2.00 - 3.50	25U	25U
BH5687	09/10/87	4.00 - 5.30	25U	25U
BH5687	09/10/87	9.50 - 10.40	25U	25U
BH5687	09/10/87	12.00 - 14.00	25U	25U
BH5687	09/11/87	17.00 - 18.90	25U	25U
BH5687	09/11/87	19.50 - 22.00	25U	25U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	25U	25U
BH3987	08/12/87	19.50 - 22.00	25U	25U
BH4287	08/19/87	24.50 - 27.00	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH4287	08/19/87	27.00 - 29.50	50U	50U	50U	50U	25U	140	25U	25U
BH4287	08/19/87	29.50 - 32.00	50U	50U	50U	50U	25U	50U	25U	25U
BH4287	08/19/87	32.00 - 34.50	50U	50U	50U	50U	25U	140	25U	25U
BH4287	08/19/87	34.50 - 35.90	50U	50U	50U	50U	25U	68	25U	25U
BH4287	08/19/87	37.00 - 39.50	50U	50U	50U	50U	25U	62	25U	25U
BH4287	08/20/87	39.50 - 40.40	50U	50U	50U	50U	25U	120	25U	25U
BH4287	08/21/87	45.50 - 47.00	50U	50U	50U	50U	25U	78	25U	25U
BH4487	09/09/87	29.50 - 32.00	50U	50U	50U	50U	10J	140B	25U	25U
BH4487	09/09/87	32.00 - 34.50	50U	50U	50U	50U	25J	180B	25U	25U
BH4587	08/31/87	20.00 - 22.30	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	08/31/87	22.50 - 25.00	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	09/01/87	32.50 - 33.90	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	09/01/87	35.00 - 37.50	50U	50U	50U	50U	25U	50U	25U	25U
BH5187	09/22/87	17.00 - 19.50	50U	50U	50U	50U	6JB	72B	25U	25U
BH5687	09/11/87	22.00 - 24.30	50U	50U	50U	50U	26	110B	25U	25U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	50U	50U	50U	50U	25U	170	25U	25U
BH4087	08/13/87	9.50 - 12.00	50U	50U	50U	50U	25U	150	25U	25U
BH4187	08/17/87	17.00 - 19.50	50U	50U	50U	50U	25U	150	25U	25U
BH4387	09/08/87	27.20 - 29.70	50U	50U	50U	50U	47B	130B	25U	25U
BH4387	09/08/87	29.70 - 32.00	50U	50U	50U	50U	210B	160B	25U	25U
BH4387	09/08/87	29.70 - 32.00	50U	50U	50U	50U	15J	180B	25U	25U
BH4587	08/31/87	25.00 - 27.50	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	08/31/87	27.50 - 30.00	50U	50U	50U	50U	25U	50U	25U	25U
BH4587	08/31/87	30.00 - 32.50	50U	50U	50U	50U	25U	50U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH4287	08/19/87	27.00 - 29.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/19/87	29.50 - 32.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/19/87	32.00 - 34.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/19/87	34.50 - 35.90	25U	NR	6J	25U	50U	25U	25U	50U
BH4287	08/19/87	37.00 - 39.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/20/87	39.50 - 40.40	25U	NR	25U	25U	50U	25U	25U	50U
BH4287	08/21/87	45.50 - 47.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	29.50 - 32.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4487	09/09/87	32.00 - 34.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	20.00 - 22.30	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	22.50 - 25.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	09/01/87	32.50 - 33.90	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	09/01/87	35.00 - 37.50	25U	NR	25U	25U	50U	25U	25U	50U
BH5187	09/22/87	17.00 - 19.50	25U	NR	25U	8J	50U	25U	25U	50U
BH5687	09/11/87	22.00 - 24.30	25U	NR	25U	25U	50U	25U	25U	50U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	25U	NR	25U	25U	72	25U	25U	50U
BH4087	08/13/87	9.50 - 12.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4187	08/17/87	17.00 - 19.50	25U	NR	7J	25U	50U	25U	25U	50U
BH4387	09/08/87	27.20 - 29.70	25U	NR	25U	25U	50U	25U	25U	50U
BH4387	09/08/87	29.70 - 32.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4387	09/08/87	29.70 - 32.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	25.00 - 27.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4587	08/31/87	27.50 - 30.00	25U	NR	25U	25U	50U	180	25U	50U
BH4587	08/31/87	30.00 - 32.50	25U	NR	25U	25U	50U	25U	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH4287	08/19/87	27.00 - 29.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/19/87	29.50 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/19/87	32.00 - 34.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/19/87	34.50 - 35.90	25U	25U	25U	11J	25U	25U	25U	25U
BH4287	08/19/87	37.00 - 39.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/20/87	39.50 - 40.40	25U	25U	25U	25U	25U	25U	25U	25U
BH4287	08/21/87	45.50 - 47.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	29.50 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4487	09/09/87	32.00 - 34.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	20.00 - 22.30	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	22.50 - 25.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	09/01/87	32.50 - 33.90	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	09/01/87	35.00 - 37.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5187	09/22/87	17.00 - 19.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5687	09/11/87	22.00 - 24.30	25U	25U	25U	25U	25U	25U	25U	25U

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BH3987	08/12/87	14.50 - 17.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4087	08/13/87	9.50 - 12.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4187	08/17/87	17.00 - 19.50	25U	25U	25U	34	25U	25U	25U	25U
BH4387	09/08/87	27.20 - 29.70	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	25.00 - 27.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	27.50 - 30.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4587	08/31/87	30.00 - 32.50	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH4287	08/19/87	27.00 - 29.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/19/87	29.50 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/19/87	32.00 - 34.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/19/87	34.50 - 35.90	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/19/87	37.00 - 39.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/20/87	39.50 - 40.40	25U	50U	50U	25U	25U	25U	25U	25U
BH4287	08/21/87	45.50 - 47.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	29.50 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4487	09/09/87	32.00 - 34.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	20.00 - 22.30	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	22.50 - 25.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	09/01/87	32.50 - 33.90	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	09/01/87	35.00 - 37.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5187	09/22/87	17.00 - 19.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5687	09/11/87	22.00 - 24.30	25U	50U	50U	25U	25U	25U	25U	25U

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BH3987	08/12/87	14.50 - 17.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4087	08/13/87	9.50 - 12.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4187	08/17/87	17.00 - 19.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/08/87	27.20 - 29.70	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	25.00 - 27.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	27.50 - 30.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4587	08/31/87	30.00 - 32.50	25U	50U	50U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH4287	08/19/87	27.00 - 29.50	25U	25U
BH4287	08/19/87	29.50 - 32.00	25U	25U
BH4287	08/19/87	32.00 - 34.50	25U	25U
BH4287	08/19/87	34.50 - 35.90	25U	25U
BH4287	08/19/87	37.00 - 39.50	25U	25U
BH4287	08/20/87	39.50 - 40.40	25U	25U
BH4287	08/21/87	45.50 - 47.00	25U	25U
BH4487	09/09/87	29.50 - 32.00	25U	25U
BH4487	09/09/87	32.00 - 34.50	25U	25U
BH4587	08/31/87	20.00 - 22.30	25U	25U
BH4587	08/31/87	22.50 - 25.00	25U	25U
BH4587	09/01/87	32.50 - 33.90	25U	25U
BH4587	09/01/87	35.00 - 37.50	25U	25U
BH5187	09/22/87	17.00 - 19.50	25U	25U
BH5687	09/11/87	22.00 - 24.30	25U	25U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	25U	25U
BH4087	08/13/87	9.50 - 12.00	25U	25U
BH4187	08/17/87	17.00 - 19.50	25U	25U
BH4387	09/08/87	27.20 - 29.70	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	25U
BH4387	09/08/87	29.70 - 32.00	25U	25U
BH4587	08/31/87	25.00 - 27.50	25U	25U
BH4587	08/31/87	27.50 - 30.00	25U	25U
BH4587	08/31/87	30.00 - 32.50	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chloro methane uG/kg	Bromo methane uG/kg	Vinyl Chloride uG/kg	Chloro ethane uG/kg	Methylene Chloride uG/kg	Acetone uG/kg	Carbon Disulfide uG/kg	1,1-Di-chloro ethene uG/kg
BH4687	09/03/87	27.00 - 29.50	50U	50U	50U	50U	25U	170B	25U	25U
BH4687	09/03/87	29.50 - 32.00	50U	50U	50U	50U	7J	270B	25U	25U
BH4787	09/15/87	26.20 - 27.20	50U	50U	50U	50U	12JB	190B	25U	25U
BH4787	09/15/87	26.20 - 27.20	50U	50U	50U	50U	8JB	480B	25U	25U
BH4787	09/15/87	27.20 - 28.20	50U	50U	50U	50U	6JB	770B	25U	25U
BH4887	09/17/87	13.20 - 15.11	50U	50U	50U	50U	25U	1200B	25U	25U
BH4887	09/17/87	15.20 - 16.70	50U	50U	50U	50U	25U	480B	25U	25U
BH4987	09/21/87	24.14 - 25.64	50U	50U	50U	50U	7JB	120B	25U	25U
BH5087	09/17/87	14.50 - 17.00	50U	50U	50U	50U	25U	1000B	25U	25U
BH5087	09/17/87	17.00 - 19.50	50U	50U	50U	50U	25U	510B	25U	25U
BH5287	09/22/87	22.00 - 24.00	50U	50U	50U	50U	6JB	80B	25U	25U
BH5287	09/22/87	24.00 - 25.00	50U	50U	50U	50U	15JB	94B	25U	25U
BH5387	09/14/87	22.60 - 24.00	50U	50U	50U	50U	9JB	2400B	25U	25U
BH5487	09/21/87	42.50 - 44.00	50U	50U	50U	50U	15JB	460B	25U	25U
BH5487	09/21/87	42.50 - 44.00	50U	50U	50U	50U	13JB	280B	25U	25U
BH5587	09/15/87	32.00 - 34.10	50U	50U	50U	50U	25U	620B	25U	25U
BH5587	09/15/87	32.00 - 34.10	50U	50U	50U	50U	8JB	380B	25U	25U
BH5587	09/15/87	34.50 - 36.60	50U	50U	50U	50U	8JB	300B	25U	25U
BH5787	10/07/87	12.00 - 14.00	50U	50U	50U	50U	20J	100B	25U	25U
BH5787	10/08/87	14.00 - 16.00	50U	50U	50U	50U	21JB	260B	25U	25U
BH5787	10/08/87	16.00 - 18.00	50U	50U	50U	50U	36B	200B	25U	25U
BH5787	10/08/87	18.00 - 20.00	50U	50U	50U	50U	25JB	220B	25U	25U
BH5787	10/08/87	20.00 - 22.00	50U	6J	50U	50U	25JB	210B	25U	25U
BH5787	10/08/87	22.00 - 24.00	50U	50U	50U	50U	26B	110B	25U	25U
BH5787	10/08/87	24.00 - 26.00	50U	50U	50U	50U	6JB	53B	25U	25U
BH5787	10/08/87	26.00 - 28.00	50U	50U	50U	50U	6JB	65B	25U	25U
BH5787	10/08/87	28.00 - 30.00	50U	50U	50U	50U	25U	38JB	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	1,1-Di-chloro ethane uG/kg	Total-1,2-Dichloro ethene uG/kg	Chloroform uG/kg	1,2-Di-chloro ethane uG/kg	2-Butanone uG/kg	1,1,1-Tri chloro ethane uG/kg	Carbon Tetra chloride uG/kg	Vinyl Acetate uG/kg
BH4687	09/03/87	27.00 - 29.50	25U	NR	25U	25U	50U	25U	25U	50U
BH4687	09/03/87	29.50 - 32.00	25U	NR	25U	25U	50U	25U	25U	50U
BH4787	09/15/87	26.20 - 27.20	25U	NR	25U	51	50U	25U	25U	50U
BH4787	09/15/87	26.20 - 27.20	25U	NR	25U	100	50U	25U	25U	50U
BH4787	09/15/87	27.20 - 28.20	25U	NR	25U	38	50U	25U	25U	50U
BH4887	09/17/87	13.20 - 15.11	25U	NR	25U	25U	50U	25U	25U	50U
BH4887	09/17/87	15.20 - 16.70	25U	NR	25U	25U	50U	25U	25U	50U
BH4987	09/21/87	24.14 - 25.64	25U	NR	25U	34	50U	25U	25U	50U
BH5087	09/17/87	14.50 - 17.00	25U	NR	25U	110	50U	25U	25U	50U
BH5087	09/17/87	17.00 - 19.50	25U	NR	25U	98	50U	25U	25U	50U
BH5287	09/22/87	22.00 - 24.00	25U	NR	25U	13J	50U	25U	25U	50U
BH5287	09/22/87	24.00 - 25.00	25U	NR	25U	26	50U	25U	25U	50U
BH5387	09/14/87	22.60 - 24.00	25U	NR	25U	16J	50U	25U	25U	50U
BH5487	09/21/87	42.50 - 44.00	25U	NR	25U	20J	50U	25U	25U	50U
BH5487	09/21/87	42.50 - 44.00	25U	NR	25U	11J	50U	25U	25U	50U
BH5587	09/15/87	32.00 - 34.10	25U	NR	25U	66	50U	25U	25U	50U
BH5587	09/15/87	32.00 - 34.10	25U	NR	25U	78	50U	25U	25U	50U
BH5587	09/15/87	34.50 - 36.60	25U	NR	25U	56	50U	25U	25U	50U
BH5787	10/07/87	12.00 - 14.00	25U	NR	25U	10J	50U	110	25U	50U
BH5787	10/08/87	14.00 - 16.00	25U	NR	25U	5J	100	28	25U	50U
BH5787	10/08/87	16.00 - 18.00	25U	NR	25U	25U	46J	10J	25U	50U
BH5787	10/08/87	18.00 - 20.00	25U	NR	25U	25U	50U	110	25U	50U
BH5787	10/08/87	20.00 - 22.00	25U	NR	25U	25U	62	25U	25U	50U
BH5787	10/08/87	22.00 - 24.00	25U	NR	25U	25U	50U	13J	25U	50U
BH5787	10/08/87	24.00 - 26.00	25U	NR	25U	25U	50U	25U	25U	50U
BH5787	10/08/87	26.00 - 28.00	25U	NR	25U	25U	50U	11J	25U	50U
BH5787	10/08/87	28.00 - 30.00	25U	NR	25U	25U	50U	25U	25U	50U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromo dichloro methane uG/kg	1,2-Di-chloro propane uG/kg	Cis-1,3-Dichloro propene uG/kg	Trichloro ethene uG/kg	Dibromo chloro methane uG/kg	1,1,2-Tri chloro ethane uG/kg	Benzene uG/kg	Trans-1,3-Dichloro propene uG/kg
BH4687	09/03/87	27.00 - 29.50	25U	25U	25U	25U	25U	25U	25U	25U
BH4687	09/03/87	29.50 - 32.00	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	25U	25U	25U	25U	25U	25U	25U
BH4787	09/15/87	27.20 - 28.20	25U	25U	25U	25U	25U	25U	25U	25U
BH4887	09/17/87	13.20 - 15.11	25U	25U	25U	25U	25U	25U	25U	25U
BH4887	09/17/87	15.20 - 16.70	25U	25U	25U	25U	25U	25U	25U	25U
BH4987	09/21/87	24.14 - 25.64	25U	25U	25U	25U	25U	25U	25U	25U
BH5087	09/17/87	14.50 - 17.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5087	09/17/87	17.00 - 19.50	25U	25U	25U	25U	25U	25U	25U	25U
BH5287	09/22/87	22.00 - 24.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5287	09/22/87	24.00 - 25.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5387	09/14/87	22.60 - 24.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	25U	25U	25U	25U	25U	25U	25U
BH5587	09/15/87	34.50 - 36.60	25U	25U	25U	25U	25U	25U	25U	25U
BH5787	10/07/87	12.00 - 14.00	25U	25U	25U	150	25U	27	25U	25U
BH5787	10/08/87	14.00 - 16.00	25U	25U	25U	7J	25U	8J	25U	25U
BH5787	10/08/87	16.00 - 18.00	25U	25U	25U	10J	25U	25U	25U	25U
BH5787	10/08/87	18.00 - 20.00	25U	25U	25U	7J	25U	25U	25U	25U
BH5787	10/08/87	20.00 - 22.00	25U	25U	25U	8J	25U	25U	25U	25U
BH5787	10/08/87	22.00 - 24.00	25U	25U	25U	21J	25U	25U	25U	25U
BH5787	10/08/87	24.00 - 26.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5787	10/08/87	26.00 - 28.00	25U	25U	25U	25U	25U	25U	25U	25U
BH5787	10/08/87	28.00 - 30.00	25U	25U	25U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Bromoform uG/kg	4-Methyl-2-pentanone uG/kg	2-Hexanone uG/kg	Tetrachloroethene uG/kg	1,1,2,2-Tetrachloroethane uG/kg	Toluene uG/kg	Chlorobenzene uG/kg	Ethylbenzene uG/kg
BH4687	09/03/87	27.00 - 29.50	25U	50U	50U	25U	25U	25U	25U	25U
BH4687	09/03/87	29.50 - 32.00	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	50U	50U	25U	25U	25U	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	50U	50U	25U	25U	21J	25U	25U
BH4787	09/15/87	27.20 - 28.20	25U	50U	50U	25U	25U	25U	25U	25U
BH4887	09/17/87	13.20 - 15.11	25U	50U	50U	25U	25U	25U	25U	25U
BH4887	09/17/87	15.20 - 16.70	25U	50U	50U	25U	25U	25U	25U	25U
BH4987	09/21/87	24.14 - 25.64	25U	50U	50U	25U	25U	25U	25U	25U
BH5087	09/17/87	14.50 - 17.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5087	09/17/87	17.00 - 19.50	25U	50U	50U	25U	25U	25U	25U	25U
BH5287	09/22/87	22.00 - 24.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5287	09/22/87	24.00 - 25.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5387	09/14/87	22.60 - 24.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	50U	50U	25U	25U	25U	25U	25U
BH5587	09/15/87	34.50 - 36.60	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/07/87	12.00 - 14.00	25U	50U	50U	62	25U	25	25U	25U
BH5787	10/08/87	14.00 - 16.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	16.00 - 18.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	18.00 - 20.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	20.00 - 22.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	22.00 - 24.00	25U	50U	50U	5J	25U	25U	25U	25U
BH5787	10/08/87	24.00 - 26.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	26.00 - 28.00	25U	50U	50U	25U	25U	25U	25U	25U
BH5787	10/08/87	28.00 - 30.00	25U	50U	50U	25U	25U	25U	25U	25U

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Operable Unit No. 2

Volatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Styrene uG/kg	Total Xylenes uG/kg
BH4687	09/03/87	27.00 - 29.50	25U	25U
BH4687	09/03/87	29.50 - 32.00	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	25U
BH4787	09/15/87	26.20 - 27.20	25U	25U
BH4787	09/15/87	27.20 - 28.20	25U	25U
BH4887	09/17/87	13.20 - 15.11	25U	25U
BH4887	09/17/87	15.20 - 16.70	25U	25U
BH4987	09/21/87	24.14 - 25.64	25U	25U
BH5087	09/17/87	14.50 - 17.00	25U	25U
BH5087	09/17/87	17.00 - 19.50	25U	25U
BH5287	09/22/87	22.00 - 24.00	25U	25U
BH5287	09/22/87	24.00 - 25.00	25U	25U
BH5387	09/14/87	22.60 - 24.00	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	25U
BH5487	09/21/87	42.50 - 44.00	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	25U
BH5587	09/15/87	32.00 - 34.10	25U	25U
BH5587	09/15/87	34.50 - 36.60	25U	25U
BH5787	10/07/87	12.00 - 14.00	25U	25U
BH5787	10/08/87	14.00 - 16.00	25U	25U
BH5787	10/08/87	16.00 - 18.00	25U	25U
BH5787	10/08/87	18.00 - 20.00	25U	25U
BH5787	10/08/87	20.00 - 22.00	25U	25U
BH5787	10/08/87	22.00 - 24.00	25U	25U
BH5787	10/08/87	24.00 - 26.00	25U	25U
BH5787	10/08/87	26.00 - 28.00	25U	25U
BH5787	10/08/87	28.00 - 30.00	25U	25U

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APPENDIX A-2

SEMI-VOLATILE ORGANIC COMPOUNDS (BASE/NEUTRAL/ACIDS)

SOIL SAMPLING RESULTS

Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	9.70 - 10.60	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	10.60 - 18.40	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	0.00 - 10.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	9.70 - 12.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	0.00 - 9.00	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	11.50 - 17.15	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	20.00 - 20.80	330U	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	330U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	330U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	4.80 - 10.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.00 - 0.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.90 - 3.75	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	3.75 - 4.85	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	9.70 - 10.60	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	10.60 - 18.40	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	0.00 - 10.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	9.70 - 12.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	0.00 - 9.00	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	11.50 - 17.15	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	20.00 - 20.80	330U	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	380 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	330U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	330U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	4.80 - 10.00	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.00 - 0.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.90 - 3.75	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	3.75 - 4.85	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH2287	07/09/87	0.00 - 9.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	0.00 - 9.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	9.70 - 10.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	10.60 - 18.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	0.00 - 10.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	9.70 - 12.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	0.00 - 9.00	1700 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	1600U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	11.50 - 17.15	1600U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	20.00 - 20.80	1600U	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	1800 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	1600U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	4.80 - 10.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.00 - 0.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.90 - 3.75	1600U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	3.75 - 4.85	1600U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2287	07/09/87	9.70 - 10.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2287	07/09/87	10.60 - 18.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2987	06/12/87	0.00 - 10.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2987	06/12/87	9.70 - 12.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3087	06/16/87	0.00 - 9.00	360 U	360 U	3360 U	1700 U	360 U	1700 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3087	06/16/87	11.50 - 17.15	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3087	06/16/87	20.00 - 20.80	330U	330U	330U	1600U	330U	1600U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	380 U	380 U	380 U	1800 U	380 U	1800 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2587	06/18/87	0.00 - 9.00	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2787	07/06/87	4.80 - 10.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2887	07/13/87	0.00 - 0.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2887	07/13/87	0.90 - 3.75	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2887	07/13/87	3.75 - 4.85	330U	330U	330U	1600U	330U	1600U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH2287	07/09/87	0.00 - 9.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2287	07/09/87	0.00 - 9.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2287	07/09/87	9.70 - 10.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2287	07/09/87	10.60 - 18.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2987	06/12/87	0.00 - 10.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2987	06/12/87	9.70 - 12.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3087	06/16/87	0.00 - 9.00	1700 U	360 U	1700 U	1700 U	360 U	360 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3087	06/16/87	11.50 - 17.15	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3087	06/16/87	20.00 - 20.80	1600U	330U	1600U	1600U	330U	330U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	1800 U	380 U	1800 U	1800 U	380 U	380 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2787	07/06/87	4.80 - 10.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2887	07/13/87	0.00 - 0.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2887	07/13/87	0.90 - 3.75	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2887	07/13/87	3.75 - 4.85	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH2287	07/09/87	0.00 - 9.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2287	07/09/87	0.00 - 9.30	330U	330U	1600U	1600U	35J	330U	330U	1600U
BH2287	07/09/87	9.70 - 10.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2287	07/09/87	10.60 - 18.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2387	07/07/87	0.00 - 7.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2387	07/07/87	0.00 - 7.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2987	06/12/87	0.00 - 10.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2987	06/12/87	9.70 - 12.70	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3087	06/16/87	0.00 - 9.00	360 U	360 U	1700 U	1700 U	360 U	360 U	360 U	1700 U
BH3087	06/16/87	9.00 - 10.35	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3087	06/16/87	11.50 - 17.15	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3087	06/16/87	20.00 - 20.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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BH2487	07/08/87	0.00 - 2.43	380 U	380 U	1800 U	1800 U	380 U	380 U	380 U	1800 U
BH2487	07/08/87	2.43 - 4.85	330U	330U	1600U	1600U	36J	330U	330U	1600U
BH2587	06/18/87	0.00 - 9.00	330U	330U	1600U	1600U	1600U	1600U	330U	1600U
BH2587	06/18/87	0.00 - 9.00	330 U	330 U	1600 U	1600 U	1600 U	330 U	330 U	1600 U
BH2587	06/18/87	8.40 - 8.85	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2587	06/18/87	9.50 - 10.40	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2587	06/18/87	14.50 - 15.70	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2687	07/16/87	2.15 - 2.95	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2787	07/06/87	0.00 - 4.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2787	07/06/87	4.80 - 10.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2887	07/13/87	0.00 - 0.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2887	07/13/87	0.90 - 3.75	330U	330U	1600U	1600U	51J	330U	330U	1600U
BH2887	07/13/87	3.75 - 4.85	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH2287	07/09/87	0.00 - 9.30	330U	330U	91J	330U	330U	330U	660U	330U
BH2287	07/09/87	0.00 - 9.30	330U	330U	330U	330U	330U	330U	660U	330U
BH2287	07/09/87	9.70 - 10.60	330U	330U	97J	330U	330U	330U	660U	330U
BH2287	07/09/87	10.60 - 18.40	330U	330U	330U	330U	330U	330U	660U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	660U	330U
BH2387	07/07/87	0.00 - 7.50	330U	330U	330U	330U	330U	330U	660U	330U
BH2987	06/12/87	0.00 - 10.00	330U	330U	330U	330U	330U	330U	660U	330U
BH2987	06/12/87	9.70 - 12.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3087	06/16/87	0.00 - 9.00	360 U	360 U	3400	360 U	360 U	360 U	720 U	360 U
BH3087	06/16/87	9.00 - 10.35	330U	330U	330U	330U	330U	330U	660U	330U
BH3087	06/16/87	11.50 - 17.15	330U	330U	330U	330U	330U	330U	660U	330U
BH3087	06/16/87	20.00 - 20.80	330U	330U	330U	330U	330U	330U	660U	330U

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BH2487	07/08/87	0.00 - 2.43	380 U	380 U	690 B	380 U	380 U	380 U	750 U	380 U
BH2487	07/08/87	2.43 - 4.85	330U	330U	65J	330U	330U	330U	660U	330U
BH2587	06/18/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	660U	330U
BH2587	06/18/87	0.00 - 9.00	330 U	330 U	330 U	330 U	330 U	330 U	660 U	330 U
BH2587	06/18/87	8.40 - 8.85	330 U	330 U	330 U	330 U	330 U	330 U	650 U	330 U
BH2587	06/18/87	9.50 - 10.40	330 U	330 U	63 J	330 U	330 U	330 U	650 U	330 U
BH2587	06/18/87	14.50 - 15.70	330 U	330 U	330 U	330 U	330 U	330 U	660 U	330 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	330 U	330 U	330 U	330 U	660 U	330 U
BH2687	07/16/87	2.15 - 2.95	330 U	330 U	150 J	330 U	330 U	330 U	660 U	330 U
BH2787	07/06/87	0.00 - 4.80	330U	330U	330U	330U	330U	330U	660U	330U
BH2787	07/06/87	4.80 - 10.00	330U	330U	330U	330U	330U	330U	660U	330U
BH2887	07/13/87	0.00 - 0.90	330U	330U	58J	330U	330U	330U	660U	330U
BH2887	07/13/87	0.90 - 3.75	330U	330U	82J	330U	330U	330U	660U	330U
BH2887	07/13/87	3.75 - 4.85	330U	330U	61J	330U	330U	330U	660U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH2287	07/09/87	0.00 - 9.30	820	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	0.00 - 9.30	650	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	9.70 - 10.60	540	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	10.60 - 18.40	600	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	1600	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	0.00 - 7.50	2300	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	0.00 - 10.00	840B	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	9.70 - 12.70	470B	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	0.00 - 9.00	8100	360 U	360 U	360 U	360 U	360 U	360 U	360 U
BH3087	06/16/87	9.00 - 10.35	1500B	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	11.50 - 17.15	1200B	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	20.00 - 20.80	2100B	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	3300 B	380 U	380 U	380 U	380 U	380 U	380 U	380 U
BH2487	07/08/87	2.43 - 4.85	1200	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1100B	330U	330U	330U	330U	330U	330U	330U
BH2587	06/18/87	0.00 - 9.00	1900 B	330 U	260 J	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	8.40 - 8.85	810 B	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	9.50 - 10.40	990 B	330 U	75 J	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	14.50 - 15.70	870 B	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	0.30 - 2.50	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	2.15 - 2.95	4200 J	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2787	07/06/87	0.00 - 4.80	230J	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	4.80 - 10.00	340	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.00 - 0.90	1400	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	0.90 - 3.75	3400	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	3.75 - 4.85	970	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH2287	07/09/87	0.00 - 9.30	330U
BH2287	07/09/87	0.00 - 9.30	330U
BH2287	07/09/87	9.70 - 10.60	330U
BH2287	07/09/87	10.60 - 18.40	330U
BH2387	07/07/87	0.00 - 7.50	330U
BH2387	07/07/87	0.00 - 7.50	330U
BH2987	06/12/87	0.00 - 10.00	330U
BH2987	06/12/87	9.70 - 12.70	330U
BH3087	06/16/87	0.00 - 9.00	360 U
BH3087	06/16/87	9.00 - 10.35	330U
BH3087	06/16/87	11.50 - 17.15	330U
BH3087	06/16/87	20.00 - 20.80	330U

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BH2487	07/08/87	0.00 - 2.43	380 U
BH2487	07/08/87	2.43 - 4.85	330U
BH2587	06/18/87	0.00 - 9.00	330U
BH2587	06/18/87	0.00 - 9.00	330 U
BH2587	06/18/87	8.40 - 8.85	330 U
BH2587	06/18/87	9.50 - 10.40	330 U
BH2587	06/18/87	14.50 - 15.70	330 U
BH2687	07/16/87	0.30 - 2.50	330 U
BH2687	07/16/87	2.15 - 2.95	330 U
BH2787	07/06/87	0.00 - 4.80	330U
BH2787	07/06/87	4.80 - 10.00	330U
BH2887	07/13/87	0.00 - 0.90	330U
BH2887	07/13/87	0.90 - 3.75	330U
BH2887	07/13/87	3.75 - 4.85	330U

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Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH2887	07/13/87	4.85 - 5.90	330U	330U	330U	330U	330U	330U	330U	330U

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BH2987	06/12/87	15.70 - 16.80	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	17.50 - 18.50	330U	330U	330U	330U	330U	330U	330U	330U

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BH2287	07/09/87	18.40 - 20.60	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	22.20 - 23.35	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	7.20 - 8.20	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	11.20 - 11.85	330U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	10.00 - 10.90	410 U	410 U	410 U	410 U	410 U	410 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	13.00 - 14.40	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	24.50 - 25.20	330U	330U	330U	330U	330U	330U	330U	330U

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BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH2887	07/13/87	4.85 - 5.90	330U	330U	330U	330U	330U	330U	330U	330U

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BH2987	06/12/87	15.70 - 16.80	330U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	17.50 - 18.50	330U	330U	330U	330U	330U	330U	330U	330U

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BH2287	07/09/87	18.40 - 20.60	330U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	22.20 - 23.35	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	7.20 - 8.20	330U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	11.20 - 11.85	330U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	10.00 - 10.90	410 U	410 U	410 U	410 U	410 U	410 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	330U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	13.00 - 14.40	330U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	24.50 - 25.20	330U	330U	330U	330U	330U	330U	330U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH2887	07/13/87	4.85 - 5.90	1600U	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	17.50 - 18.50	1600U	330U	330U	330U	330U	330U	330U	330U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	22.20 - 23.35	1600U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	7.20 - 8.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	11.20 - 11.85	1600U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	10.00 - 10.90	2000 U	410 U	410 U	410 U	410 U	410 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH2787	07/06/87	13.00 - 14.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	24.50 - 25.20	1600U	330U	330U	330U	330U	330U	330U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	1600U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH2887	07/13/87	4.85 - 5.90	330U	330U	330U	1600U	330U	1600U	330U	330U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2987	06/12/87	17.50 - 18.50	330U	330U	330U	1600U	330U	1600U	330U	330U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2287	07/09/87	22.20 - 23.35	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2387	07/07/87	7.20 - 8.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2387	07/07/87	11.20 - 11.85	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2487	07/08/87	10.00 - 10.90	410 U	410 U	410 U	2000 U	410 U	2000 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2787	07/06/87	13.00 - 14.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3087	06/16/87	24.50 - 25.20	330U	330U	330U	1600U	330U	1600U	330U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	1600U	330U	1600U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH2887	07/13/87	4.85 - 5.90	1600U	330U	1600U	1600U	330U	330U	330U	330U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2987	06/12/87	17.50 - 18.50	1600U	330U	1600U	1600U	330U	330U	330U	330U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2287	07/09/87	22.20 - 23.35	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2387	07/07/87	7.20 - 8.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2387	07/07/87	11.20 - 11.85	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2487	07/08/87	10.00 - 10.90	2000 U	410 U	2000 U	2000 U	410 U	410 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2787	07/06/87	13.00 - 14.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3087	06/16/87	24.50 - 25.20	1600U	330U	1600U	1600U	330U	330U	330U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH2887	07/13/87	4.85 - 5.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2987	06/12/87	17.50 - 18.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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BH2287	07/09/87	18.40 - 20.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2287	07/09/87	22.20 - 23.35	330U	330U	1600U	1600U	89J	330U	330U	1600U
BH2387	07/07/87	7.20 - 8.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2387	07/07/87	11.20 - 11.85	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2487	07/08/87	10.00 - 10.90	410 U	410 U	2000 U	2000 U	410 U	410 U	410 U	2000 U
BH2587	06/18/87	18.50 - 19.30	330 U	330 U	1600 U	1600 U	1600 U	330 U	330 U	1600 U
BH2587	06/18/87	19.70 - 20.50	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH2687	07/16/87	6.00 - 6.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2787	07/06/87	13.00 - 14.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3087	06/16/87	24.50 - 25.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	330U	330U	1600U	1600U	41J	330U	330U	1600U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH2887	07/13/87	4.85 - 5.90	330U	330U	42J	330U	330U	330U	660U	330U

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BH2987	06/12/87	15.70 - 16.80	330U	330U	330U	330U	330U	330U	660U	330U
BH2987	06/12/87	17.50 - 18.50	330U	330U	330U	330U	330U	330U	660U	330U

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BH2287	07/09/87	18.40 - 20.60	330U	330U	36J	330U	330U	330U	660U	330U
BH2287	07/09/87	22.20 - 23.35	330U	330U	330U	330U	330U	330U	660U	330U
BH2387	07/07/87	7.20 - 8.20	330U	330U	330U	330U	330U	330U	660U	330U
BH2387	07/07/87	11.20 - 11.85	330U	330U	330U	330U	330U	330U	660U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	330U	330U	330U	330U	330U	330U	660U	330U
BH2487	07/08/87	10.00 - 10.90	410 U	410 U	640 B	410 U	410 U	410 U	810 U	410 U
BH2587	06/18/87	18.50 - 19.30	330 U	330 U	330 U	330 U	330 U	330 U	668 U	330 U
BH2587	06/18/87	19.70 - 20.50	330 U	330 U	330 U	330 U	330 U	330 U	660 U	330 U
BH2687	07/16/87	6.00 - 6.90	330U	330U	330U	330U	330U	330U	660U	330U
BH2787	07/06/87	13.00 - 14.40	330U	330U	330U	330U	330U	330U	660U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	330U	330U	59J	330U	330U	330U	660U	330U
BH3087	06/16/87	24.50 - 25.20	330U	330U	330U	330U	330U	330U	660U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	660U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH2887	07/13/87	4.85 - 5.90	1600	330U	330U	330U	330U	330U	330U	330U

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BH2987	06/12/87	15.70 - 16.80	18000B	330U	330U	330U	330U	330U	330U	330U
BH2987	06/12/87	17.50 - 18.50	910B	330U	330U	330U	330U	330U	330U	330U

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BH2287	07/09/87	18.40 - 20.60	540	330U	330U	330U	330U	330U	330U	330U
BH2287	07/09/87	22.20 - 23.35	1600	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	7.20 - 8.20	3300	330U	330U	330U	330U	330U	330U	330U
BH2387	07/07/87	11.20 - 11.85	2700	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	890	330U	330U	330U	330U	330U	330U	330U
BH2487	07/08/87	10.00 - 10.90	2600 B	410 U	410 U	410 U	410 U	410 U	410 U	410 U
BH2587	06/18/87	18.50 - 19.30	930 B	330 U	56 J	330 U	330 U	330 U	330 U	330 U
BH2587	06/18/87	19.70 - 20.50	870 B	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH2687	07/16/87	6.00 - 6.90	800	330U	160J	330U	330U	330U	330U	330U
BH2787	07/06/87	13.00 - 14.40	220J	330U	330U	330U	330U	330U	330U	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	2100	330U	330U	330U	330U	330U	330U	330U
BH3087	06/16/87	24.50 - 25.20	1800B	330U	330U	330U	330U	330U	330U	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	580	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH2887	07/13/87	4.85 - 5.90	330U

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BH2987	06/12/87	15.70 - 16.80	330U
BH2987	06/12/87	17.50 - 18.50	330U

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BH2287	07/09/87	18.40 - 20.60	330U
BH2287	07/09/87	22.20 - 23.35	330U
BH2387	07/07/87	7.20 - 8.20	330U
BH2387	07/07/87	11.20 - 11.85	330U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH2487	07/08/87	8.30 - 8.90	330U
BH2487	07/08/87	10.00 - 10.90	410 U
BH2587	06/18/87	18.50 - 19.30	330 U
BH2587	06/18/87	19.70 - 20.50	330 U
BH2687	07/16/87	6.00 - 6.90	330U
BH2787	07/06/87	13.00 - 14.40	330U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH2887	07/13/87	11.00 - 12.00	330U
BH3087	06/16/87	24.50 - 25.20	330U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3187	08/04/87	11.70 - 12.60	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	15.10 - 16.20	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	0.00 - 4.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	14.70 - 15.90	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	6.60 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	14.70 - 16.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	17.00 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	12.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	14.10 - 15.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	4.60 - 5.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	5.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	17.70 - 20.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	9.50 - 10.85	330U	330U	330U	330U	330U	330U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3187	08/04/87	11.70 - 12.60	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	15.10 - 16.20	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	0.00 - 4.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	14.70 - 15.90	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	6.60 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	14.70 - 16.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	17.00 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	12.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	14.10 - 15.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	4.60 - 5.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	5.00 - 15.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	17.70 - 20.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	330U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	9.50 - 10.85	330U	330U	330U	330U	330U	330U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH3187	08/04/87	0.00 - 11.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3187	08/04/87	11.70 - 12.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	0.00 - 8.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	15.10 - 16.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	0.00 - 4.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	14.70 - 15.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	0.00 - 8.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	6.60 - 8.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	14.70 - 16.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	17.00 - 18.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	12.00 - 15.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	14.10 - 15.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	4.60 - 5.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	5.00 - 15.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	17.70 - 20.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/16/87	0.00 - 5.00	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	1600 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	0.00 - 9.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	9.50 - 10.85	1600U	330U	330U	330U	330U	330U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3187	08/04/87	11.70 - 12.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3287	08/03/87	0.00 - 8.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3287	08/03/87	15.10 - 16.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3387	07/30/87	0.00 - 4.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3387	07/30/87	14.70 - 15.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	0.00 - 8.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	6.60 - 8.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	14.70 - 16.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	17.00 - 18.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3587	07/28/87	12.00 - 15.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3587	07/28/87	14.10 - 15.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	4.60 - 5.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	5.00 - 15.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	17.70 - 20.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	330 U	1600 U	330 U	1600 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3887	07/14/87	0.00 - 9.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3887	07/14/87	9.50 - 10.85	330U	330U	330U	1600U	330U	1600U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH3187	08/04/87	0.00 - 11.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3187	08/04/87	11.70 - 12.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3287	08/03/87	0.00 - 8.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3287	08/03/87	15.10 - 16.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3387	07/30/87	0.00 - 4.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3387	07/30/87	14.70 - 15.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	0.00 - 8.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	6.60 - 8.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	14.70 - 16.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	17.00 - 18.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3587	07/28/87	12.00 - 15.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3587	07/28/87	14.10 - 15.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	4.60 - 5.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	5.00 - 15.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	17.70 - 20.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3787	07/16/87	0.00 - 5.00	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	1600 U	330 U	1600 U	1600 U	330 U	330 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3887	07/14/87	0.00 - 9.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3887	07/14/87	9.50 - 10.85	1600U	330U	1600U	1600U	330U	330U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH3187	08/04/87	0.00 - 11.70	330U	330U	1600U	1600U	37J	330U	330U	1600U
BH3187	08/04/87	11.70 - 12.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3287	08/03/87	0.00 - 8.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3287	08/03/87	8.00 - 15.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3287	08/03/87	8.00 - 15.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3287	08/03/87	15.10 - 16.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3387	07/30/87	0.00 - 4.00	330U	330U	1600U	1600U	37J	330U	330U	1600U
BH3387	07/30/87	7.80 - 14.70	330U	330U	1600U	1600U	41J	330U	330U	1600U
BH3387	07/30/87	7.80 - 14.70	330U	330U	1600U	1600U	40J	330U	330U	1600U
BH3387	07/30/87	14.70 - 15.90	330U	330U	1600U	1600U	37J	330U	330U	1600U
BH3487	07/29/87	0.00 - 8.00	330U	330U	1600U	1600U	42J	330U	330U	1600U
BH3487	07/29/87	6.60 - 8.00	330U	330U	1600U	1600U	47J	330U	330U	1600U
BH3487	07/29/87	8.00 - 14.70	330U	330U	1600U	1600U	43J	330U	330U	1600U
BH3487	07/29/87	8.00 - 14.70	330U	330U	1600U	1600U	44J	330U	330U	1600U
BH3487	07/29/87	14.70 - 16.30	330U	330U	1600U	1600U	45J	330U	330U	1600U
BH3487	07/29/87	17.00 - 18.00	330U	330U	1600U	1600U	33J	330U	330U	1600U
BH3587	07/27/87	0.00 - 12.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3587	07/27/87	0.00 - 12.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3587	07/28/87	12.00 - 15.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3587	07/28/87	14.10 - 15.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	0.00 - 5.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	0.00 - 5.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	4.60 - 5.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	5.00 - 15.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	17.70 - 20.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	1600 U	1600 U	330 U	330 U	330 U	1600 U
BH3787	07/17/87	11.00 - 12.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3887	07/14/87	0.00 - 9.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3887	07/14/87	9.50 - 10.85	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH3187	08/04/87	0.00 - 11.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3187	08/04/87	11.70 - 12.60	330U	330U	330U	330U	330U	330U	660U	330U
BH3287	08/03/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3287	08/03/87	8.00 - 15.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3287	08/03/87	15.10 - 16.20	330U	330U	330U	330U	330U	330U	660U	330U
BH3387	07/30/87	0.00 - 4.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3387	07/30/87	7.80 - 14.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3387	07/30/87	14.70 - 15.90	330U	330U	330U	330U	330U	330U	660U	330U
BH3487	07/29/87	0.00 - 8.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3487	07/29/87	6.60 - 8.00	330U	330U	42J	330U	330U	330U	660U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3487	07/29/87	8.00 - 14.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3487	07/29/87	14.70 - 16.30	330U	330U	50J	330U	330U	330U	660U	330U
BH3487	07/29/87	17.00 - 18.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	92J	330U	330U	330U	660U	330U
BH3587	07/27/87	0.00 - 12.30	330U	330U	330U	330U	330U	330U	660U	330U
BH3587	07/28/87	12.00 - 15.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3587	07/28/87	14.10 - 15.40	330U	330U	330U	330U	330U	330U	660U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	42J	37J	330U	330U	660U	330U
BH3687	07/20/87	0.00 - 5.00	330U	330U	46J	330U	330U	330U	660U	330U
BH3687	07/20/87	4.60 - 5.50	330U	330U	330U	330U	330U	330U	660U	330U
BH3687	07/20/87	5.00 - 15.00	330U	330U	83J	330U	330U	330U	660U	330U
BH3687	07/20/87	17.70 - 20.40	330U	330U	40J	330U	330U	330U	660U	330U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	160 J	330 U	330 U	330 U	660 U	330 U
BH3787	07/16/87	0.00 - 5.00	330 U	330 U	170 J	110 J	330 U	330 U	660 U	330 U
BH3787	07/17/87	11.00 - 12.30	330U	330U	330U	330U	330U	330U	660U	330U
BH3887	07/14/87	0.00 - 9.50	330U	330U	41J	330U	330U	330U	660U	330U
BH3887	07/14/87	9.50 - 10.85	330U	330U	73J	330U	330U	330U	660U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH3187	08/04/87	0.00 - 11.70	490	330U	330U	330U	330U	330U	330U	330U
BH3187	08/04/87	11.70 - 12.60	470	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	0.00 - 8.00	310J	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	310J	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	8.00 - 15.00	260J	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	15.10 - 16.20	270J	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	0.00 - 4.00	270J	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	370	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	7.80 - 14.70	530	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	14.70 - 15.90	160J	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	0.00 - 8.00	450	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	6.60 - 8.00	430	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	250J	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	8.00 - 14.70	220J	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	14.70 - 16.30	310J	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	17.00 - 18.00	250J	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	500	330U	330U	330U	330U	330U	330U	330U
BH3587	07/27/87	0.00 - 12.30	680	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	12.00 - 15.00	220J	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	14.10 - 15.40	360	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	340	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	0.00 - 5.00	330	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	4.60 - 5.50	290J	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	5.00 - 15.00	480	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	17.70 - 20.40	260J	330U	330U	330U	330U	330U	330U	330U
BH3787	07/16/87	0.00 - 5.00	8700 B	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/16/87	0.00 - 5.00	4900 B	330 U	330 U	330 U	330 U	330 U	330 U	330 U
BH3787	07/17/87	11.00 - 12.30	280 J	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	0.00 - 9.50	4600	330U	330U	330U	330U	330U	330U	330U
BH3887	07/14/87	9.50 - 10.85	2500	330U	330U	330U	330U	330U	330U	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH3187	08/04/87	0.00 - 11.70	330U
BH3187	08/04/87	11.70 - 12.60	330U
BH3287	08/03/87	0.00 - 8.00	330U
BH3287	08/03/87	8.00 - 15.00	330U
BH3287	08/03/87	8.00 - 15.00	330U
BH3287	08/03/87	15.10 - 16.20	330U
BH3387	07/30/87	0.00 - 4.00	330U
BH3387	07/30/87	7.80 - 14.70	330U
BH3387	07/30/87	7.80 - 14.70	330U
BH3387	07/30/87	14.70 - 15.90	330U
BH3487	07/29/87	0.00 - 8.00	330U
BH3487	07/29/87	6.60 - 8.00	330U
BH3487	07/29/87	8.00 - 14.70	330U
BH3487	07/29/87	8.00 - 14.70	330U
BH3487	07/29/87	14.70 - 16.30	330U
BH3487	07/29/87	17.00 - 18.00	330U
BH3587	07/27/87	0.00 - 12.30	330U
BH3587	07/27/87	0.00 - 12.30	330U
BH3587	07/28/87	12.00 - 15.00	330U
BH3587	07/28/87	14.10 - 15.40	330U
BH3687	07/20/87	0.00 - 5.00	330U
BH3687	07/20/87	0.00 - 5.00	330U
BH3687	07/20/87	4.60 - 5.50	330U
BH3687	07/20/87	5.00 - 15.00	330U
BH3687	07/20/87	17.70 - 20.40	330U
BH3787	07/16/87	0.00 - 5.00	330 U
BH3787	07/16/87	0.00 - 5.00	330 U
BH3787	07/17/87	11.00 - 12.30	330U
BH3887	07/14/87	0.00 - 9.50	330U
BH3887	07/14/87	9.50 - 10.85	330U

Mound Area Sandstone

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH3387	07/30/87	18.90 - 19.80	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	19.50 - 20.80	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	21.00 - 22.10	330U	330U	330U	330U	330U	330U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	17.20 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	18.40 - 19.45	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	23.40 - 24.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	18.00 - 21.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	25.00 - 26.20	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	2.00 - 3.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	4.00 - 5.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	7.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	4.00 - 6.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	7.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 10.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 12.00	30U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH3387	07/30/87	18.90 - 19.80	330U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	19.50 - 20.80	330U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	21.00 - 22.10	330U	330U	330U	330U	330U	330U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	17.20 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	18.40 - 19.45	330U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	23.40 - 24.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	18.00 - 21.70	330U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	25.00 - 26.20	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	2.00 - 3.40	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	4.00 - 5.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	7.00 - 8.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	4.00 - 6.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	7.00 - 9.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 10.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH3387	07/30/87	18.90 - 19.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	19.50 - 20.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	21.00 - 22.10	1600U	330U	330U	330U	330U	330U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	1600U	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	17.20 - 18.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	18.40 - 19.45	1600U	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	23.40 - 24.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	18.00 - 21.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	25.00 - 26.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	14.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	2.00 - 3.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	4.00 - 5.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	7.00 - 8.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	9.50 - 12.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	12.00 - 14.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	4.00 - 6.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	7.00 - 9.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 10.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 12.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH3387	07/30/87	18.90 - 19.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3387	07/30/87	19.50 - 20.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3487	07/29/87	21.00 - 22.10	330U	330U	330U	1600U	330U	1600U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3287	08/03/87	17.20 - 18.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3587	07/28/87	18.40 - 19.45	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3687	07/20/87	23.40 - 24.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3787	07/17/87	18.00 - 21.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3787	07/17/87	25.00 - 26.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	2.00 - 3.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	4.00 - 5.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	7.00 - 8.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	9.50 - 12.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	12.00 - 14.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4087	08/13/87	4.00 - 6.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4087	08/13/87	7.00 - 9.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4187	08/17/87	0.00 - 10.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4187	08/17/87	0.00 - 12.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

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Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH3387	07/30/87	18.90 - 19.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3387	07/30/87	19.50 - 20.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3487	07/29/87	21.00 - 22.10	1600U	330U	1600U	1600U	330U	330U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3287	08/03/87	17.20 - 18.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3587	07/28/87	18.40 - 19.45	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3687	07/20/87	23.40 - 24.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3787	07/17/87	18.00 - 21.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3787	07/17/87	25.00 - 26.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	14.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	2.00 - 3.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	4.00 - 5.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	7.00 - 8.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	9.50 - 12.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	12.00 - 14.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4087	08/13/87	4.00 - 6.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4087	08/13/87	7.00 - 9.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 10.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 12.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH3387	07/30/87	18.90 - 19.80	330U	330U	1600U	1600U	42J	330U	330U	1600U
BH3387	07/30/87	19.50 - 20.80	330U	330U	1600U	1600U	49J	330U	330U	1600U
BH3487	07/29/87	21.00 - 22.10	330U	330U	1600U	1600U	1600U	330U	330U	1600U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U	330U	1600U	1600U	40J	330U	330U	1600U
BH3287	08/03/87	17.20 - 18.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3587	07/28/87	18.40 - 19.45	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3687	07/20/87	23.40 - 24.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3787	07/17/87	18.00 - 21.70	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3787	07/17/87	25.00 - 26.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	14.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U	330U	1600U	1600U	33J	330U	330U	1600U
BH3987	08/12/87	2.00 - 3.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	4.00 - 5.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	7.00 - 8.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	9.50 - 12.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	12.00 - 14.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4087	08/13/87	4.00 - 6.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4087	08/13/87	7.00 - 9.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4187	08/17/87	0.00 - 10.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4187	08/17/87	0.00 - 12.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH3387	07/30/87	18.90 - 19.80	330U	330U	330U	330U	330U	330U	660U	330U
BH3387	07/30/87	19.50 - 20.80	330U	330U	330U	330U	330U	330U	660U	330U
BH3487	07/29/87	21.00 - 22.10	330U	330U	35J	330U	330U	330U	660U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U	330U	330U	330U	330U	330U	660U	330U
BH3287	08/03/87	17.20 - 18.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3587	07/28/87	18.40 - 19.45	330U	330U	330U	330U	330U	330U	660U	330U
BH3687	07/20/87	23.40 - 24.50	330U	330U	38J	330U	330U	330U	660U	330U
BH3787	07/17/87	18.00 - 21.70	330U	330U	330U	330U	330U	330U	660U	330U
BH3787	07/17/87	25.00 - 26.20	330U	330U	41J	330U	330U	330U	660U	330U
BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	660U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	2.00 - 3.40	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	4.00 - 5.50	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	7.00 - 8.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4087	08/13/87	4.00 - 6.80	330U	330U	330U	330U	330U	330U	660U	330U
BH4087	08/13/87	7.00 - 9.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4187	08/17/87	0.00 - 10.80	330U	330U	330U	330U	330U	330U	660U	330U
BH4187	08/17/87	0.00 - 12.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH3387	07/30/87	18.90 - 19.80	240J	330U	330U	330U	330U	330U	330U	330U
BH3387	07/30/87	19.50 - 20.80	450	330U	330U	330U	330U	330U	330U	330U
BH3487	07/29/87	21.00 - 22.10	220J	330U	330U	330U	330U	330U	330U	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	430	330U	330U	330U	330U	330U	330U	330U
BH3287	08/03/87	17.20 - 18.00	9J	330U	330U	330U	330U	330U	330U	330U
BH3587	07/28/87	18.40 - 19.45	320J	330U	330U	330U	330U	330U	330U	330U
BH3687	07/20/87	23.40 - 24.50	360	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	18.00 - 21.70	550	330U	330U	330U	330U	330U	330U	330U
BH3787	07/17/87	25.00 - 26.20	420	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	14.50 - 17.00	250J	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	310J	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	2.00 - 3.40	370	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	4.00 - 5.50	280J	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	7.00 - 8.00	180J	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	9.50 - 12.00	360	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	12.00 - 14.00	240J	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	4.00 - 6.80	260J	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	7.00 - 9.30	160J	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 10.80	150J	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	0.00 - 12.00	160J	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH3387	07/30/87	18.90 - 19.80	330U
BH3387	07/30/87	19.50 - 20.80	330U
BH3487	07/29/87	21.00 - 22.10	330U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	330U
BH3287	08/03/87	17.20 - 18.00	330U
BH3587	07/28/87	18.40 - 19.45	330U
BH3687	07/20/87	23.40 - 24.50	330U
BH3787	07/17/87	18.00 - 21.70	330U
BH3787	07/17/87	25.00 - 26.20	330U
BH3987	08/12/87	14.50 - 17.00	330U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	330U
BH3987	08/12/87	2.00 - 3.40	330U
BH3987	08/12/87	4.00 - 5.50	330U
BH3987	08/12/87	7.00 - 8.00	330U
BH3987	08/12/87	9.50 - 12.00	330U
BH3987	08/12/87	12.00 - 14.00	330U
BH4087	08/13/87	4.00 - 6.80	330U
BH4087	08/13/87	7.00 - 9.30	330U
BH4187	08/17/87	0.00 - 10.80	330U
BH4187	08/17/87	0.00 - 12.00	330U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH4187	08/17/87	12.00 - 14.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	22.00 - 24.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	0.00 - 1.60	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	2.00 - 3.60	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	12.00 - 12.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	14.50 - 15.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	17.00 - 18.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	22.20 - 23.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	24.70 - 26.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	4.00 - 6.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	14.50 - 16.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	22.00 - 23.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	24.50 - 27.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH4187	08/17/87	12.00 - 14.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	22.00 - 24.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	0.00 - 1.60	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	2.00 - 3.60	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	12.00 - 12.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	14.50 - 15.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	17.00 - 18.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	22.20 - 23.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	24.70 - 26.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	4.00 - 6.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	14.50 - 16.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	22.00 - 23.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	24.50 - 27.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH4187	08/17/87	12.00 - 14.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	14.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/18/87	22.00 - 24.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	0.00 - 1.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	2.00 - 3.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	12.00 - 12.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	14.50 - 15.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/04/87	17.00 - 18.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	22.20 - 23.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	24.70 - 26.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	4.00 - 6.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	14.50 - 16.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	19.50 - 22.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	22.00 - 23.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	24.50 - 27.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	0.00 - 9.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	0.00 - 9.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH4187	08/17/87	12.00 - 14.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4187	08/17/87	14.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/18/87	22.00 - 24.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	0.00 - 1.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	2.00 - 3.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	4.00 - 5.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	12.00 - 12.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	14.50 - 15.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/04/87	17.00 - 18.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/08/87	22.20 - 23.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/08/87	24.70 - 26.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	4.00 - 6.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	14.50 - 16.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	19.50 - 22.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	22.00 - 23.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	24.50 - 27.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	0.00 - 9.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4687	09/02/87	0.00 - 9.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH4187	08/17/87	12.00 - 14.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4187	08/17/87	14.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/18/87	0.00 - 8.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/18/87	22.00 - 24.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	0.00 - 1.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	2.00 - 3.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	12.00 - 12.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	14.50 - 15.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/04/87	17.00 - 18.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/08/87	22.20 - 23.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/08/87	24.70 - 26.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	4.00 - 6.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	14.50 - 16.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	19.50 - 22.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	22.00 - 23.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	24.50 - 27.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	0.00 - 9.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4687	09/02/87	0.00 - 9.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH4187	08/17/87	12.00 - 14.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4187	08/17/87	14.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/18/87	0.00 - 8.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/18/87	0.00 - 8.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/18/87	22.00 - 24.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/04/87	0.00 - 1.60	330U	330U	1600U	1600U	39J	330U	330U	1600U
BH4387	09/04/87	2.00 - 3.60	330U	330U	1600U	1600U	35J	330U	330U	1600U
BH4387	09/04/87	4.00 - 5.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/04/87	12.00 - 12.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/04/87	14.50 - 15.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/04/87	17.00 - 18.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/08/87	22.20 - 23.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/08/87	24.70 - 26.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4487	09/09/87	4.00 - 6.20	330U	330U	1600U	1600U	40JB	330U	330U	1600U
BH4487	09/09/87	14.50 - 16.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4487	09/09/87	19.50 - 22.00	330U	330U	1600U	1600U	38JB	330U	330U	1600U
BH4487	09/09/87	22.00 - 23.50	330U	330U	1600U	1600U	36JB	330U	330U	1600U
BH4487	09/09/87	24.50 - 27.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	0.00 - 9.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4687	09/02/87	0.00 - 9.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH4187	08/17/87	12.00 - 14.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4187	08/17/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/18/87	0.00 - 8.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/18/87	22.00 - 24.50	330U	330U	170J	330U	330U	330U	660U	330U
BH4387	09/04/87	0.00 - 1.60	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/04/87	2.00 - 3.60	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/04/87	4.00 - 5.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	330U	330U	49J	330U	330U	330U	660U	330U
BH4387	09/04/87	12.00 - 12.90	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/04/87	14.50 - 15.80	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/04/87	17.00 - 18.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/08/87	22.20 - 23.20	330U	330U	43JB	330U	330U	330U	660U	330U
BH4387	09/08/87	24.70 - 26.00	330U	330U	38JB	330U	330U	330U	660U	330U
BH4487	09/09/87	4.00 - 6.20	330U	330U	330U	330U	330U	330U	660U	330U
BH4487	09/09/87	14.50 - 16.40	330U	330U	330U	330U	330U	330U	660U	330U
BH4487	09/09/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4487	09/09/87	22.00 - 23.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4487	09/09/87	24.50 - 27.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/31/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	330U	330U	330U	330U	330U	330U	660U	330U
BH4687	09/02/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	330U	330U	330U	330U	330U	330U	660U	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH418Z	08/17/87	12.00 - 14.50	380	330U	330U	330U	330U	330U	330U	330U
BH418Z	08/17/87	14.50 - 17.00	150J	330U	330U	330U	330U	330U	330U	330U
BH428Z	08/18/87	0.00 - 8.30	220J	330U	330U	330U	330U	330U	330U	330U
BH428Z	08/18/87	0.00 - 8.30	170J	330U	330U	330U	330U	330U	330U	330U
BH428Z	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH428Z	08/18/87	17.00 - 18.80	140J	330U	330U	330U	330U	330U	330U	330U
BH428Z	08/18/87	22.00 - 24.50	500	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	0.00 - 1.60	420	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	2.00 - 3.60	480	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	4.00 - 5.30	450	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH438Z	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH438Z	09/04/87	9.50 - 10.30	630	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	12.00 - 12.90	510	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	14.50 - 15.80	360	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/04/87	17.00 - 18.30	430	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/08/87	22.20 - 23.20	350B	330U	330U	330U	330U	330U	330U	330U
BH438Z	09/08/87	24.70 - 26.00	410B	330U	330U	330U	330U	330U	330U	330U
BH448Z	09/09/87	4.00 - 6.20	300JB	330U	330U	330U	330U	330U	330U	330U
BH448Z	09/09/87	14.50 - 16.40	370B	330U	330U	330U	330U	330U	330U	330U
BH448Z	09/09/87	19.50 - 22.00	360B	330U	330U	330U	330U	330U	330U	330U
BH448Z	09/09/87	22.00 - 23.50	380B	330U	330U	330U	330U	330U	330U	330U
BH448Z	09/09/87	24.50 - 27.00	340B	330U	330U	330U	330U	330U	330U	330U
BH458Z	08/31/87	0.00 - 9.50	880	330U	330U	330U	330U	330U	330U	330U
BH458Z	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH458Z	08/31/87	9.50 - 17.00	770	330U	330U	330U	330U	330U	330U	330U
BH458Z	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH458Z	08/31/87	17.50 - 19.90	180J	330U	330U	330U	330U	330U	330U	330U
BH468Z	09/02/87	0.00 - 9.00	250J	330U	330U	330U	330U	330U	330U	330U
BH468Z	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH468Z	09/02/87	9.50 - 17.80	210J	330U	330U	330U	330U	330U	330U	330U
BH468Z	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH4187	08/17/87	12.00 - 14.50	330U
BH4187	08/17/87	14.50 - 17.00	330U
BH4287	08/18/87	0.00 - 8.30	330U
BH4287	08/18/87	0.00 - 8.30	330U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4287	08/18/87	17.00 - 18.80	330U
BH4287	08/18/87	22.00 - 24.50	330U
BH4387	09/04/87	0.00 - 1.60	330U
BH4387	09/04/87	2.00 - 3.60	330U
BH4387	09/04/87	4.00 - 5.30	330U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4387	09/04/87	9.50 - 10.30	330U
BH4387	09/04/87	12.00 - 12.90	330U
BH4387	09/04/87	14.50 - 15.80	330U
BH4387	09/04/87	17.00 - 18.30	330U
BH4387	09/08/87	22.20 - 23.20	330U
BH4387	09/08/87	24.70 - 26.00	330U
BH4487	09/09/87	4.00 - 6.20	330U
BH4487	09/09/87	14.50 - 16.40	330U
BH4487	09/09/87	19.50 - 22.00	330U
BH4487	09/09/87	22.00 - 23.50	330U
BH4487	09/09/87	24.50 - 27.00	330U
BH4587	08/31/87	0.00 - 9.50	330U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4587	08/31/87	9.50 - 17.00	330U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4587	08/31/87	17.50 - 19.90	330U
BH4687	09/02/87	0.00 - 9.00	330U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4687	09/02/87	9.50 - 17.80	330U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	2.00 - 3.64	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	4.00 - 5.32	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	6.00 - 7.15	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	8.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	9.50 - 10.52	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	11.50 - 12.66	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	13.50 - 14.78	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	20.50 - 21.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	21.00 - 22.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	22.50 - 24.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/16/87	6.00 - 7.14	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/18/87	8.00 - 15.54	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	7.00 - 8.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	12.00 - 12.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/18/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	12.00 - 14.40	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	12.00 - 13.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	0.00 - 18.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	2.00 - 3.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	6.00 - 7.80	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	2.00 - 3.64	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	4.00 - 5.32	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	6.00 - 7.15	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	8.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	9.50 - 10.52	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	11.50 - 12.66	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	13.50 - 14.78	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	20.50 - 21.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	21.00 - 22.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	22.50 - 24.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/16/87	6.00 - 7.14	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/18/87	8.00 - 15.54	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	7.00 - 8.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	12.00 - 12.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/18/87	0.00 - 9.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	12.00 - 14.40	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	0.00 - 9.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	12.00 - 13.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	0.00 - 18.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	2.00 - 3.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	6.00 - 7.80	330U	330U	330U	330U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	2.00 - 3.64	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	4.00 - 5.32	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	6.00 - 7.15	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	8.00 - 9.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	9.50 - 10.52	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	11.50 - 12.66	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	13.50 - 14.78	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	20.50 - 21.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	21.00 - 22.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	22.50 - 24.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/16/87	6.00 - 7.14	1600U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/18/87	8.00 - 15.54	1600U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	20.00 - 22.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	22.00 - 24.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	7.00 - 8.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	12.00 - 12.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/18/87	0.00 - 9.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	12.00 - 14.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	14.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	0.00 - 9.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	12.00 - 13.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	0.00 - 18.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	2.00 - 3.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	6.00 - 7.80	1600U	330U	330U	330U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	2.00 - 3.64	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	4.00 - 5.32	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	6.00 - 7.15	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	8.00 - 9.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	9.50 - 10.52	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	11.50 - 12.66	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	13.50 - 14.78	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/14/87	20.50 - 21.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/14/87	21.00 - 22.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/14/87	22.50 - 24.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4887	09/16/87	6.00 - 7.14	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4987	09/18/87	8.00 - 15.54	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4987	09/21/87	20.00 - 22.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4987	09/21/87	22.00 - 24.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5087	09/17/87	7.00 - 8.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5087	09/17/87	12.00 - 12.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5187	09/18/87	0.00 - 9.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5187	09/22/87	12.00 - 14.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5187	09/22/87	14.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5287	09/22/87	0.00 - 9.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5287	09/22/87	12.00 - 13.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/11/87	0.00 - 18.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/11/87	2.00 - 3.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/11/87	6.00 - 7.80	330U	330U	330U	1600U	330U	1600U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	2.00 - 3.64	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	4.00 - 5.32	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	6.00 - 7.15	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	8.00 - 9.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	9.50 - 10.52	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	11.50 - 12.66	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	13.50 - 14.78	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/14/87	20.50 - 21.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/14/87	21.00 - 22.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/14/87	22.50 - 24.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4887	09/16/87	6.00 - 7.14	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4987	09/18/87	8.00 - 15.54	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4987	09/21/87	20.00 - 22.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4987	09/21/87	22.00 - 24.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5087	09/17/87	7.00 - 8.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5087	09/17/87	12.00 - 12.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5187	09/18/87	0.00 - 9.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5187	09/22/87	12.00 - 14.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5187	09/22/87	14.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5287	09/22/87	0.00 - 9.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5287	09/22/87	12.00 - 13.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/11/87	0.00 - 18.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/11/87	2.00 - 3.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/11/87	6.00 - 7.80	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	330U	330U	1600	1600U	48JB	330U	330U	1600U
BH4787	09/11/87	2.00 - 3.64	330U	330U	1600U	1600U	41JB	330U	330U	1600U
BH4787	09/11/87	4.00 - 5.32	330U	330U	1600U	1600U	38JB	330U	330U	1600U
BH4787	09/11/87	6.00 - 7.15	330U	330U	1600U	1600U	37JB	330U	330U	1600U
BH4787	09/11/87	8.00 - 9.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/11/87	9.50 - 10.52	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/11/87	11.50 - 12.66	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/11/87	13.50 - 14.78	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/14/87	20.50 - 21.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/14/87	21.00 - 22.50	330U	330U	1600U	1600U	36JB	330U	330U	1600U
BH4787	09/14/87	22.50 - 24.30	330U	330U	1600U	1600U	120JB	330U	330U	1600U
BH4887	09/16/87	6.00 - 7.14	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	330U	330U	1600U	1600U	48J	330U	330U	1600U
BH4987	09/18/87	8.00 - 15.54	330U	330U	1600U	1600U	41J	330U	330U	1600U
BH4987	09/21/87	20.00 - 22.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4987	09/21/87	22.00 - 24.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5087	09/17/87	7.00 - 8.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5087	09/17/87	12.00 - 12.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5187	09/18/87	0.00 - 9.00	330U	330U	1600U	1600U	52J	330U	330U	1600U
BH5187	09/22/87	12.00 - 14.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5187	09/22/87	14.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5287	09/22/87	0.00 - 9.50	330U	330U	1600U	1600U	370B	330U	330U	1600U
BH5287	09/22/87	12.00 - 13.00	330U	330U	1600U	1600U	210JB	330U	330U	1600U
BH5387	09/11/87	0.00 - 18.80	330U	330U	1600U	1600U	36JB	330U	330U	1600U
BH5387	09/11/87	2.00 - 3.50	330U	330U	1600U	1600U	38JB	330U	330U	1600U
BH5387	09/11/87	6.00 - 7.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	330U	330U	52JB	330U	39J	330U	660U	330U
BH4787	09/11/87	2.00 - 3.64	330U	330U	48JB	330U	330U	330U	660U	330U
BH4787	09/11/87	4.00 - 5.32	330U	330U	47JB	330U	330U	330U	660U	330U
BH4787	09/11/87	6.00 - 7.15	330U	330U	39JB	330U	330U	330U	660U	330U
BH4787	09/11/87	8.00 - 9.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4787	09/11/87	9.50 - 10.52	330U	330U	36JB	330U	330U	330U	660U	330U
BH4787	09/11/87	11.50 - 12.66	330U	330U	36JB	330U	330U	330U	660U	330U
BH4787	09/11/87	13.50 - 14.78	330U	330U	330U	330U	330U	330U	660U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	330U	330U	58JB	330U	330U	330U	660U	330U
BH4787	09/14/87	20.50 - 21.00	330U	330U	48JB	330U	330U	330U	660U	330U
BH4787	09/14/87	21.00 - 22.50	330U	330U	55JB	330U	330U	330U	660U	330U
BH4787	09/14/87	22.50 - 24.30	330U	330U	260JB	330U	330U	330U	660U	330U
BH4887	09/16/87	6.00 - 7.14	330U	330U	42JB	330U	330U	330U	660U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	330U	330U	50JB	330U	330U	330U	660U	330U
BH4987	09/18/87	8.00 - 15.54	330U	330U	68JB	330U	330U	330U	660U	330U
BH4987	09/21/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4987	09/21/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5087	09/17/87	7.00 - 8.90	330U	330U	49JB	330U	330U	330U	660U	330U
BH5087	09/17/87	12.00 - 12.90	330U	330U	36JB	330U	330U	330U	660U	330U
BH5187	09/18/87	0.00 - 9.00	330U	330U	120JB	330U	330U	330U	660U	330U
BH5187	09/22/87	12.00 - 14.40	330U	330U	72JB	330U	330U	330U	660U	330U
BH5187	09/22/87	14.50 - 17.00	330U	330U	70JB	330U	330U	330U	660U	330U
BH5287	09/22/87	0.00 - 9.50	330U	330U	120JB	330U	330U	330U	660U	330U
BH5287	09/22/87	12.00 - 13.00	330U	330U	67JB	330U	330U	330U	660U	330U
BH5387	09/11/87	0.00 - 18.80	330U	330U	330U	330U	330U	330U	660U	330U
BH5387	09/11/87	2.00 - 3.50	330U	330U	33JB	330U	330U	330U	660U	330U
BH5387	09/11/87	6.00 - 7.80	330U	330U	44JB	330U	330U	330U	660U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	580B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	2.00 - 3.64	920B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	4.00 - 5.32	760B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	6.00 - 7.15	750B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	8.00 - 9.00	630B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	9.50 - 10.52	790B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	11.50 - 12.66	980B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	13.50 - 14.78	1000B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	900B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	20.50 - 21.00	870B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	21.00 - 22.50	890B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/14/87	22.50 - 24.30	970B	330U	330U	330U	330U	330U	330U	330U
BH4887	09/16/87	6.00 - 7.14	670B	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	600B	330U	330U	330U	330U	330U	330U	330U
BH4987	09/18/87	8.00 - 15.54	1100B	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	20.00 - 22.00	710B	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	22.00 - 24.00	720B	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	7.00 - 8.90	610B	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	12.00 - 12.90	450B	330U	330U	330U	330U	330U	330U	330U
BH5187	09/18/87	0.00 - 9.00	460B	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	12.00 - 14.40	510B	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	14.50 - 17.00	620B	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	0.00 - 9.50	630B	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	12.00 - 13.00	650B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	0.00 - 18.80	1200B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	2.00 - 3.50	1300B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/11/87	6.00 - 7.80	930B	330U	330U	330U	330U	330U	330U	330U

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East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4787	09/11/87	0.00 - 1.40	330U
BH4787	09/11/87	2.00 - 3.64	330U
BH4787	09/11/87	4.00 - 5.32	330U
BH4787	09/11/87	6.00 - 7.15	330U
BH4787	09/11/87	8.00 - 9.00	330U
BH4787	09/11/87	9.50 - 10.52	330U
BH4787	09/11/87	11.50 - 12.66	330U
BH4787	09/11/87	13.50 - 14.78	330U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4787	09/14/87	16.00 - 17.62	330U
BH4787	09/14/87	20.50 - 21.00	330U
BH4787	09/14/87	21.00 - 22.50	330U
BH4787	09/14/87	22.50 - 24.30	330U
BH4887	09/16/87	6.00 - 7.14	330U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH4987	09/18/87	6.00 - 7.30	330U
BH4987	09/18/87	8.00 - 15.54	330U
BH4987	09/21/87	20.00 - 22.00	330U
BH4987	09/21/87	22.00 - 24.00	330U
BH5087	09/17/87	7.00 - 8.90	330U
BH5087	09/17/87	12.00 - 12.90	330U
BH5187	09/18/87	0.00 - 9.00	330U
BH5187	09/22/87	12.00 - 14.40	330U
BH5187	09/22/87	14.50 - 17.00	330U
BH5287	09/22/87	0.00 - 9.50	330U
BH5287	09/22/87	12.00 - 13.00	330U
BH5387	09/11/87	0.00 - 18.80	330U
BH5387	09/11/87	2.00 - 3.50	330U
BH5387	09/11/87	6.00 - 7.80	330U

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
J = Present below detection limit B = Present in laboratory blank N = Batch spike not in 80-120% range
DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH5387	09/11/87	8.00 - 9.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	14.20 - 16.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	16.20 - 17.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	18.60 - 20.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	20.60 - 22.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/15/87	2.00 - 4.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	6.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	8.00 - 9.65	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	10.00 - 11.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	12.20 - 14.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/18/87	14.20 - 22.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	23.50 - 32.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	38.50 - 39.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	40.50 - 41.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	2.00 - 3.30	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	9.50 - 10.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	14.50 - 23.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	27.00 - 29.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/09/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	24.50 - 27.00	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH5387	09/11/87	8.00 - 9.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	14.20 - 16.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	16.20 - 17.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	18.60 - 20.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	20.60 - 22.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/15/87	2.00 - 4.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	6.00 - 7.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	8.00 - 9.65	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	10.00 - 11.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	12.20 - 14.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/18/87	14.20 - 22.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	23.50 - 32.80	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	38.50 - 39.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	40.50 - 41.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	2.00 - 3.30	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	9.50 - 10.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	14.50 - 23.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	27.00 - 29.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/09/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U

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BH3987	08/12/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	24.50 - 27.00	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH5387	09/11/87	8.00 - 9.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	14.20 - 16.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	16.20 - 17.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	18.60 - 20.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	20.60 - 22.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/15/87	2.00 - 4.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	6.00 - 7.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	8.00 - 9.65	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	10.00 - 11.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	12.20 - 14.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/18/87	14.20 - 22.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	23.50 - 32.80	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	38.50 - 39.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	40.50 - 41.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	2.00 - 3.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	9.50 - 10.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	12.00 - 14.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	14.50 - 23.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	27.00 - 29.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/09/87	29.50 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	19.50 - 22.00	1600U	330U	330U	330U	330U	330U	330U	330U

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BH3987	08/12/87	17.00 - 19.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	19.50 - 22.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	24.50 - 27.00	1600U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH5387	09/11/87	8.00 - 9.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/14/87	14.20 - 16.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/14/87	16.20 - 17.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/14/87	18.60 - 20.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/14/87	20.60 - 22.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/15/87	2.00 - 4.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/16/87	6.00 - 7.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/16/87	8.00 - 9.65	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/16/87	10.00 - 11.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/16/87	12.20 - 14.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/18/87	14.20 - 22.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/21/87	23.50 - 32.80	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/21/87	38.50 - 39.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/21/87	40.50 - 41.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	2.00 - 3.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	9.50 - 10.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	12.00 - 14.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	14.50 - 23.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	27.00 - 29.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/09/87	29.50 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5687	09/11/87	19.50 - 22.00	330U	330U	330U	1600U	330U	1600U	330U	330U

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BH3987	08/12/87	17.00 - 19.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH3987	08/12/87	19.50 - 22.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/19/87	24.50 - 27.00	330U	330U	330U	1600U	330U	1600U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH5387	09/11/87	8.00 - 9.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/14/87	14.20 - 16.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/14/87	16.20 - 17.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/14/87	18.60 - 20.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/14/87	20.60 - 22.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/15/87	2.00 - 4.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/16/87	6.00 - 7.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/16/87	8.00 - 9.65	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/16/87	10.00 - 11.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/16/87	12.20 - 14.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/18/87	14.20 - 22.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/21/87	23.50 - 32.80	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/21/87	38.50 - 39.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/21/87	40.50 - 41.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	2.00 - 3.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	9.50 - 10.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	12.00 - 14.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	14.50 - 23.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	27.00 - 29.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/09/87	29.50 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5687	09/11/87	19.50 - 22.00	1600U	330U	1600U	1600U	330U	330U	330U	330U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH3987	08/12/87	19.50 - 22.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/19/87	24.50 - 27.00	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH5387	09/11/87	8.00 - 9.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5387	09/14/87	14.20 - 16.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5387	09/14/87	16.20 - 17.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5387	09/14/87	18.60 - 20.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5387	09/14/87	20.60 - 22.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5487	09/15/87	2.00 - 4.00	330U	330U	1600U	1600U	250.000 JB	330U	330U	41J
BH5487	09/16/87	6.00 - 7.50	330U	330U	1600U	1600U	46J	330U	330U	1600U
BH5487	09/16/87	8.00 - 9.65	330U	330U	1600U	1600U	55J	330U	330U	1600U
BH5487	09/16/87	10.00 - 11.50	330U	330U	1600U	1600U	37J	330U	330U	1600U
BH5487	09/16/87	12.20 - 14.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5487	09/18/87	14.20 - 22.80	330U	330U	1600U	1600U	62J	330U	330U	1600U
BH5487	09/21/87	23.50 - 32.80	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5487	09/21/87	38.50 - 39.00	330U	330U	1600U	1600U	84JB	330U	330U	1600U
BH5487	09/21/87	40.50 - 41.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	2.00 - 3.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	9.50 - 10.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	12.00 - 14.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	14.50 - 23.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	27.00 - 29.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/09/87	29.50 - 32.00	330U	330U	1600U	1600U	160JB	330U	330U	1600U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5687	09/11/87	19.50 - 22.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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BH3987	08/12/87	17.00 - 19.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH3987	08/12/87	19.50 - 22.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/19/87	24.50 - 27.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH5387	09/11/87	8.00 - 9.90	330U	330U	42JB	330U	330U	330U	660U	330U
BH5387	09/14/87	14.20 - 16.20	330U	330U	87JB	330U	330U	330U	660U	330U
BH5387	09/14/87	16.20 - 17.90	330U	330U	49JB	330U	330U	330U	660U	330U
BH5387	09/14/87	18.60 - 20.60	330U	330U	59JB	330U	330U	330U	660U	330U
BH5387	09/14/87	20.60 - 22.60	330U	330U	61JB	330U	330U	330U	660U	330U
BH5487	09/15/87	2.00 - 4.00	330U	330U	55JB	330U	330U	330U	660U	330U
BH5487	09/16/87	6.00 - 7.50	330U	330U	90JB	330U	330U	330U	660U	330U
BH5487	09/16/87	8.00 - 9.65	330U	330U	50JB	330U	330U	330U	660U	330U
BH5487	09/16/87	10.00 - 11.50	330U	330U	53JB	330U	330U	330U	660U	330U
BH5487	09/16/87	12.20 - 14.20	330U	330U	45JB	330U	330U	330U	660U	330U
BH5487	09/18/87	14.20 - 22.80	330U	330U	46JB	330U	330U	330U	660U	330U
BH5487	09/21/87	23.50 - 32.80	330U	330U	330U	330U	330U	330U	660U	330U
BH5487	09/21/87	38.50 - 39.00	330U	330U	36JB	330U	330U	330U	660U	330U
BH5487	09/21/87	40.50 - 41.00	330U	330U	55JB	330U	330U	330U	660U	330U
BH5587	09/15/87	2.00 - 3.30	330U	330U	43JB	330U	330U	330U	660U	330U
BH5587	09/15/87	9.50 - 10.90	330U	330U	45JB	330U	330U	330U	660U	330U
BH5587	09/15/87	12.00 - 14.00	330U	330U	54JB	330U	330U	330U	660U	330U
BH5587	09/15/87	14.50 - 23.50	330U	330U	94JB	330U	330U	330U	660U	330U
BH5587	09/15/87	27.00 - 29.20	330U	330U	48JB	330U	330U	330U	660U	330U
BH5587	09/09/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	330U	330U	50JB	330U	330U	330U	660U	330U
BH5687	09/11/87	19.50 - 22.00	330U	330U	50JB	330U	330U	69J	660U	330U

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BH3987	08/12/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	660U	330U
BH3987	08/12/87	19.50 - 22.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/19/87	24.50 - 27.00	330U	330U	39J	330U	330U	330U	660U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH5387	09/11/87	8.00 - 9.90	900B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	14.20 - 16.20	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	16.20 - 17.90	720B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	18.60 - 20.60	700B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	20.60 - 22.60	810B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/15/87	2.00 - 4.00	1200B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	6.00 - 7.50	610B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	8.00 - 9.65	330B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	10.00 - 11.50	640B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/16/87	12.20 - 14.20	590B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/18/87	14.20 - 22.80	360B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	23.50 - 32.80	680B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	38.50 - 39.00	550B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	40.50 - 41.00	770B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	2.00 - 3.30	960B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	9.50 - 10.90	1200B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	12.00 - 14.00	1200B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	14.50 - 23.50	990B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	27.00 - 29.20	1000B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/09/87	29.50 - 32.00	860B	330U	330U	330U	330U	330U	330U	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS							
BH5687	09/11/87	17.00 - 18.90	1100B	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	19.50 - 22.00	880B	330U	330U	330U	330U	330U	330U	330U

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BH3987	08/12/87	17.00 - 19.50	250J	330U	330U	330U	330U	330U	330U	330U
BH3987	08/12/87	19.50 - 22.00	210J	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	24.50 - 27.00	520	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH5387	09/11/87	8.00 - 9.90	330U
BH5387	09/14/87	14.20 - 16.20	330U
BH5387	09/14/87	16.20 - 17.90	330U
BH5387	09/14/87	18.60 - 20.60	330U
BH5387	09/14/87	20.60 - 22.60	330U
BH5487	09/15/87	2.00 - 4.00	330U
BH5487	09/16/87	6.00 - 7.50	330U
BH5487	09/16/87	8.00 - 9.65	330U
BH5487	09/16/87	10.00 - 11.50	330U
BH5487	09/16/87	12.20 - 14.20	330U
BH5487	09/18/87	14.20 - 22.80	330U
BH5487	09/21/87	23.50 - 32.80	330U
BH5487	09/21/87	38.50 - 39.00	330U
BH5487	09/21/87	40.50 - 41.00	330U
BH5587	09/15/87	2.00 - 3.30	330U
BH5587	09/15/87	9.50 - 10.90	330U
BH5587	09/15/87	12.00 - 14.00	330U
BH5587	09/15/87	14.50 - 23.50	330U
BH5587	09/15/87	27.00 - 29.20	330U
BH5587	09/09/87	29.50 - 32.00	330U
BH5687	09/10/87	2.00 - 3.50	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH5687	09/10/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH5687	09/10/87	9.50 - 10.40	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH5687	09/10/87	12.00 - 14.00	INSUFFICIENT SAMPLE FOR SEMIVOLATILE ORGANIC ANALYSIS
BH5687	09/11/87	17.00 - 18.90	330U
BH5687	09/11/87	19.50 - 22.00	330U

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BH3987	08/12/87	17.00 - 19.50	330U
BH3987	08/12/87	19.50 - 22.00	330U
BH4287	08/19/87	24.50 - 27.00	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH4287	08/19/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	32.00 - 34.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	34.50 - 35.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	37.00 - 39.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/20/87	39.50 - 40.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/21/87	45.50 - 47.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	32.00 - 34.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	20.00 - 22.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	22.50 - 25.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	32.50 - 33.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	35.00 - 37.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	22.00 - 24.30	330U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	27.20 - 29.70	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	25.00 - 27.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	27.50 - 30.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	30.00 - 32.50	330U	330U	330U	330U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH4287	08/19/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	32.00 - 34.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	34.50 - 35.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	37.00 - 39.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/20/87	39.50 - 40.40	330U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/21/87	45.50 - 47.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	32.00 - 34.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	20.00 - 22.30	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	22.50 - 25.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	32.50 - 33.90	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	35.00 - 37.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	22.00 - 24.30	330U	330U	330U	330U	330U	330U	330U	330U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	27.20 - 29.70	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	25.00 - 27.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	27.50 - 30.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	30.00 - 32.50	330U	330U	330U	330U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH4287	08/19/87	27.00 - 29.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	29.50 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	32.00 - 34.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	34.50 - 35.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	37.00 - 39.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/20/87	39.50 - 40.40	1600U	330U	330U	330U	330U	330U	330U	330U
BH4287	08/21/87	45.50 - 47.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	29.50 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	32.00 - 34.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	20.00 - 22.30	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	22.50 - 25.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	32.50 - 33.90	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	35.00 - 37.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	17.00 - 19.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	22.00 - 24.30	1600U	330U	330U	330U	330U	330U	330U	330U

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BH3987	08/12/87	14.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	9.50 - 12.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	17.00 - 19.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	27.20 - 29.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	25.00 - 27.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	27.50 - 30.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	30.00 - 32.50	1600U	330U	330U	330U	330U	330U	330U	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH4287	08/19/87	27.00 - 29.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/19/87	29.50 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/19/87	32.00 - 34.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/19/87	34.50 - 35.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/19/87	37.00 - 39.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/20/87	39.50 - 40.40	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4287	08/21/87	45.50 - 47.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	29.50 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4487	09/09/87	32.00 - 34.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	20.00 - 22.30	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	22.50 - 25.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	09/01/87	32.50 - 33.90	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	09/01/87	35.00 - 37.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5187	09/22/87	17.00 - 19.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5687	09/11/87	22.00 - 24.30	330U	330U	330U	1600U	330U	1600U	330U	330U

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BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4087	08/13/87	9.50 - 12.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4187	08/17/87	17.00 - 19.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/08/87	27.20 - 29.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	25.00 - 27.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	27.50 - 30.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4587	08/31/87	30.00 - 32.50	330U	330U	330U	1600U	330U	1600U	330U	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH4287	08/19/87	27.00 - 29.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/19/87	29.50 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/19/87	32.00 - 34.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/19/87	34.50 - 35.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/19/87	37.00 - 39.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/20/87	39.50 - 40.40	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4287	08/21/87	45.50 - 47.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	29.50 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4487	09/09/87	32.00 - 34.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	20.00 - 22.30	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	22.50 - 25.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	09/01/87	32.50 - 33.90	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	09/01/87	35.00 - 37.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5187	09/22/87	17.00 - 19.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5687	09/11/87	22.00 - 24.30	1600U	330U	1600U	1600U	330U	330U	330U	330U

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BH3987	08/12/87	14.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4087	08/13/87	9.50 - 12.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4187	08/17/87	17.00 - 19.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/08/87	27.20 - 29.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	25.00 - 27.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	27.50 - 30.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4587	08/31/87	30.00 - 32.50	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH4287	08/19/87	27.00 - 29.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/19/87	29.50 - 32.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/19/87	32.00 - 34.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/19/87	34.50 - 35.90	330U	330U	1600U	1600U	100J	330U	330U	1600U
BH4287	08/19/87	37.00 - 39.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/20/87	39.50 - 40.40	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4287	08/21/87	45.50 - 47.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4487	09/09/87	29.50 - 32.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4487	09/09/87	32.00 - 34.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	20.00 - 22.30	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	22.50 - 25.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	09/01/87	32.50 - 33.90	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	09/01/87	35.00 - 37.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5187	09/22/87	17.00 - 19.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5687	09/11/87	22.00 - 24.30	330U	330U	1600U	1600U	42JB	330U	330U	1600U

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BH3987	08/12/87	14.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4087	08/13/87	9.50 - 12.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4187	08/17/87	17.00 - 19.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/08/87	27.20 - 29.70	330U	330U	1600U	1600U	37JB	330U	330U	1600U
BH4387	09/08/87	29.70 - 32.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4387	09/08/87	29.70 - 32.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	25.00 - 27.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	27.50 - 30.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4587	08/31/87	30.00 - 32.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U

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Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH4287	08/19/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/19/87	29.50 - 32.00	330U	330U	34J	330U	330U	330U	660U	330U
BH4287	08/19/87	32.00 - 34.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/19/87	34.50 - 35.90	330U	330U	34J	330U	330U	330U	660U	330U
BH4287	08/19/87	37.00 - 39.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4287	08/20/87	39.50 - 40.40	330U	330U	34J	330U	330U	330U	660U	330U
BH4287	08/21/87	45.50 - 47.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4487	09/09/87	29.50 - 32.00	330U	330U	38JB	330U	330U	330U	660U	330U
BH4487	09/09/87	32.00 - 34.50	330U	330U	38JB	330U	330U	330U	660U	330U
BH4587	08/31/87	20.00 - 22.30	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/31/87	22.50 - 25.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	09/01/87	32.50 - 33.90	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	09/01/87	35.00 - 37.50	330U	330U	330U	330U	330U	330U	660U	330U
BH5187	09/22/87	17.00 - 19.50	330U	330U	86JB	330U	330U	330U	660U	330U
BH5687	09/11/87	22.00 - 24.30	330U	330U	47JB	330U	330U	330U	660U	330U

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BH3987	08/12/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4087	08/13/87	9.50 - 12.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4187	08/17/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/08/87	27.20 - 29.70	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4387	09/08/87	29.70 - 32.00	330U	330U	34JB	330U	330U	330U	660U	330U
BH4587	08/31/87	25.00 - 27.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/31/87	27.50 - 30.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4587	08/31/87	30.00 - 32.50	330U	330U	330U	330U	330U	330U	660U	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH4287	08/19/87	27.00 - 29.50	480	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	29.50 - 32.00	720	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	32.00 - 34.50	640	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	34.50 - 35.90	410	330U	330U	330U	330U	330U	330U	330U
BH4287	08/19/87	37.00 - 39.50	520	330U	330U	330U	330U	330U	330U	330U
BH4287	08/20/87	39.50 - 40.40	610	330U	330U	330U	330U	330U	330U	330U
BH4287	08/21/87	45.50 - 47.00	160J	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	29.50 - 32.00	430B	330U	330U	330U	330U	330U	330U	330U
BH4487	09/09/87	32.00 - 34.50	920B	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	20.00 - 22.30	180J	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	22.50 - 25.00	120J	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	32.50 - 33.90	220J	330U	330U	330U	330U	330U	330U	330U
BH4587	09/01/87	35.00 - 37.50	140J	330U	330U	330U	330U	330U	330U	330U
BH5187	09/22/87	17.00 - 19.50	720B	330U	330U	330U	330U	330U	330U	330U
BH5687	09/11/87	22.00 - 24.30	1000B	330U	330U	330U	330U	330U	330U	330U

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BH3987	08/12/87	14.50 - 17.00	250J	330U	330U	330U	330U	330U	330U	330U
BH4087	08/13/87	9.50 - 12.00	200J	330U	330U	330U	330U	330U	330U	330U
BH4187	08/17/87	17.00 - 19.50	190J	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	27.20 - 29.70	310JB	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	290JB	330U	330U	330U	330U	330U	330U	330U
BH4387	09/08/87	29.70 - 32.00	730B	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	25.00 - 27.50	190J	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	27.50 - 30.00	130J	330U	330U	330U	330U	330U	330U	330U
BH4587	08/31/87	30.00 - 32.50	150J	330U	330U	330U	330U	330U	330U	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH4287	08/19/87	27.00 - 29.50	330U
BH4287	08/19/87	29.50 - 32.00	330U
BH4287	08/19/87	32.00 - 34.50	330U
BH4287	08/19/87	34.50 - 35.90	330U
BH4287	08/19/87	37.00 - 39.50	330U
BH4287	08/20/87	39.50 - 40.40	330U
BH4287	08/21/87	45.50 - 47.00	330U
BH4487	09/09/87	29.50 - 32.00	330U
BH4487	09/09/87	32.00 - 34.50	330U
BH4587	08/31/87	20.00 - 22.30	330U
BH4587	08/31/87	22.50 - 25.00	330U
BH4587	09/01/87	32.50 - 33.90	330U
BH4587	09/01/87	35.00 - 37.50	330U
BH5187	09/22/87	17.00 - 19.50	330U
BH5687	09/11/87	22.00 - 24.30	330U

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BH3987	08/12/87	14.50 - 17.00	330U
BH4087	08/13/87	9.50 - 12.00	330U
BH4187	08/17/87	17.00 - 19.50	330U
BH4387	09/08/87	27.20 - 29.70	330U
BH4387	09/08/87	29.70 - 32.00	330U
BH4387	09/08/87	29.70 - 32.00	330U
BH4587	08/31/87	25.00 - 27.50	330U
BH4587	08/31/87	27.50 - 30.00	330U
BH4587	08/31/87	30.00 - 32.50	330U

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Borehole Number	Date Sampled	Depth Increment (ft.)	Phenol uG/kg	bis(2-Chloro ethyl)Ether uG/kg	2-Chloro phenol uG/kg	1,3-Dichloro benzene uG/kg	1,4-Dichloro benzene uG/kg	Benzyl Alcohol uG/kg	1,2-Dichloro benzene uG/kg	2-Methyl phenol uG/kg
BH4687	09/03/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/03/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	27.20 - 28.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	13.20 - 15.11	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	15.20 - 16.70	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	24.14 - 25.64	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	24.00 - 25.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	22.60 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	34.50 - 36.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/07/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	14.00 - 16.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	16.00 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	18.00 - 20.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	24.00 - 26.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	26.00 - 28.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	28.00 - 30.00	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Chloro isopropyl) Ether uG/kg	4-Methyl phenol uG/kg	N-Nitroso-di-n-propylamine uG/kg	Hexachloro ethane uG/kg	Nitro benzene uG/kg	Isophorone uG/kg	2-Nitro phenol uG/kg	2,4-Dimethyl phenol uG/kg
BH4687	09/03/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/03/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	27.20 - 28.20	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	13.20 - 15.11	330U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	15.20 - 16.70	330U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	24.14 - 25.64	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	14.50 - 17.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	17.00 - 19.50	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	24.00 - 25.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	22.60 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	34.50 - 36.60	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/07/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	14.00 - 16.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	16.00 - 18.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	18.00 - 20.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	24.00 - 26.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	26.00 - 28.00	330U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	28.00 - 30.00	330U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzoic Acid uG/kg	bis(2-Chloro ethoxy) Methane uG/kg	2,4-Dichloro phenol uG/kg	1,2,4-Trichloro benzene uG/kg	Napthalene uG/kg	4-Chloro aniline uG/kg	Hexachloror butadiene uG/kg	4-Chloro-3-methyl phenol uG/kg
BH4687	09/03/87	27.00 - 29.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH4687	09/03/87	29.50 - 32.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	27.20 - 28.20	1600U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	13.20 - 15.11	1600U	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	15.20 - 16.70	1600U	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	24.14 - 25.64	1600U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	14.50 - 17.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	17.00 - 19.50	1600U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	22.00 - 24.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	24.00 - 25.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	22.60 - 24.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	1600U	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	34.50 - 36.60	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/07/87	12.00 - 14.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	14.00 - 16.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	16.00 - 18.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	18.00 - 20.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	20.00 - 22.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	22.00 - 24.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	24.00 - 26.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	26.00 - 28.00	1600U	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	28.00 - 30.00	1600U	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	2-Methyl naphthalene uG/kg	Hexachloro cyclo pentadiene uG/kg	2,4,6-Trichloro phenol uG/kg	2,4,5-Trichloro phenol uG/kg	2-Chloro naphthalene uG/kg	2-Nitro aniline uG/kg	Dimethyl Phthalate uG/kg	Ace naphthylene uG/kg
BH4687	09/03/87	27.00 - 29.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4687	09/03/87	29.50 - 32.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4787	09/15/87	27.20 - 28.20	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4887	09/17/87	13.20 - 15.11	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4887	09/17/87	15.20 - 16.70	330U	330U	330U	1600U	330U	1600U	330U	330U
BH4987	09/21/87	24.14 - 25.64	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5087	09/17/87	14.50 - 17.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5087	09/17/87	17.00 - 19.50	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5287	09/22/87	22.00 - 24.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5287	09/22/87	24.00 - 25.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5387	09/14/87	22.60 - 24.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5587	09/15/87	34.50 - 36.60	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/07/87	12.00 - 14.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	14.00 - 16.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	16.00 - 18.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	18.00 - 20.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	20.00 - 22.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	22.00 - 24.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	24.00 - 26.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	26.00 - 28.00	330U	330U	330U	1600U	330U	1600U	330U	330U
BH5787	10/08/87	28.00 - 30.00	330U	330U	330U	1600U	330U	1600U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	3-Nitro aniline uG/kg	Ace naphthene uG/kg	2,4-Dinitro phenol uG/kg	4-Nitro phenol uG/kg	Dibenzo furan uG/kg	2,4-Dinitro toluene uG/kg	2,6-Dinitro toluene uG/kg	Diethyl phthalate uG/kg
BH4687	09/03/87	27.00 - 29.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4687	09/03/87	29.50 - 32.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4787	09/15/87	27.20 - 28.20	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4887	09/17/87	13.20 - 15.11	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4887	09/17/87	15.20 - 16.70	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH4987	09/21/87	24.14 - 25.64	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5087	09/17/87	14.50 - 17.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5087	09/17/87	17.00 - 19.50	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5287	09/22/87	22.00 - 24.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5287	09/22/87	24.00 - 25.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5387	09/14/87	22.60 - 24.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5587	09/15/87	34.50 - 36.60	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/07/87	12.00 - 14.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	14.00 - 16.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	16.00 - 18.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	18.00 - 20.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	20.00 - 22.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	22.00 - 24.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	24.00 - 26.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	26.00 - 28.00	1600U	330U	1600U	1600U	330U	330U	330U	330U
BH5787	10/08/87	28.00 - 30.00	1600U	330U	1600U	1600U	330U	330U	330U	330U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	4-Chloro phenyl-phenylether uG/kg	Fluorene uG/kg	4-Nitro aniline uG/kg	4,6-Dinitro-2-methyl phenol uG/kg	N-Nitrosodi phenylamine uG/kg	4-Bromophenyl-phenylether uG/kg	Hexachloro benzene uG/kg	Pentachloro phenol uG/kg
BH4687	09/03/87	27.00 - 29.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4687	09/03/87	29.50 - 32.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/15/87	26.20 - 27.20	330U	330U	1600U	1600U	1600U	330U	330U	95J
BH4787	09/15/87	26.20 - 27.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4787	09/15/87	27.20 - 28.20	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4887	09/17/87	13.20 - 15.11	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4887	09/17/87	15.20 - 16.70	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH4987	09/21/87	24.14 - 25.64	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5087	09/17/87	14.50 - 17.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5087	09/17/87	17.00 - 19.50	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5287	09/22/87	22.00 - 24.00	330U	330U	1600U	1600U	140JB	330U	330U	1600U
BH5287	09/22/87	24.00 - 25.00	330U	330U	1600U	1600U	280JB	330U	330U	1600U
BH5387	09/14/87	22.60 - 24.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5487	09/21/87	42.50 - 44.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5487	09/21/87	42.50 - 44.00	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	32.00 - 34.10	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	32.00 - 34.10	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5587	09/15/87	34.50 - 36.60	330U	330U	1600U	1600U	1600U	330U	330U	1600U
BH5787	10/07/87	12.00 - 14.00	330U	330U	1600U	1600U	45J	330U	330U	1600U
BH5787	10/08/87	14.00 - 16.00	330U	330U	1600U	1600U	77J	330U	330U	1600U
BH5787	10/08/87	16.00 - 18.00	330U	330U	1600U	1600U	36J	330U	330U	1600U
BH5787	10/08/87	18.00 - 20.00	330U	330U	1600U	1600U	130J	330U	330U	1600U
BH5787	10/08/87	20.00 - 22.00	330U	330U	1600U	1600U	38J	330U	330U	1600U
BH5787	10/08/87	22.00 - 24.00	330U	330U	1600U	1600U	140J	330U	330U	1600U
BH5787	10/08/87	24.00 - 26.00	330U	330U	1600U	1600U	52J	330U	330U	1600U
BH5787	10/08/87	26.00 - 28.00	330U	330U	1600U	1600U	120J	330U	330U	1600U
BH5787	10/08/87	28.00 - 30.00	330U	330U	1600U	1600U	77J	330U	330U	1600U

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Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Phenanthrene uG/kg	Anthracene uG/kg	di-n-Butyl Phthalate uG/kg	Fluoranthene uG/kg	Pyrene uG/kg	Butyl Benzyl Phthalate uG/kg	3,3'-Dichloro benzidine uG/kg	Benzo(a) Anthracene uG/kg
BH4687	09/03/87	27.00 - 29.50	330U	330U	330U	330U	330U	330U	660U	330U
BH4687	09/03/87	29.50 - 32.00	330U	330U	330U	330U	330U	330U	660U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	44JB	330U	330U	330U	660U	330U
BH4787	09/15/87	26.20 - 27.20	330U	330U	59.000 JB	330U	330U	330U	660U	330U
BH4787	09/15/87	27.20 - 28.20	330U	330U	44JB	330U	330U	330U	660U	330U
BH4887	09/17/87	13.20 - 15.11	330U	330U	42JB	330U	330U	330U	660U	330U
BH4887	09/17/87	15.20 - 16.70	330U	330U	35JB	330U	330U	330U	660U	330U
BH4987	09/21/87	24.14 - 25.64	330U	330U	330U	330U	330U	330U	660U	330U
BH5087	09/17/87	14.50 - 17.00	330U	330U	55JB	330U	330U	330U	660U	330U
BH5087	09/17/87	17.00 - 19.50	330U	330U	35JB	330U	330U	330U	660U	330U
BH5287	09/22/87	22.00 - 24.00	330U	330U	39JB	330U	330U	330U	660U	330U
BH5287	09/22/87	24.00 - 25.00	330U	330U	84JB	330U	330U	330U	660U	330U
BH5387	09/14/87	22.60 - 24.00	330U	330U	58JB	330U	330U	330U	660U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5487	09/21/87	42.50 - 44.00	330U	330U	34JB	330U	330U	330U	660U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	56JB	330U	330U	330U	660U	330U
BH5587	09/15/87	32.00 - 34.10	330U	330U	49JB	330U	330U	330U	660U	330U
BH5587	09/15/87	34.50 - 36.60	330U	330U	80JB	330U	330U	330U	660U	330U
BH5787	10/07/87	12.00 - 14.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	14.00 - 16.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	16.00 - 18.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	18.00 - 20.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	20.00 - 22.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	22.00 - 24.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	24.00 - 26.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	26.00 - 28.00	330U	330U	330U	330U	330U	330U	660U	330U
BH5787	10/08/87	28.00 - 30.00	330U	330U	330U	330U	330U	330U	660U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	bis(2-Ethylhexyl) Phthalate uG/kg	Chrysene uG/kg	di-n-Octyl Phthalate uG/kg	Benzo(b) Fluoranthene uG/kg	Benzo(k) Fluoranthene uG/kg	Benzo(a) Pyrene uG/kg	Indeno (1,2,3-cd) Pyrene uG/kg	Dibenz(a,h) Anthracene uG/kg
BH4687	09/03/87	27.00 - 29.50	230J	330U	330U	330U	330U	330U	330U	330U
BH4687	09/03/87	29.50 - 32.00	350	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	810B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	26.20 - 27.20	960B	330U	330U	330U	330U	330U	330U	330U
BH4787	09/15/87	27.20 - 28.20	1100B	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	13.20 - 15.11	470B	330U	330U	330U	330U	330U	330U	330U
BH4887	09/17/87	15.20 - 16.70	560B	330U	330U	330U	330U	330U	330U	330U
BH4987	09/21/87	24.14 - 25.64	580B	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	14.50 - 17.00	690B	330U	330U	330U	330U	330U	330U	330U
BH5087	09/17/87	17.00 - 19.50	370B	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	22.00 - 24.00	680B	330U	330U	330U	330U	330U	330U	330U
BH5287	09/22/87	24.00 - 25.00	530B	330U	330U	330U	330U	330U	330U	330U
BH5387	09/14/87	22.60 - 24.00	670B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	500B	330U	330U	330U	330U	330U	330U	330U
BH5487	09/21/87	42.50 - 44.00	650B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	900B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	32.00 - 34.10	1000B	330U	330U	330U	330U	330U	330U	330U
BH5587	09/15/87	34.50 - 36.60	890B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/07/87	12.00 - 14.00	250JB	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	14.00 - 16.00	460B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	16.00 - 18.00	590B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	18.00 - 20.00	540B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	20.00 - 22.00	510B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	22.00 - 24.00	280JB	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	24.00 - 26.00	830B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	26.00 - 28.00	1000B	330U	330U	330U	330U	330U	330U	330U
BH5787	10/08/87	28.00 - 30.00	150JB	330U	330U	330U	330U	330U	330U	330U

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Operable Unit No. 2

Semivolatile Organic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Benzo(g,h,i) Perylene uG/kg
BH4687	09/03/87	27.00 - 29.50	330U
BH4687	09/03/87	29.50 - 32.00	330U
BH4787	09/15/87	26.20 - 27.20	330U
BH4787	09/15/87	26.20 - 27.20	330U
BH4787	09/15/87	27.20 - 28.20	330U
BH4887	09/17/87	13.20 - 15.11	330U
BH4887	09/17/87	15.20 - 16.70	330U
BH4987	09/21/87	24.14 - 25.64	330U
BH5087	09/17/87	14.50 - 17.00	330U
BH5087	09/17/87	17.00 - 19.50	330U
BH5287	09/22/87	22.00 - 24.00	330U
BH5287	09/22/87	24.00 - 25.00	330U
BH5387	09/14/87	22.60 - 24.00	330U
BH5487	09/21/87	42.50 - 44.00	330U
BH5487	09/21/87	42.50 - 44.00	330U
BH5587	09/15/87	32.00 - 34.10	330U
BH5587	09/15/87	32.00 - 34.10	330U
BH5587	09/15/87	34.50 - 36.60	330U
BH5787	10/07/87	12.00 - 14.00	330U
BH5787	10/08/87	14.00 - 16.00	330U
BH5787	10/08/87	16.00 - 18.00	330U
BH5787	10/08/87	18.00 - 20.00	330U
BH5787	10/08/87	20.00 - 22.00	330U
BH5787	10/08/87	22.00 - 24.00	330U
BH5787	10/08/87	24.00 - 26.00	330U
BH5787	10/08/87	26.00 - 28.00	330U
BH5787	10/08/87	28.00 - 30.00	330U

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APPENDIX A-3

PESTICIDES AND PCBs

SOIL SAMPLING RESULTS

Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH2287	07/09/87	0.00 - 9.30	2U	2U	2U	2U	2U	2U	2U	2U
BH2287	07/09/87	0.00 - 9.30	2U	2U	2U	2U	2U	2U	2U	2U
BH2287	07/09/87	9.70 - 10.60	2U	2U	2U	2U	2U	2U	2U	2U
BH2287	07/09/87	10.60 - 18.40	2U	2U	2U	2U	2U	2U	2U	2U
BH2387	07/07/87	0.00 - 7.50	2U	2U	2U	2U	2U	2U	2U	2U
BH2387	07/07/87	0.00 - 7.50	2U	2U	2U	2U	2U	2U	2U	2U
BH2987	06/12/87	0.00 - 10.00	2U	2U	2U	2U	2U	2U	2U	2U
BH2987	06/12/87	9.70 - 12.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3087	06/16/87	0.00 - 9.00	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
BH3087	06/16/87	9.00 - 10.35	2U	2U	2U	2U	2U	2U	2U	2U
BH3087	06/16/87	11.50 - 17.15	2U	2U	2U	2U	2U	2U	2U	2U
BH3087	06/16/87	20.00 - 20.80	2U	2U	2U	2U	2U	2U	2U	2U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
BH2487	07/08/87	2.43 - 4.85	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	0.00 - 9.00	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	0.00 - 9.00	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	8.40 - 8.85	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	9.50 - 10.40	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	14.50 - 15.70	2U	2U	2U	2U	2U	2U	2U	2U
BH2687	07/16/87	0.30 - 2.50	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
BH2687	07/16/87	2.15 - 2.95	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
BH2787	07/06/87	0.00 - 4.80	2U	2U	2U	2U	2U	2U	2U	2U
BH2787	07/06/87	4.80 - 10.00	2U	2U	2U	2U	2U	2U	2U	2U
BH2887	07/13/87	0.00 - 0.90	2U	2U	2U	2U	2U	2U	2U	2U
BH2887	07/13/87	0.90 - 3.75	2U	2U	2U	2U	2U	2U	2U	2U
BH2887	07/13/87	3.75 - 4.85	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH2287	07/09/87	0.00 - 9.30	4U	4U	4U	4U	4U	4U	4U	20U
BH2287	07/09/87	0.00 - 9.30	4U	4U	4U	4U	4U	4U	4U	20U
BH2287	07/09/87	9.70 - 10.60	4U	4U	4U	4U	4U	4U	4U	20U
BH2287	07/09/87	10.60 - 18.40	4U	4U	4U	4U	4U	4U	4U	20U
BH2387	07/07/87	0.00 - 7.50	4U	4U	4U	4U	4U	4U	4U	20U
BH2387	07/07/87	0.00 - 7.50	4U	4U	4U	4U	4U	4U	4U	20U
BH2987	06/12/87	0.00 - 10.00	4U	4U	4U	4U	4U	4U	4U	20U
BH2987	06/12/87	9.70 - 12.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3087	06/16/87	0.00 - 9.00	16 U	16 U	16 U	16 U	16 U	16 U	16 U	80 U
BH3087	06/16/87	9.00 - 10.35	4U	4U	4U	4U	4U	4U	4U	20U
BH3087	06/16/87	11.50 - 17.15	4U	4U	4U	4U	4U	4U	4U	20U
BH3087	06/16/87	20.00 - 20.80	4U	4U	4U	4U	4U	4U	4U	20U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	37 U	37 U	37 U	37 U	37 U	37 U	37 U	180 U
BH2487	07/08/87	2.43 - 4.85	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	0.00 - 9.00	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	0.00 - 9.00	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	8.40 - 8.85	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	9.50 - 10.40	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	14.50 - 15.70	4U	4U	4U	4U	4U	4U	4U	20U
BH2687	07/16/87	0.30 - 2.50	39 U	39 U	39 U	39 U	39 U	39 U	39 U	200 U
BH2687	07/16/87	2.15 - 2.95	38 U	38 U	38 U	38 U	38 U	38 U	38 U	190 U
BH2787	07/06/87	0.00 - 4.80	4U	4U	4U	4U	4U	4U	4U	20U
BH2787	07/06/87	4.80 - 10.00	4U	4U	4U	4U	4U	4U	4U	20U
BH2887	07/13/87	0.00 - 0.90	4U	4U	4U	4U	4U	4U	4U	20U
BH2887	07/13/87	0.90 - 3.75	4U	4U	4U	4U	4U	4U	4U	20U
BH2887	07/13/87	3.75 - 4.85	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH2287	07/09/87	0.00 - 9.30	4U	20U	NR	NR	40U	20U	20U	20U
BH2287	07/09/87	0.00 - 9.30	4U	20U	NR	NR	40U	20U	20U	20U
BH2287	07/09/87	9.70 - 10.60	4U	20U	NR	NR	40U	20U	20U	20U
BH2287	07/09/87	10.60 - 18.40	4U	20U	NR	NR	40U	20U	20U	20U
BH2387	07/07/87	0.00 - 7.50	4U	20U	NR	NR	40U	20U	20U	20U
BH2387	07/07/87	0.00 - 7.50	4U	20U	NR	NR	40U	20U	20U	20U
BH2987	06/12/87	0.00 - 10.00	4U	20U	NR	NR	40U	20U	20U	20U
BH2987	06/12/87	9.70 - 12.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3087	06/16/87	0.00 - 9.00	16 U	80 U	NR	NR	160 U	80 U	80 U	80 U
BH3087	06/16/87	9.00 - 10.35	4U	20U	NR	NR	40U	20U	20U	20U
BH3087	06/16/87	11.50 - 17.15	4U	20U	NR	NR	40U	20U	20U	20U
BH3087	06/16/87	20.00 - 20.80	4U	20U	NR	NR	40U	20U	20U	20U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	37 U	180 U	NR	NR	370 U	180 U	180 U	180 U
BH2487	07/08/87	2.43 - 4.85	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	0.00 - 9.00	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	0.00 - 9.00	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	8.40 - 8.85	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	9.50 - 10.40	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	14.50 - 15.70	4U	20U	NR	NR	40U	20U	20U	20U
BH2687	07/16/87	0.30 - 2.50	39 U	200 U	NR	NR	390 U	200 U	200 U	200 U
BH2687	07/16/87	2.15 - 2.95	38 U	190 U	NR	NR	380 U	190 U	190 U	190 U
BH2787	07/06/87	0.00 - 4.80	4U	20U	NR	NR	40U	20U	20U	20U
BH2787	07/06/87	4.80 - 10.00	4U	20U	NR	NR	40U	20U	20U	20U
BH2887	07/13/87	0.00 - 0.90	4U	20U	NR	NR	40U	20U	20U	20U
BH2887	07/13/87	0.90 - 3.75	4U	20U	NR	NR	40U	20U	20U	20U
BH2887	07/13/87	3.75 - 4.85	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH2287	07/09/87	0.00 - 9.30	20U	20U	40U	40U
BH2287	07/09/87	0.00 - 9.30	20U	20U	40U	40U
BH2287	07/09/87	9.70 - 10.60	20U	20U	40U	40U
BH2287	07/09/87	10.60 - 18.40	20U	20U	40U	40U
BH2387	07/07/87	0.00 - 7.50	20U	20U	40U	40U
BH2387	07/07/87	0.00 - 7.50	20U	20U	40U	40U
BH2987	06/12/87	0.00 - 10.00	20U	20U	40U	40U
BH2987	06/12/87	9.70 - 12.70	20U	20U	40U	40U
BH3087	06/16/87	0.00 - 9.00	80 U	80 U	160 U	160 U
BH3087	06/16/87	9.00 - 10.35	20U	20U	40U	40U
BH3087	06/16/87	11.50 - 17.15	20U	20U	40U	40U
BH3087	06/16/87	20.00 - 20.80	20U	20U	40U	40U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	180 U	180 U	370 U	370 U
BH2487	07/08/87	2.43 - 4.85	20U	20U	40U	40U
BH2587	06/18/87	0.00 - 9.00	20U	20U	40U	40U
BH2587	06/18/87	0.00 - 9.00	20U	20U	40U	40U
BH2587	06/18/87	8.40 - 8.85	20U	20U	40U	40U
BH2587	06/18/87	9.50 - 10.40	20U	20U	40U	40U
BH2587	06/18/87	14.50 - 15.70	20U	20U	40U	40U
BH2687	07/16/87	0.30 - 2.50	200 U	200 U	390 U	390 U
BH2687	07/16/87	2.15 - 2.95	190 U	190 U	380 U	380 U
BH2787	07/06/87	0.00 - 4.80	20U	20U	40U	40U
BH2787	07/06/87	4.80 - 10.00	20U	20U	40U	40U
BH2887	07/13/87	0.00 - 0.90	20U	20U	40U	40U
BH2887	07/13/87	0.90 - 3.75	20U	20U	40U	40U
BH2887	07/13/87	3.75 - 4.85	20U	20U	40U	40U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH2887	07/13/87	4.85 - 5.90	2U	2U	2U	2U	2U	2U	2U	2U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	2U	2U	2U	2U	2U	2U	2U	2U
BH2987	06/12/87	17.50 - 18.50	2U	2U	2U	2U	2U	2U	2U	2U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	2U	2U	2U	2U	2U	2U	2U	2U
BH2287	07/09/87	22.20 - 23.35	2U	2U	2U	2U	2U	2U	2U	2U
BH2387	07/07/87	7.20 - 8.20	2U	2U	2U	2U	2U	2U	2U	2U
BH2387	07/07/87	11.20 - 11.85	2U	2U	2U	2U	2U	2U	2U	2U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	2U	2U	2U	2U	2U	2U	2U	2U
BH2487	07/08/87	10.00 - 10.90	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
BH2587	06/18/87	18.50 - 19.30	2U	2U	2U	2U	2U	2U	2U	2U
BH2587	06/18/87	19.70 - 20.50	2U	2U	2U	2U	2U	2U	2U	2U
BH2687	07/16/87	6.00 - 6.90	2U	2U	2U	2U	2U	2U	2U	2U
BH2787	07/06/87	13.00 - 14.40	2U	2U	2U	2U	2U	2U	2U	2U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3087	06/16/87	24.50 - 25.20	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH2887	07/13/87	4.85 - 5.90	4U	4U	4U	4U	4U	4U	4U	20U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	4U	4U	4U	4U	4U	4U	4U	20U
BH2987	06/12/87	17.50 - 18.50	4U	4U	4U	4U	4U	4U	4U	20U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	4U	4U	4U	4U	4U	4U	4U	20U
BH2287	07/09/87	22.20 - 23.35	4U	4U	4U	4U	4U	4U	4U	20U
BH2387	07/07/87	7.20 - 8.20	4U	4U	4U	4U	4U	4U	4U	20U
BH2387	07/07/87	11.20 - 11.85	4U	4U	4U	4U	4U	4U	4U	20U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	4U	4U	4U	4U	4U	4U	4U	20U
BH2487	07/08/87	10.00 - 10.90	40 U	40 U	40 U	40 U	40 U	40 U	40 U	200 U
BH2587	06/18/87	18.50 - 19.30	4U	4U	4U	4U	4U	4U	4U	20U
BH2587	06/18/87	19.70 - 20.50	4U	4U	4U	4U	4U	4U	4U	20U
BH2687	07/16/87	6.00 - 6.90	4U	4U	4U	4U	4U	4U	4U	20U
BH2787	07/06/87	13.00 - 14.40	4U	4U	4U	4U	4U	4U	4U	20U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3087	06/16/87	24.50 - 25.20	4 U	4 U	4 U	4 U	4 U	4 U	4 U	20 U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH2887	07/13/87	4.85 - 5.90	4U	20U	NR	NR	40U	20U	20U	20U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	4U	20U	NR	NR	40U	20U	20U	20U
BH2987	06/12/87	17.50 - 18.50	4U	20U	NR	NR	40U	20U	20U	20U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	4U	20U	NR	NR	40U	20U	20U	20U
BH2287	07/09/87	22.20 - 23.35	4U	20U	NR	NR	40U	20U	20U	20U
BH2387	07/07/87	7.20 - 8.20	4U	20U	NR	NR	40U	20U	20U	20U
BH2387	07/07/87	11.20 - 11.85	4U	20U	NR	NR	40U	20U	20U	20U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	4U	20U	NR	NR	40U	20U	20U	20U
BH2487	07/08/87	10.00 - 10.90	40 U	200 U	NR	NR	400 U	200 U	200 U	200 U
BH2587	06/18/87	18.50 - 19.30	4U	20U	NR	NR	40U	20U	20U	20U
BH2587	06/18/87	19.70 - 20.50	4U	20U	NR	NR	40U	20U	20U	20U
BH2687	07/16/87	6.00 - 6.90	4U	20U	NR	NR	40U	20U	20U	20U
BH2787	07/06/87	13.00 - 14.40	4U	20U	NR	NR	40U	20U	20U	20U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3087	06/16/87	24.50 - 25.20	4 U	20 U	NR	NR	40 U	20 U	20 U	20 U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH2887	07/13/87	4.85 - 5.90	20U	20U	40U	40U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	20U	20U	40U	40U
BH2987	06/12/87	17.50 - 18.50	20U	20U	40U	40U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	20U	20U	40U	40U
BH2287	07/09/87	22.20 - 23.35	20U	20U	40U	40U
BH2387	07/07/87	7.20 - 8.20	20U	20U	40U	40U
BH2387	07/07/87	11.20 - 11.85	20U	20U	40U	40U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH2487	07/08/87	8.30 - 8.90	20U	20U	40U	40U
BH2487	07/08/87	10.00 - 10.90	200 U	200 U	400 U	400 U
BH2587	06/18/87	18.50 - 19.30	20U	20U	40U	40U
BH2587	06/18/87	19.70 - 20.50	20U	20U	40U	40U
BH2687	07/16/87	6.00 - 6.90	20U	20U	40U	40U
BH2787	07/06/87	13.00 - 14.40	20U	20U	40U	40U
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH2887	07/13/87	11.00 - 12.00	20U	20U	40U	40U
BH3087	06/16/87	24.50 - 25.20	20 U	20 U	40 U	40 U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	20U	20U	40U	40U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH3187	08/04/87	0.00 - 11.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3187	08/04/87	11.70 - 12.60	2U	2U	2U	2U	2U	2U	2U	2U
BH3287	08/03/87	0.00 - 8.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3287	08/03/87	8.00 - 15.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3287	08/03/87	8.00 - 15.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3287	08/03/87	15.10 - 16.20	2U	2U	2U	2U	2U	2U	2U	2U
BH3387	07/30/87	0.00 - 4.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3387	07/30/87	7.80 - 14.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3387	07/30/87	7.80 - 14.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3387	07/30/87	14.70 - 15.90	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	0.00 - 8.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	6.60 - 8.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	8.00 - 14.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	8.00 - 14.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	14.70 - 16.30	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	17.00 - 18.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3587	07/27/87	0.00 - 12.30	2U	2U	2U	2U	2U	2U	2U	2U
BH3587	07/27/87	0.00 - 12.30	2U	2U	2U	2U	2U	2U	2U	2U
BH3587	07/28/87	12.00 - 15.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3587	07/28/87	14.10 - 15.40	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	0.00 - 5.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	0.00 - 5.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	4.60 - 5.50	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	5.00 - 15.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	17.70 - 20.40	2U	2U	2U	2U	2U	2U	2U	2U
BH3787	07/16/87	0.00 - 5.00	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
BH3787	07/16/87	0.00 - 5.00	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
BH3787	07/17/87	11.00 - 12.30	2U	2U	2U	2U	2U	2U	2U	2U
BH3887	07/14/87	0.00 - 9.50	2U	2U	2U	2U	2U	2U	2U	2U
BH3887	07/14/87	9.50 - 10.85	2U	2U	2U	2U	2U	2U	2U	2U

Mound Area Sandstone

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH3187	08/04/87	0.00 - 11.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3187	08/04/87	11.70 - 12.60	4U	4U	4U	4U	4U	4U	4U	20U
BH3287	08/03/87	0.00 - 8.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3287	08/03/87	8.00 - 15.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3287	08/03/87	8.00 - 15.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3287	08/03/87	15.10 - 16.20	4U	4U	4U	4U	4U	4U	4U	20U
BH3387	07/30/87	0.00 - 4.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3387	07/30/87	7.80 - 14.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3387	07/30/87	7.80 - 14.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3387	07/30/87	14.70 - 15.90	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	0.00 - 8.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	6.60 - 8.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	8.00 - 14.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	8.00 - 14.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	14.70 - 16.30	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	17.00 - 18.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3587	07/27/87	0.00 - 12.30	4U	4U	4U	4U	4U	4U	4U	20U
BH3587	07/27/87	0.00 - 12.30	4U	4U	4U	4U	4U	4U	4U	20U
BH3587	07/28/87	12.00 - 15.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3587	07/28/87	14.10 - 15.40	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	0.00 - 5.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	0.00 - 5.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	4.60 - 5.50	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	5.00 - 15.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	17.70 - 20.40	4U	4U	4U	4U	4U	4U	4U	20U
BH3787	07/16/87	0.00 - 5.00	37 U	37 U	37 U	37 U	37 U	37 U	37 U	190 U
BH3787	07/16/87	0.00 - 5.00	37 U	37 U	37 U	37 U	37 U	37 U	37 U	180 U
BH3787	07/17/87	11.00 - 12.30	4U	4U	4U	4U	4U	4U	4U	20U
BH3887	07/14/87	0.00 - 9.50	4U	4U	4U	4U	4U	4U	4U	20U
BH3887	07/14/87	9.50 - 10.85	4U	4U	4U	4U	4U	4U	4U	20U

Mound Area Sandstone

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH3187	08/04/87	0.00 - 11.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3187	08/04/87	11.70 - 12.60	4U	20U	NR	NR	40U	20U	20U	20U
BH3287	08/03/87	0.00 - 8.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3287	08/03/87	8.00 - 15.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3287	08/03/87	8.00 - 15.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3287	08/03/87	15.10 - 16.20	4U	20U	NR	NR	40U	20U	20U	20U
BH3387	07/30/87	0.00 - 4.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3387	07/30/87	7.80 - 14.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3387	07/30/87	7.80 - 14.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3387	07/30/87	14.70 - 15.90	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	0.00 - 8.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	6.60 - 8.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	8.00 - 14.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	8.00 - 14.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	14.70 - 16.30	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	17.00 - 18.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3587	07/27/87	0.00 - 12.30	4U	20U	NR	NR	40U	20U	20U	20U
BH3587	07/27/87	0.00 - 12.30	4U	20U	NR	NR	40U	20U	20U	20U
BH3587	07/28/87	12.00 - 15.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3587	07/28/87	14.10 - 15.40	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	0.00 - 5.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	0.00 - 5.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	4.60 - 5.50	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	5.00 - 15.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	17.70 - 20.40	4U	20U	NR	NR	40U	20U	20U	20U
BH3787	07/16/87	0.00 - 5.00	37 U	190 U	NR	NR	370 U	190 U	190 U	190 U
BH3787	07/16/87	0.00 - 5.00	37 U	180 U	NR	NR	370 U	180 U	180 U	180 U
BH3787	07/17/87	11.00 - 12.30	4U	20U	NR	NR	40U	20U	20U	20U
BH3887	07/14/87	0.00 - 9.50	4U	20U	NR	NR	40U	20U	20U	20U
BH3887	07/14/87	9.50 - 10.85	4U	20U	NR	NR	40U	20U	20U	20U

Mound Area Sandstone

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH3187	08/04/87	0.00 - 11.70	20U	20U	40U	40U
BH3187	08/04/87	11.70 - 12.60	20U	20U	40U	40U
BH3287	08/03/87	0.00 - 8.00	20U	20U	72	40U
BH3287	08/03/87	8.00 - 15.00	20U	20U	40U	40U
BH3287	08/03/87	8.00 - 15.00	20U	20U	40U	40U
BH3287	08/03/87	15.10 - 16.20	20U	20U	40U	40U
BH3387	07/30/87	0.00 - 4.00	20U	20U	40U	40U
BH3387	07/30/87	7.80 - 14.70	20U	20U	40U	40U
BH3387	07/30/87	7.80 - 14.70	20U	20U	40U	40U
BH3387	07/30/87	14.70 - 15.90	20U	20U	40U	40U
BH3487	07/29/87	0.00 - 8.00	20U	20U	40U	40U
BH3487	07/29/87	6.60 - 8.00	20U	20U	40U	40U
BH3487	07/29/87	8.00 - 14.70	20U	20U	40U	40U
BH3487	07/29/87	8.00 - 14.70	20U	20U	40U	40U
BH3487	07/29/87	14.70 - 16.30	20U	20U	40U	40U
BH3487	07/29/87	17.00 - 18.00	20U	20U	40U	40U
BH3587	07/27/87	0.00 - 12.30	20U	20U	40U	40U
BH3587	07/27/87	0.00 - 12.30	20U	20U	40U	40U
BH3587	07/28/87	12.00 - 15.00	20U	20U	40U	40U
BH3587	07/28/87	14.10 - 15.40	20U	20U	40U	40U
BH3687	07/20/87	0.00 - 5.00	20U	20U	21J	40U
BH3687	07/20/87	0.00 - 5.00	20U	20U	11J	40U
BH3687	07/20/87	4.60 - 5.50	20U	20U	40U	40U
BH3687	07/20/87	5.00 - 15.00	20U	20U	40U	40U
BH3687	07/20/87	17.70 - 20.40	20U	20U	40U	40U
BH3787	07/16/87	0.00 - 5.00	190 U	190 U	960 U	370 U
BH3787	07/16/87	0.00 - 5.00	180 U	180 U	1995 U	370 U
BH3787	07/17/87	11.00 - 12.30	20U	20U	40U	40U
BH3887	07/14/87	0.00 - 9.50	20U	20U	40U	40U
BH3887	07/14/87	9.50 - 10.85	20U	20U	40U	40U

Mound Area Sandstone

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH3387	07/30/87	18.90 - 19.80	2U	2U	2U	2U	2U	2U	2U	2U
BH3387	07/30/87	19.50 - 20.80	2U	2U	2U	2U	2U	2U	2U	2U
BH3487	07/29/87	21.00 - 22.10	2U	2U	2U	2U	2U	2U	2U	2U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	2U	2U	2U	2U	2U	2U	2U	2U
BH3287	08/03/87	17.20 - 18.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3587	07/28/87	18.40 - 19.45	2U	2U	2U	2U	2U	2U	2U	2U
BH3687	07/20/87	23.40 - 24.50	2U	2U	2U	2U	2U	2U	2U	2U
BH3787	07/17/87	18.00 - 21.70	2U	2U	2U	2U	2U	2U	2U	2U
BH3787	07/17/87	25.00 - 26.20	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	14.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	2.00 - 3.40	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	4.00 - 5.50	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	7.00 - 8.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	9.50 - 12.00	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	12.00 - 14.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4087	08/13/87	4.00 - 6.80	2U	2U	2U	2U	2U	2U	2U	2U
BH4087	08/13/87	7.00 - 9.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4187	08/17/87	0.00 - 10.80	2U	2U	2U	2U	2U	2U	2U	2U
BH4187	08/17/87	0.00 - 12.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH3387	07/30/87	18.90 - 19.80	4U	4U	4U	4U	4U	4U	4U	20U
BH3387	07/30/87	19.50 - 20.80	4U	4U	4U	4U	4U	4U	4U	20U
BH3487	07/29/87	21.00 - 22.10	4U	4U	4U	4U	4U	4U	4U	20U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	4U	4U	4U	4U	4U	4U	4U	20U
BH3287	08/03/87	17.20 - 18.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3587	07/28/87	18.40 - 19.45	4U	4U	4U	4U	4U	4U	4U	20U
BH3687	07/20/87	23.40 - 24.50	4U	4U	4U	4U	4U	4U	4U	20U
BH3787	07/17/87	18.00 - 21.70	4U	4U	4U	4U	4U	4U	4U	20U
BH3787	07/17/87	25.00 - 26.20	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	14.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	2.00 - 3.40	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	4.00 - 5.50	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	7.00 - 8.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	9.50 - 12.00	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	12.00 - 14.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4087	08/13/87	4.00 - 6.80	4U	4U	4U	4U	4U	4U	4U	20U
BH4087	08/13/87	7.00 - 9.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4187	08/17/87	0.00 - 10.80	4U	4U	4U	4U	4U	4U	4U	20U
BH4187	08/17/87	0.00 - 12.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH3387	07/30/87	18.90 - 19.80	4U	20U	NR	NR	40U	20U	20U	20U
BH3387	07/30/87	19.50 - 20.80	4U	20U	NR	NR	40U	20U	20U	20U
BH3487	07/29/87	21.00 - 22.10	4U	20U	NR	NR	40U	20U	20U	20U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	4U	20U	NR	NR	40U	20U	20U	20U
BH3287	08/03/87	17.20 - 18.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3587	07/28/87	18.40 - 19.45	4U	20U	NR	NR	40U	20U	20U	20U
BH3687	07/20/87	23.40 - 24.50	4U	20U	NR	NR	40U	20U	20U	20U
BH3787	07/17/87	18.00 - 21.70	4U	20U	NR	NR	40U	20U	20U	20U
BH3787	07/17/87	25.00 - 26.20	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	14.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	2.00 - 3.40	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	4.00 - 5.50	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	7.00 - 8.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	9.50 - 12.00	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	12.00 - 14.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4087	08/13/87	4.00 - 6.80	4U	20U	NR	NR	40U	20U	20U	20U
BH4087	08/13/87	7.00 - 9.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4187	08/17/87	0.00 - 10.80	4U	20U	NR	NR	40U	20U	20U	20U
BH4187	08/17/87	0.00 - 12.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH3387	07/30/87	18.90 - 19.80	20U	20U	40U	40U
BH3387	07/30/87	19.50 - 20.80	20U	20U	40U	40U
BH3487	07/29/87	21.00 - 22.10	20U	20U	40U	40U

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	20U	20U	40U	40U
BH3287	08/03/87	17.20 - 18.00	20U	20U	40U	40U
BH3587	07/28/87	18.40 - 19.45	20U	20U	40U	40U
BH3687	07/20/87	23.40 - 24.50	20U	20U	40U	40U
BH3787	07/17/87	18.00 - 21.70	20U	20U	40U	40U
BH3787	07/17/87	25.00 - 26.20	20U	20U	40U	40U
BH3987	08/12/87	14.50 - 17.00	20U	20U	40U	40U

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	20U	20U	40U	40U
BH3987	08/12/87	2.00 - 3.40	20U	20U	40U	40U
BH3987	08/12/87	4.00 - 5.50	20U	20U	40U	40U
BH3987	08/12/87	7.00 - 8.00	20U	20U	40U	40U
BH3987	08/12/87	9.50 - 12.00	20U	20U	40U	40U
BH3987	08/12/87	12.00 - 14.00	20U	20U	40U	40U
BH4087	08/13/87	4.00 - 6.80	20U	20U	40U	40U
BH4087	08/13/87	7.00 - 9.30	20U	20U	40U	40U
BH4187	08/17/87	0.00 - 10.80	20U	20U	40U	40U
BH4187	08/17/87	0.00 - 12.00	20U	20U	40U	40U
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH4187	08/17/87	12.00 - 14.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4187	08/17/87	14.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/18/87	0.00 - 8.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/18/87	0.00 - 8.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/18/87	22.00 - 24.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	0.00 - 1.60	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	2.00 - 3.60	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	4.00 - 5.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	12.00 - 12.90	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	14.50 - 15.80	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/04/87	17.00 - 18.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/08/87	22.20 - 23.20	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/08/87	24.70 - 26.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	4.00 - 6.20	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	14.50 - 16.40	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	19.50 - 22.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	22.00 - 23.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	24.50 - 27.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	0.00 - 9.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	2U	2U	2U	2U	2U	2U	2U	2U
BH4687	09/02/87	0.00 - 9.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	2U	2U	2U	2U	2U	2U	2U	2U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4;4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH4187	08/17/87	12.00 - 14.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4187	08/17/87	14.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/18/87	0.00 - 8.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/18/87	0.00 - 8.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/18/87	22.00 - 24.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	0.00 - 1.60	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	2.00 - 3.60	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	4.00 - 5.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	12.00 - 12.90	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	14.50 - 15.80	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/04/87	17.00 - 18.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/08/87	22.20 - 23.20	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/08/87	24.70 - 26.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	4.00 - 6.20	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	14.50 - 16.40	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	19.50 - 22.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	22.00 - 23.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	24.50 - 27.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	0.00 - 9.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	4U	4U	4U	4U	4U	4U	4U	20U
BH4687	09/02/87	0.00 - 9.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	4U	4U	4U	4U	4U	4U	4U	20U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH4187	08/17/87	12.00 - 14.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4187	08/17/87	14.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/18/87	0.00 - 8.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/18/87	0.00 - 8.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/18/87	22.00 - 24.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	0.00 - 1.60	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	2.00 - 3.60	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	4.00 - 5.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	12.00 - 12.90	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	14.50 - 15.80	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/04/87	17.00 - 18.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/08/87	22.20 - 23.20	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/08/87	24.70 - 26.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	4.00 - 6.20	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	14.50 - 16.40	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	19.50 - 22.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	22.00 - 23.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	24.50 - 27.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	0.00 - 9.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	4U	20U	NR	NR	40U	20U	20U	20U
BH4687	09/02/87	0.00 - 9.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	4U	20U	NR	NR	40U	20U	20U	20U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH4187	08/17/87	12.00 - 14.50	20U	20U	40U	40U
BH4187	08/17/87	14.50 - 17.00	20U	20U	40U	40U
BH4287	08/18/87	0.00 - 8.30	20U	20U	40U	40U
BH4287	08/18/87	0.00 - 8.30	20U	20U	40U	40U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4287	08/18/87	17.00 - 18.80	20U	20U	40U	40U
BH4287	08/18/87	22.00 - 24.50	20U	20U	40U	40U
BH4387	09/04/87	0.00 - 1.60	20U	20U	40U	40U
BH4387	09/04/87	2.00 - 3.60	20U	20U	40U	40U
BH4387	09/04/87	4.00 - 5.30	20U	20U	40U	40U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4387	09/04/87	9.50 - 10.30	20U	20U	40U	40U
BH4387	09/04/87	12.00 - 12.90	20U	20U	40U	40U
BH4387	09/04/87	14.50 - 15.80	20U	20U	40U	40U
BH4387	09/04/87	17.00 - 18.30	20U	20U	40U	40U
BH4387	09/08/87	22.20 - 23.20	20U	20U	40U	40U
BH4387	09/08/87	24.70 - 26.00	20U	20U	40U	40U
BH4487	09/09/87	4.00 - 6.20	20U	20U	40U	40U
BH4487	09/09/87	14.50 - 16.40	20U	20U	40U	40U
BH4487	09/09/87	19.50 - 22.00	20U	20U	40U	40U
BH4487	09/09/87	22.00 - 23.50	20U	20U	40U	40U
BH4487	09/09/87	24.50 - 27.00	20U	20U	40U	40U
BH4587	08/31/87	0.00 - 9.50	20U	20U	40U	40U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4587	08/31/87	9.50 - 17.00	20U	20U	40U	40U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4587	08/31/87	17.50 - 19.90	20U	20U	40U	40U
BH4687	09/02/87	0.00 - 9.00	20U	20U	40U	40U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4687	09/02/87	9.50 - 17.80	20U	20U	40U	40U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	2.00 - 3.64	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	4.00 - 5.32	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	6.00 - 7.15	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	8.00 - 9.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	9.50 - 10.52	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	11.50 - 12.66	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	13.50 - 14.78	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/14/87	20.50 - 21.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/14/87	21.00 - 22.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/14/87	22.50 - 24.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4887	09/16/87	6.00 - 7.14	2U	2U	2U	2U	2U	2U	2U	2U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4987	09/18/87	8.00 - 15.54	2U	2U	2U	2U	2U	2U	2U	2U
BH4987	09/21/87	20.00 - 22.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4987	09/21/87	22.00 - 24.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5087	09/17/87	7.00 - 8.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5087	09/17/87	12.00 - 12.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5187	09/18/87	0.00 - 9.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5187	09/22/87	12.00 - 14.40	2U	2U	2U	2U	2U	2U	2U	2U
BH5187	09/22/87	14.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5287	09/22/87	0.00 - 9.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5287	09/22/87	12.00 - 13.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/11/87	0.00 - 18.80	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/11/87	2.00 - 3.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/11/87	6.00 - 7.80	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	2.00 - 3.64	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	4.00 - 5.32	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	6.00 - 7.15	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	8.00 - 9.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	9.50 - 10.52	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	11.50 - 12.66	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	13.50 - 14.78	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/14/87	20.50 - 21.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/14/87	21.00 - 22.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/14/87	22.50 - 24.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4887	09/16/87	6.00 - 7.14	4U	4U	4U	4U	4U	4U	4U	20U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4987	09/18/87	8.00 - 15.54	4U	4U	4U	4U	4U	4U	4U	20U
BH4987	09/21/87	20.00 - 22.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4987	09/21/87	22.00 - 24.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5087	09/17/87	7.00 - 8.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5087	09/17/87	12.00 - 12.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5187	09/18/87	0.00 - 9.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5187	09/22/87	12.00 - 14.40	4U	4U	4U	4U	4U	4U	4U	20U
BH5187	09/22/87	14.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5287	09/22/87	0.00 - 9.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5287	09/22/87	12.00 - 13.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/11/87	0.00 - 18.80	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/11/87	2.00 - 3.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/11/87	6.00 - 7.80	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	2.00 - 3.64	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	4.00 - 5.32	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	6.00 - 7.15	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	8.00 - 9.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	9.50 - 10.52	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	11.50 - 12.66	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	13.50 - 14.78	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/14/87	20.50 - 21.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/14/87	21.00 - 22.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/14/87	22.50 - 24.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4887	09/16/87	6.00 - 7.14	4U	20U	NR	NR	40U	20U	20U	20U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4987	09/18/87	8.00 - 15.54	4U	20U	NR	NR	40U	20U	20U	20U
BH4987	09/21/87	20.00 - 22.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4987	09/21/87	22.00 - 24.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5087	09/17/87	7.00 - 8.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5087	09/17/87	12.00 - 12.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5187	09/18/87	0.00 - 9.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5187	09/22/87	12.00 - 14.40	4U	20U	NR	NR	40U	20U	20U	20U
BH5187	09/22/87	14.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5287	09/22/87	0.00 - 9.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5287	09/22/87	12.00 - 13.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/11/87	0.00 - 18.80	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/11/87	2.00 - 3.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/11/87	6.00 - 7.80	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4787	09/11/87	0.00 - 1.40	20U	20U	40U	40U
BH4787	09/11/87	2.00 - 3.64	20U	20U	40U	40U
BH4787	09/11/87	4.00 - 5.32	20U	20U	40U	40U
BH4787	09/11/87	6.00 - 7.15	20U	20U	40U	40U
BH4787	09/11/87	8.00 - 9.00	20U	20U	40U	40U
BH4787	09/11/87	9.50 - 10.52	20U	20U	40U	40U
BH4787	09/11/87	11.50 - 12.66	20U	20U	40U	40U
BH4787	09/11/87	13.50 - 14.78	20U	20U	40U	40U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4787	09/14/87	16.00 - 17.62	20U	20U	40U	40U
BH4787	09/14/87	20.50 - 21.00	20U	20U	40U	40U
BH4787	09/14/87	21.00 - 22.50	20U	20U	40U	40U
BH4787	09/14/87	22.50 - 24.30	20U	20U	40U	40U
BH4887	09/16/87	6.00 - 7.14	20U	20U	40U	40U
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR PESTICIDE/PCB ANALYSIS			
BH4987	09/18/87	6.00 - 7.30	20U	20U	40U	40U
BH4987	09/18/87	8.00 - 15.54	20U	20U	40U	40U
BH4987	09/21/87	20.00 - 22.00	20U	20U	40U	40U
BH4987	09/21/87	22.00 - 24.00	20U	20U	40U	40U
BH5087	09/17/87	7.00 - 8.90	20U	20U	40U	40U
BH5087	09/17/87	12.00 - 12.90	20U	20U	40U	40U
BH5187	09/18/87	0.00 - 9.00	20U	20U	40U	40U
BH5187	09/22/87	12.00 - 14.40	20U	20U	40U	40U
BH5187	09/22/87	14.50 - 17.00	20U	20U	40U	40U
BH5287	09/22/87	0.00 - 9.50	20U	20U	40U	40U
BH5287	09/22/87	12.00 - 13.00	20U	20U	40U	40U
BH5387	09/11/87	0.00 - 18.80	20U	20U	40U	40U
BH5387	09/11/87	2.00 - 3.50	20U	20U	40U	40U
BH5387	09/11/87	6.00 - 7.80	20U	20U	40U	40U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH5387	09/11/87	8.00 - 9.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/14/87	14.20 - 16.20	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/14/87	16.20 - 17.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/14/87	18.60 - 20.60	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/14/87	20.60 - 22.60	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/15/87	2.00 - 4.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/16/87	6.00 - 7.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/16/87	8.00 - 9.65	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/16/87	10.00 - 11.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/16/87	12.20 - 14.20	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/18/87	14.20 - 22.80	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/21/87	23.50 - 32.80	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/21/87	38.50 - 39.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/21/87	40.50 - 41.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	2.00 - 3.30	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	9.50 - 10.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	12.00 - 14.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	14.50 - 23.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	27.00 - 29.20	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/09/87	29.50 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/10/87	2.00 - 3.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/10/87	4.00 - 5.30	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/10/87	9.50 - 10.40	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/10/87	12.00 - 14.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/11/87	17.00 - 18.90	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/11/87	19.50 - 22.00	2U	2U	2U	2U	2U	2U	2U	2U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	2U	2U	2U	2U	2U	2U	2U	2U
BH3987	08/12/87	19.50 - 22.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/19/87	24.50 - 27.00	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH5387	09/11/87	8.00 - 9.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/14/87	14.20 - 16.20	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/14/87	16.20 - 17.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/14/87	18.60 - 20.60	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/14/87	20.60 - 22.60	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/15/87	2.00 - 4.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/16/87	6.00 - 7.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/16/87	8.00 - 9.65	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/16/87	10.00 - 11.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/16/87	12.20 - 14.20	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/18/87	14.20 - 22.80	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/21/87	23.50 - 32.80	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/21/87	38.50 - 39.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/21/87	40.50 - 41.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	2.00 - 3.30	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	9.50 - 10.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	12.00 - 14.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	14.50 - 23.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	27.00 - 29.20	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/09/87	29.50 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/10/87	2.00 - 3.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/10/87	4.00 - 5.30	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/10/87	9.50 - 10.40	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/10/87	12.00 - 14.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/11/87	17.00 - 18.90	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/11/87	19.50 - 22.00	4U	4U	4U	4U	4U	4U	4U	20U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	4U	4U	4U	4U	4U	4U	4U	20U
BH3987	08/12/87	19.50 - 22.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/19/87	24.50 - 27.00	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH5387	09/11/87	8.00 - 9.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/14/87	14.20 - 16.20	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/14/87	16.20 - 17.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/14/87	18.60 - 20.60	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/14/87	20.60 - 22.60	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/15/87	2.00 - 4.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/16/87	6.00 - 7.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/16/87	8.00 - 9.65	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/16/87	10.00 - 11.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/16/87	12.20 - 14.20	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/18/87	14.20 - 22.80	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/21/87	23.50 - 32.80	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/21/87	38.50 - 39.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/21/87	40.50 - 41.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	2.00 - 3.30	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	9.50 - 10.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	12.00 - 14.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	14.50 - 23.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	27.00 - 29.20	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/09/87	29.50 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/10/87	2.00 - 3.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/10/87	4.00 - 5.30	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/10/87	9.50 - 10.40	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/10/87	12.00 - 14.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/11/87	17.00 - 18.90	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/11/87	19.50 - 22.00	4U	20U	NR	NR	40U	20U	20U	20U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	4U	20U	NR	NR	40U	20U	20U	20U
BH3987	08/12/87	19.50 - 22.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/19/87	24.50 - 27.00	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH5387	09/11/87	8.00 - 9.90	20U	20U	40U	40U
BH5387	09/14/87	14.20 - 16.20	20U	20U	40U	40U
BH5387	09/14/87	16.20 - 17.90	20U	20U	40U	40U
BH5387	09/14/87	18.60 - 20.60	20U	20U	40U	40U
BH5387	09/14/87	20.60 - 22.60	20U	20U	40U	40U
BH5487	09/15/87	2.00 - 4.00	20U	20U	40U	40U
BH5487	09/16/87	6.00 - 7.50	20U	20U	40U	40U
BH5487	09/16/87	8.00 - 9.65	20U	20U	40U	40U
BH5487	09/16/87	10.00 - 11.50	20U	20U	40U	40U
BH5487	09/16/87	12.20 - 14.20	20U	20U	40U	40U
BH5487	09/18/87	14.20 - 22.80	20U	20U	40U	40U
BH5487	09/21/87	23.50 - 32.80	20U	20U	40U	40U
BH5487	09/21/87	38.50 - 39.00	20U	20U	40U	40U
BH5487	09/21/87	40.50 - 41.00	20U	20U	40U	40U
BH5587	09/15/87	2.00 - 3.30	20U	20U	40U	40U
BH5587	09/15/87	9.50 - 10.90	20U	20U	40U	40U
BH5587	09/15/87	12.00 - 14.00	20U	20U	40U	40U
BH5587	09/15/87	14.50 - 23.50	20U	20U	40U	40U
BH5587	09/15/87	27.00 - 29.20	20U	20U	40U	40U
BH5587	09/09/87	29.50 - 32.00	20U	20U	40U	40U
BH5687	09/10/87	2.00 - 3.50	20U	20U	40U	40U
BH5687	09/10/87	4.00 - 5.30	20U	20U	40U	40U
BH5687	09/10/87	9.50 - 10.40	20U	20U	40U	40U
BH5687	09/10/87	12.00 - 14.00	20U	20U	40U	40U
BH5687	09/11/87	17.00 - 18.90	20U	20U	40U	40U
BH5687	09/11/87	19.50 - 22.00	20U	20U	40U	40U

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	20U	20U	40U	40U
BH3987	08/12/87	19.50 - 22.00	20U	20U	40U	40U
BH4287	08/19/87	24.50 - 27.00	20U	20U	40U	40U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH4287	08/19/87	27.00 - 29.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/19/87	29.50 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/19/87	32.00 - 34.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/19/87	34.50 - 35.90	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/19/87	37.00 - 39.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/20/87	39.50 - 40.40	2U	2U	2U	2U	2U	2U	2U	2U
BH4287	08/21/87	45.50 - 47.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	29.50 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4487	09/09/87	32.00 - 34.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	20.00 - 22.30	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	22.50 - 25.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	09/01/87	32.50 - 33.90	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	09/01/87	35.00 - 37.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5187	09/22/87	17.00 - 19.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5687	09/11/87	22.00 - 24.30	2U	2U	2U	2U	2U	2U	2U	2U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4087	08/13/87	9.50 - 12.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4187	08/17/87	17.00 - 19.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/08/87	27.20 - 29.70	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/08/87	29.70 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4387	09/08/87	29.70 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	25.00 - 27.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	27.50 - 30.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4587	08/31/87	30.00 - 32.50	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH4287	08/19/87	27.00 - 29.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/19/87	29.50 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/19/87	32.00 - 34.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/19/87	34.50 - 35.90	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/19/87	37.00 - 39.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/20/87	39.50 - 40.40	4U	4U	4U	4U	4U	4U	4U	20U
BH4287	08/21/87	45.50 - 47.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	29.50 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4487	09/09/87	32.00 - 34.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	20.00 - 22.30	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	22.50 - 25.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	09/01/87	32.50 - 33.90	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	09/01/87	35.00 - 37.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5187	09/22/87	17.00 - 19.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5687	09/11/87	22.00 - 24.30	4U	4U	4U	4U	4U	4U	4U	20U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4087	08/13/87	9.50 - 12.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4187	08/17/87	17.00 - 19.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/08/87	27.20 - 29.70	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/08/87	29.70 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4387	09/08/87	29.70 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	25.00 - 27.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	27.50 - 30.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4587	08/31/87	30.00 - 32.50	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH4287	08/19/87	27.00 - 29.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/19/87	29.50 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/19/87	32.00 - 34.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/19/87	34.50 - 35.90	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/19/87	37.00 - 39.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/20/87	39.50 - 40.40	4U	20U	NR	NR	40U	20U	20U	20U
BH4287	08/21/87	45.50 - 47.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	29.50 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4487	09/09/87	32.00 - 34.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	20.00 - 22.30	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	22.50 - 25.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	09/01/87	32.50 - 33.90	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	09/01/87	35.00 - 37.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5187	09/22/87	17.00 - 19.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5687	09/11/87	22.00 - 24.30	4U	20U	NR	NR	40U	20U	20U	20U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4087	08/13/87	9.50 - 12.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4187	08/17/87	17.00 - 19.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/08/87	27.20 - 29.70	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/08/87	29.70 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4387	09/08/87	29.70 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	25.00 - 27.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	27.50 - 30.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4587	08/31/87	30.00 - 32.50	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH4287	08/19/87	27.00 - 29.50	20U	20U	40U	40U
BH4287	08/19/87	29.50 - 32.00	20U	20U	40U	40U
BH4287	08/19/87	32.00 - 34.50	20U	20U	40U	40U
BH4287	08/19/87	34.50 - 35.90	20U	20U	40U	40U
BH4287	08/19/87	37.00 - 39.50	20U	20U	40U	40U
BH4287	08/20/87	39.50 - 40.40	20U	20U	40U	40U
BH4287	08/21/87	45.50 - 47.00	20U	20U	40U	40U
BH4487	09/09/87	29.50 - 32.00	20U	20U	40U	40U
BH4487	09/09/87	32.00 - 34.50	20U	20U	40U	40U
BH4587	08/31/87	20.00 - 22.30	20U	20U	40U	40U
BH4587	08/31/87	22.50 - 25.00	20U	20U	40U	40U
BH4587	09/01/87	32.50 - 33.90	20U	20U	40U	40U
BH4587	09/01/87	35.00 - 37.50	20U	20U	40U	40U
BH5187	09/22/87	17.00 - 19.50	20U	20U	40U	40U
BH5687	09/11/87	22.00 - 24.30	20U	20U	40U	40U

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	20U	20U	40U	40U
BH4087	08/13/87	9.50 - 12.00	20U	20U	40U	40U
BH4187	08/17/87	17.00 - 19.50	20U	20U	40U	40U
BH4387	09/08/87	27.20 - 29.70	20U	20U	40U	40U
BH4387	09/08/87	29.70 - 32.00	20U	20U	40U	40U
BH4387	09/08/87	29.70 - 32.00	20U	20U	40U	40U
BH4587	08/31/87	25.00 - 27.50	20U	20U	40U	40U
BH4587	08/31/87	27.50 - 30.00	20U	20U	40U	40U
BH4587	08/31/87	30.00 - 32.50	20U	20U	40U	40U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Alpha-BHC uG/kg	Beta-BHC uG/kg	Delta-BHC uG/kg	Gamma-BHC uG/kg	Heptachlor uG/kg	Aldrin uG/kg	Heptachlor Epoxide uG/kg	Endosulfan I uG/kg
BH4687	09/03/87	27.00 - 29.50	2U	2U	2U	2U	2U	2U	2U	2U
BH4687	09/03/87	29.50 - 32.00	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/15/87	26.20 - 27.20	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/15/87	26.20 - 27.20	2U	2U	2U	2U	2U	2U	2U	2U
BH4787	09/15/87	27.20 - 28.20	2U	2U	2U	2U	2U	2U	2U	2U
BH4887	09/17/87	13.20 - 15.11	2U	2U	2U	2U	2U	2U	2U	2U
BH4887	09/17/87	15.20 - 16.70	2U	2U	2U	2U	2U	2U	2U	2U
BH4987	09/21/87	24.14 - 25.64	2U	2U	2U	2U	2U	2U	2U	2U
BH5087	09/17/87	14.50 - 17.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5087	09/17/87	17.00 - 19.50	2U	2U	2U	2U	2U	2U	2U	2U
BH5287	09/22/87	22.00 - 24.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5287	09/22/87	24.00 - 25.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5387	09/14/87	22.60 - 24.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/21/87	42.50 - 44.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5487	09/21/87	42.50 - 44.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	32.00 - 34.10	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	32.00 - 34.10	2U	2U	2U	2U	2U	2U	2U	2U
BH5587	09/15/87	34.50 - 36.60	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/07/87	12.00 - 14.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	14.00 - 16.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	16.00 - 18.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	18.00 - 20.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	20.00 - 22.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	22.00 - 24.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	24.00 - 26.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	26.00 - 28.00	2U	2U	2U	2U	2U	2U	2U	2U
BH5787	10/08/87	28.00 - 30.00	2U	2U	2U	2U	2U	2U	2U	2U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Dieldrin uG/kg	4,4'-DDE uG/kg	Endrin uG/kg	Endosulfan II uG/kg	4,4'-DDD uG/kg	Endosulfan Sulfate uG/kg	4,4'-DDT uG/kg	Methoxychlor uG/kg
BH4687	09/03/87	27.00 - 29.50	4U	4U	4U	4U	4U	4U	4U	20U
BH4687	09/03/87	29.50 - 32.00	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/15/87	26.20 - 27.20	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/15/87	26.20 - 27.20	4U	4U	4U	4U	4U	4U	4U	20U
BH4787	09/15/87	27.20 - 28.20	4U	4U	4U	4U	4U	4U	4U	20U
BH4887	09/17/87	13.20 - 15.11	4U	4U	4U	4U	4U	4U	4U	20U
BH4887	09/17/87	15.20 - 16.70	4U	4U	4U	4U	4U	4U	4U	20U
BH4987	09/21/87	24.14 - 25.64	4U	4U	4U	4U	4U	4U	4U	20U
BH5087	09/17/87	14.50 - 17.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5087	09/17/87	17.00 - 19.50	4U	4U	4U	4U	4U	4U	4U	20U
BH5287	09/22/87	22.00 - 24.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5287	09/22/87	24.00 - 25.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5387	09/14/87	22.60 - 24.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/21/87	42.50 - 44.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5487	09/21/87	42.50 - 44.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	32.00 - 34.10	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	32.00 - 34.10	4U	4U	4U	4U	4U	4U	4U	20U
BH5587	09/15/87	34.50 - 36.60	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/07/87	12.00 - 14.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	14.00 - 16.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	16.00 - 18.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	18.00 - 20.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	20.00 - 22.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	22.00 - 24.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	24.00 - 26.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	26.00 - 28.00	4U	4U	4U	4U	4U	4U	4U	20U
BH5787	10/08/87	28.00 - 30.00	4U	4U	4U	4U	4U	4U	4U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Endrin Ketone uG/kg	Chlordane uG/kg	alpha Chlordane uG/kg	gamma Chlordane uG/kg	Toxaphene uG/kg	Aroclor-1016 uG/kg	Aroclor-1221 uG/kg	Aroclor-1232 uG/kg
BH4687	09/03/87	27.00 - 29.50	4U	20U	NR	NR	40U	20U	20U	20U
BH4687	09/03/87	29.50 - 32.00	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/15/87	26.20 - 27.20	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/15/87	26.20 - 27.20	4U	20U	NR	NR	40U	20U	20U	20U
BH4787	09/15/87	27.20 - 28.20	4U	20U	NR	NR	40U	20U	20U	20U
BH4887	09/17/87	13.20 - 15.11	4U	20U	NR	NR	40U	20U	20U	20U
BH4887	09/17/87	15.20 - 16.70	4U	20U	NR	NR	40U	20U	20U	20U
BH4987	09/21/87	24.14 - 25.64	4U	20U	NR	NR	40U	20U	20U	20U
BH5087	09/17/87	14.50 - 17.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5087	09/17/87	17.00 - 19.50	4U	20U	NR	NR	40U	20U	20U	20U
BH5287	09/22/87	22.00 - 24.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5287	09/22/87	24.00 - 25.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5387	09/14/87	22.60 - 24.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/21/87	42.50 - 44.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5487	09/21/87	42.50 - 44.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	32.00 - 34.10	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	32.00 - 34.10	4U	20U	NR	NR	40U	20U	20U	20U
BH5587	09/15/87	34.50 - 36.60	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/07/87	12.00 - 14.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	14.00 - 16.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	16.00 - 18.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	18.00 - 20.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	20.00 - 22.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	22.00 - 24.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	24.00 - 26.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	26.00 - 28.00	4U	20U	NR	NR	40U	20U	20U	20U
BH5787	10/08/87	28.00 - 30.00	4U	20U	NR	NR	40U	20U	20U	20U

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Operable Unit No. 2

Pesticide/PCB Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aroclor-1242 uG/kg	Aroclor-1248 uG/kg	Aroclor-1254 uG/kg	Aroclor-1260 uG/kg
BH4687	09/03/87	27.00 - 29.50	20U	20U	40U	40U
BH4687	09/03/87	29.50 - 32.00	20U	20U	40U	40U
BH4787	09/15/87	26.20 - 27.20	20U	20U	40U	40U
BH4787	09/15/87	26.20 - 27.20	20U	20U	40U	40U
BH4787	09/15/87	27.20 - 28.20	20U	20U	40U	40U
BH4887	09/17/87	13.20 - 15.11	20U	20U	40U	40U
BH4887	09/17/87	15.20 - 16.70	20U	20U	40U	40U
BH4987	09/21/87	24.14 - 25.64	20U	20U	40U	40U
BH5087	09/17/87	14.50 - 17.00	20U	20U	40U	40U
BH5087	09/17/87	17.00 - 19.50	20U	20U	40U	40U
BH5287	09/22/87	22.00 - 24.00	20U	20U	40U	40U
BH5287	09/22/87	24.00 - 25.00	20U	20U	40U	40U
BH5387	09/14/87	22.60 - 24.00	20U	20U	40U	40U
BH5487	09/21/87	42.50 - 44.00	20U	20U	40U	40U
BH5487	09/21/87	42.50 - 44.00	20U	20U	40U	40U
BH5587	09/15/87	32.00 - 34.10	20U	20U	40U	40U
BH5587	09/15/87	32.00 - 34.10	20U	20U	40U	40U
BH5587	09/15/87	34.50 - 36.60	20U	20U	40U	40U
BH5787	10/07/87	12.00 - 14.00	20U	20U	40U	40U
BH5787	10/08/87	14.00 - 16.00	20U	20U	40U	40U
BH5787	10/08/87	16.00 - 18.00	20U	20U	40U	40U
BH5787	10/08/87	18.00 - 20.00	20U	20U	40U	40U
BH5787	10/08/87	20.00 - 22.00	20U	20U	40U	40U
BH5787	10/08/87	22.00 - 24.00	20U	20U	40U	40U
BH5787	10/08/87	24.00 - 26.00	20U	20U	40U	40U
BH5787	10/08/87	26.00 - 28.00	20U	20U	40U	40U
BH5787	10/08/87	28.00 - 30.00	20U	20U	40U	40U

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APPENDIX A-4

TOTAL METALS

SOIL SAMPLING RESULTS

Operable Unit No. 2

Total Metal Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH2287	07/09/87	0.00 - 9.30	14000	12U	2.6	61	1U	1.4	70100	NR
BH2287	07/09/87	0.00 - 9.30	14500	12U	6.5	49	1U	1.2	25700	NR
BH2287	07/09/87	9.70 - 10.60	13500	12U	7.4	43	1U	1.8	3260	NR
BH2287	07/09/87	10.60 - 18.40	13200	12U	13.6	69	1U	2.0	3170	NR
BH2387	07/07/87	0.00 - 7.50	12000	12U	6.4	212	1U	3.2	3650	NR
BH2387	07/07/87	0.00 - 7.50	13100	12U	7	194	1U	4.0	4430	NR
BH2987	06/12/87	0.00 - 10.00	12032	24	3.6	49	0.7 J	1.9	1300	NR
BH2987	06/12/87	9.70 - 12.70	8215	15U	2.9	71	0.9 J	1.5	2100	NR
BH3087	06/16/87	0.00 - 9.00	5320	5.6 U	7.88	66	1 U	1 U	79000	NR
BH3087	06/16/87	9.00 - 10.35	3847	12U	5.0	56.9	0.5 J	2.3	1634	NR
BH3087	06/16/87	11.50 - 17.15	8282	12U	8.9	44.2	1	3.0	3502	NR
BH3087	06/16/87	20.00 - 20.80	7798	12U	8.8	30.7 J	1	4.0	4000	NR

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	4040	6.3 U	11	.035	1.140	1.140 U	1600	NR
BH2487	07/08/87	2.43 - 4.85	9430	12U	3.2	40U	1U	1U	1940	NR
BH2587	06/18/87	0.00 - 9.00	17400	12U	5.4	119	1U	4.6	4220	NR
BH2587	06/18/87	0.00 - 9.00	9064	12U	15.70	1899	1.30	5.20	5320	600U
BH2587	06/18/87	8.40 - 8.85	16600	12U	6.2	80	1U	3.5	6300	NR
BH2587	06/18/87	9.50 - 10.40	10139	12U	8.10	74.40	1.10	4.40	3443	600U
BH2587	06/18/87	14.50 - 15.70	9250	12U	7.4	37	1U	1.9	3860	NR
BH2687	07/16/87	0.30 - 2.50	16300	6.8 U	17.8	216	1.22 U	1.22 U	24700	NR
BH2687	07/16/87	2.15 - 2.95	14400	6.7 U	10	87.2	1.2 U	1.2 U	11300	NR
BH2787	07/06/87	0.00 - 4.80	18900	12U	8.7	100	1U	5.4	2840	NR
BH2787	07/06/87	4.80 - 10.00	10000	12U	8.8	57	1U	2.2	2190	NR
BH2887	07/13/87	0.00 - 0.90	6930	12 U	3.5	99	1U	1.6	4560	NR
BH2887	07/13/87	0.90 - 3.75	9190	12U	4.9	110	1U	2.1	2820	NR
BH2887	07/13/87	3.75 - 4.85	15900	12U	7.9	150	1U	4.7	3360	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH2287	07/09/87	0.00 - 9.30	5.8	10U	5U	10200	1.6	NR	3600	109
BH2287	07/09/87	0.00 - 9.30	6.9	10U	5U	12000	5.2	NR	2640	165
BH2287	07/09/87	9.70 - 10.60	11	10U	9.4	13300	6.1	NR	2630	239
BH2287	07/09/87	10.60 - 18.40	11	10U	12	15000	5.6	NR	2420	523
BH2387	07/07/87	0.00 - 7.50	18	10U	19	16800	7.5	NR	3180	1080
BH2387	07/07/87	0.00 - 7.50	22	10U	18	18200	8.4	NR	4010	1060
BH2987	06/12/87	0.00 - 10.00	11	6.9 J	5.4	10220	6.1	NR	2000	171
BH2987	06/12/87	9.70 - 12.70	8.2	5.0 J	10	13247	3.3	NR	1810	529
BH3087	06/16/87	0.00 - 9.00	6.2	4 U	6.4	6040	5.18	10 U	1680	117
BH3087	06/16/87	9.00 - 10.35	4.8	10.3	8.4	5450	6.0	NR	964 J	563
BH3087	06/16/87	11.50 - 17.15	9	16.2	12.4	10696	13.9	NR	1454	47.6
BH3087	06/16/87	20.00 - 20.80	10.3	10.5	7.6	9013	3.6	NR	1682	101

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	3.64	4.54 U	4.54 U	4020	16.9	11.3 U	752	39.3
BH2487	07/08/87	2.43 - 4.85	8.1	10U	5.9	10700	3.2	NR	1580	65
BH2587	06/18/87	0.00 - 9.00	20	10U	9.5	18500	12.3	NR	3400	246
BH2587	06/18/87	0.00 - 9.00	21.10	14.20	10.30	10473	13.70	NR	4368	273
BH2587	06/18/87	8.40 - 8.85	20	10U	5.2	14100	10.5	NR	2900	236
BH2587	06/18/87	9.50 - 10.40	19.10	15	13.5	16026	4.20	NR	4270	185
BH2587	06/18/87	14.50 - 15.70	13	10U	6.6	6700	15.6	NR	1400	64
BH2687	07/16/87	0.30 - 2.50	15.6	5.61	19.8	12500	22.8	12.71	3700	169
BH2687	07/16/87	2.15 - 2.95	13.2	4.82 U	18.6	9860	17.9	12.010	3380	63.8
BH2787	07/06/87	0.00 - 4.80	19	10U	8.2	16100	8.0	NR	3350	356
BH2787	07/06/87	4.80 - 10.00	14	10U	14	15100	4.6	NR	2230	141
BH2887	07/13/87	0.00 - 0.90	6.7	10U	5U	5660	9.9	NR	1270	35
BH2887	07/13/87	0.90 - 3.75	8.1	10U	5U	7530	7.7	NR	1530	31
BH2887	07/13/87	3.75 - 4.85	14	10U	10	17400	10	NR	2550	61

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Operable Unit No. 2

Total Metal Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH2287	07/09/87	0.00 - 9.30	0.18	NR	8U	1140	1U	2U	1000U	74
BH2287	07/09/87	0.00 - 9.30	0.1 U	NR	8U	1410	1U	2U	1000U	35
BH2287	07/09/87	9.70 - 10.60	0.1 U	NR	8.0	1730	1U	2U	1000U	20U
BH2287	07/09/87	10.60 - 18.40	0.1 U	NR	12.7	1390	1U	2U	1000U	20U
BH2387	07/07/87	0.00 - 7.50	0.19	NR	16	1930	1U	2U	1000U	14 J
BH2387	07/07/87	0.00 - 7.50	0.1 U	NR	22	2150	1U	2U	1000U	26
BH2987	06/12/87	0.00 - 10.00	114	NR	14	1270	0	2U	346 J	17 J
BH2987	06/12/87	9.70 - 12.70	0.2	NR	14	988 J	0	2U	476 J	12 J
BH3087	06/16/87	0.00 - 9.00	.10 U	NR	9	1022	.4 U	.4 U	232	70.2
BH3087	06/16/87	9.00 - 10.35	0.04 U	NR	20.6	477 J	1U	2U	1000U	4.4 J
BH3087	06/16/87	11.50 - 17.15	0.04 U	NR	21.2	500 J	1U	2U	344 J	19 J
BH3087	06/16/87	20.00 - 20.80	0.04 U	NR	21.3	975 J	1U	2U	290 J	11.4 J

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	.10 U	NR	5.45 U	649	.35 U	.46 U	175	5.32
BH2487	07/08/87	2.43 - 4.85	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH2587	06/18/87	0.00 - 9.00	0.1 U	NR	9.8	3020	1U	2U	1000U	20 U
BH2587	06/18/87	0.00 - 9.00	0.04 U	8U	28.20	2237	1U	2U	690	29
BH2587	06/18/87	8.40 - 8.85	0.1 U	NR	15	1450	1U	2U	1000U	20 U
BH2587	06/18/87	9.50 - 10.40	0.04 U	10U	36.10	861J	1U	2U	687J	16.70]
BH2587	06/18/87	14.50 - 15.70	0.12	NR	8U	1000U	1U	2U	1000U	30
BH2687	07/16/87	0.30 - 2.50	.10 U	NR	13.4	1635	.31 U	.51 U	427	87.6
BH2687	07/16/87	2.15 - 2.95	.1 U	NR	10.8	11.249	.33 U	.49 U	700	100
BH2787	07/06/87	0.00 - 4.80	0.1 U	NR	10	2320	1U	2U	1000U	12.2 J
BH2787	07/06/87	4.80 - 10.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH2887	07/13/87	0.00 - 0.90	0.1 U	NR	8U	1000U	1U	2U	1000U	17 J
BH2887	07/13/87	0.90 - 3.75	0.1 U	NR	8U	1050	1U	2U	1000U	20U
BH2887	07/13/87	3.75 - 4.85	0.1 U	NR	16	1950	1U	2U	1000U	16 J

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Operable Unit No. 2

Total Metal Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH2287	07/09/87	0.00 - 9.30	2U	NR	16	18
BH2287	07/09/87	0.00 - 9.30	2U	NR	20	24
BH2287	07/09/87	9.70 - 10.60	2U	NR	21	25
BH2287	07/09/87	10.60 - 18.40	2U	NR	37	24
BH2387	07/07/87	0.00 - 7.50	2U	NR	40	37
BH2387	07/07/87	0.00 - 7.50	2.0 U	NR	41	41
BH2987	06/12/87	0.00 - 10.00	0	NR	21	21
BH2987	06/12/87	9.70 - 12.70	0	NR	32	24
BH3087	06/16/87	0.00 - 9.00	.44 U	NR	12.4	12.2
BH3087	06/16/87	9.00 - 10.35	2U	NR	14.4	14.7
BH3087	06/16/87	11.50 - 17.15	2U	NR	23.6	57.8
BH3087	06/16/87	20.00 - 20.80	2U	NR	21	24.4

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	.48 U	NR	9.32	10.9
BH2487	07/08/87	2.43 - 4.85	2U	NR	20	18
BH2587	06/18/87	0.00 - 9.00	2U	NR	35	49
BH2587	06/18/87	0.00 - 9.00	2U	NR	42.40	54
BH2587	06/18/87	8.40 - 8.85	2U	NR	19	19
BH2587	06/18/87	9.50 - 10.40	2U	NR	42.40	33.20
BH2587	06/18/87	14.50 - 15.70	2U	NR	28	33
BH2687	07/16/87	0.30 - 2.50	.530 U	NR	50.5	48.5
BH2687	07/16/87	2.15 - 2.95	.51 U	NR	3.9	48.4
BH2787	07/06/87	0.00 - 4.80	2U	NR	39	40
BH2787	07/06/87	4.80 - 10.00	2U	NR	30	32
BH2887	07/13/87	0.00 - 0.90	2U	NR	11	30
BH2887	07/13/87	0.90 - 3.75	2U	NR	12	37
BH2887	07/13/87	3.75 - 4.85	2U	NR	49	42

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Operable Unit No. 2

Total Metal Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH2887	07/13/87	4.85 - 5.90	10900	12U	7.0	110	1U	3.7	2410	NR

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	1190	16U	0	9.7 J	1U	1U	667 J	NR
BH2987	06/12/87	17.50 - 18.50	6465	16U	4.9	43	0.9 J	2.0	4450	NR

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	6370	12U	2U	40U	1U	1U	1600	NR
BH2287	07/09/87	22.20 - 23.35	8090	12U	4.4	62	1U	1U	4770	NR
BH2387	07/07/87	7.20 - 8.20	14700	12U	7.1	48	1U	3.8	3050	NR
BH2387	07/07/87	11.20 - 11.85	7150	12U	2U	40U	1U	1.4	3580	NR
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	11300	12U	7.7	88	1U	2.6	17300	NR
BH2487	07/08/87	10.00 - 10.90	11100	6.1 U	9.23	1.07	1.09 U	1.09 U	6330	NR
BH2587	06/18/87	18.50 - 19.30	4805	12U	4.60	53.40	0.90 J	3.80	3551	NR
BH2587	06/18/87	19.70 - 20.50	12300	12U	20	74	1U	2.6	4640	NR
BH2687	07/16/87	6.00 - 6.90	4320	12U	4.1	38	1U	1.8	3750	NR
BH2787	07/06/87	13.00 - 14.40	12700	12U	5.4	105	1	2.0	4770	NR
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	5170	12U	8.4	110	1U	2.1	10500	NR
BH3087	06/16/87	24.50 - 25.20	7166	12U	6.7	31.7 J	0.6 J	4.0	2749	NR

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	4980	12U	12	74	1U	1U	21400	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH2887	07/13/87	4.85 - 5.90	8.6	10U	5U	10800	9.3	NR	1790	40

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	2U	10U	5U	1290	3.6	NR	234 J	4.9
BH2987	06/12/87	17.50 - 18.50	9	4.2 J	9.8	20460	24.6	NR	1520	52

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	13	10U	5U	9360	2.3	NR	1290	137
BH2287	07/09/87	22.20 - 23.35	4.2	10U	8.1	5230	14.3	NR	1270	48
BH2387	07/07/87	7.20 - 8.20	14	10U	12	13100	4.3	NR	2470	272
BH2387	07/07/87	11.20 - 11.85	7.7	10U	11	3960	11.8	NR	1000U	27
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	11	10U	15	14900	17.7	NR	2110	40
BH2487	07/08/87	10.00 - 10.90	12.2	7.17	21.1	8350	18.6	10.89 U	2030	160
BH2587	06/18/87	18.50 - 19.30	5.40	8J	9.40	1623	13.30	NR	1068	19
BH2587	06/18/87	19.70 - 20.50	16	10U	8.1	8500	12.3	NR	1980	34
BH2687	07/16/87	6.00 - 6.90	3.0	10U	5.8	10200	6.9	NR	1310	110
BH2787	07/06/87	13.00 - 14.40	17	10U	14	7210	14.2	NR	1650	78
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	2.1	10U	5U	11700	13	NR	1120	190
BH3087	06/16/87	24.50 - 25.20	10.6	10.8	5.9	6902	3.5	NR	3545	198

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	3.5	10U	7.2	9220	11	NR	1280	154

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Operable Unit No. 2

Total Metal Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH2887	07/13/87	4.85 - 5.90	0.1 U	NR	13	1460	1U	2U	1000U	20U

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	0.9	NR	8U	1000U	0	2U	1000U	20U
BH2987	06/12/87	17.50 - 18.50	0.5	NR	9.3	712 J	0	2U	665 J	38

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BH2287	07/09/87	18.40 - 20.60	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH2287	07/09/87	22.20 - 23.35	0.1 U	NR	8U	1000U	1U	2U	1000U	41
BH2387	07/07/87	7.20 - 8.20	0.10	NR	8.1	1300	1U	2U	1000U	20U
BH2387	07/07/87	11.20 - 11.85	0.21	NR	8U	1000U	1U	2U	1000U	20U
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2487	07/08/87	8.30 - 8.90	0.1 U	NR	8U	1000U	1U	2U	1000U	16 J
BH2487	07/08/87	10.00 - 10.90	.1 U	NR	13.9	780	.36 U	.45 U	222	99.8
BH2587	06/18/87	18.50 - 19.30	0.04 U	NR	13.60	384J	1U	2U	200U	39.10
BH2587	06/18/87	19.70 - 20.50	0.12	NR	8U	1190	1U	2U	1000U	54
BH2687	07/16/87	6.00 - 6.90	0.1 U	NR	16	1000U	1U	2U	1000U	34
BH2787	07/06/87	13.00 - 14.40	0.1 U	NR	8U	1000U	1U	2U	1000U	29
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH2887	07/13/87	11.00 - 12.00	0.12	NR	11	1000U	1.1	2U	1000U	44
BH3087	06/16/87	24.50 - 25.20	0.04 U	NR	20.6	545 J	1U	2U	257 J	7.7 J

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	0.1 U	NR	9.4	1000U	1U	2U	1000U	26

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Operable Unit No. 2

Total Metal Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH2887	07/13/87	4.85 - 5.90	2U	NR	23	31

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	0	NR	4.4 J	7.4
BH2987	06/12/87	17.50 - 18.50	0	NR	49	38

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	2U	NR	14	18
BH2287	07/09/87	22.20 - 23.35	2U	NR	19	42
BH2387	07/07/87	7.20 - 8.20	2U	NR	30	31
BH2387	07/07/87	11.20 - 11.85	2U	NR	13	19
BH2487	07/08/87	8.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH2487	07/08/87	8.30 - 8.90	2U	NR	37	63
BH2487	07/08/87	10.00 - 10.90	.47 U	NR	25.4	70.4
BH2587	06/18/87	18.50 - 19.30	2U	NR	12.50	39.70
BH2587	06/18/87	19.70 - 20.50	2U	NR	30	60
BH2687	07/16/87	6.00 - 6.90	2U	NR	10U	38
BH2787	07/06/87	13.00 - 14.40	2U	NR	25	42
BH2887	07/13/87	8.80 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH2887	07/13/87	11.00 - 12.00	2U	NR	10U	32
BH3087	06/16/87	24.50 - 25.20	2U	NR	14.7	44.7

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	2U	NR	16	30

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH3187	08/04/87	0.00 - 11.70	5610	12U	9.9	91	1U	1U	22900	NR
BH3187	08/04/87	11.70 - 12.60	6840	12U	14	89	1U	1U	11300	NR
BH3287	08/03/87	0.00 - 8.00	4720	12U	8.4	73	1U	1U	32400	NR
BH3287	08/03/87	8.00 - 15.00	2840	12U	7.8	40U	1U	1U	4980	NR
BH3287	08/03/87	8.00 - 15.00	2400	12U	7.8	40U	1U	1U	6770	NR
BH3287	08/03/87	15.10 - 16.20	1320	12U	10	40U	1U	1U	1950	NR
BH3387	07/30/87	0.00 - 4.00	23200	12U	11	76	1U	3.7	25800	NR
BH3387	07/30/87	7.80 - 14.70	8020	12U	15	48	1U	1.2	3790	NR
BH3387	07/30/87	7.80 - 14.70	4450	12U	7.3	40U	1U	1U	2440	NR
BH3387	07/30/87	14.70 - 15.90	5090	12U	7.3	41	1U	1.0	2620	NR
BH3487	07/29/87	0.00 - 8.00	12600	12U	7.3	89	1U	1.1	116000	NR
BH3487	07/29/87	6.60 - 8.00	9890	12U	7.5	40U	1U	2.0	5710	NR
BH3487	07/29/87	8.00 - 14.70	13400	12U	9.5	45	1U	3.1	6710	NR
BH3487	07/29/87	8.00 - 14.70	70600	12U	13	54	1U	3.1	2910	NR
BH3487	07/29/87	14.70 - 16.30	8450	12U	12	40U	1U	2.0	2160	NR
BH3487	07/29/87	17.00 - 18.00	6360	12U	11	40	1.3	2.1	2730	NR
BH3587	07/27/87	0.00 - 12.30	8300	12U	13	50	1U	1U	77900	NR
BH3587	07/27/87	0.00 - 12.30	14100	12U	10	66	1U	1U	93900	NR
BH3587	07/28/87	12.00 - 15.00	11900	12U	7.4	54	1U	2.2	7600	NR
BH3587	07/28/87	14.10 - 15.40	11900	12U	8.1	59	1U	2.6	4750	NR
BH3687	07/20/87	0.00 - 5.00	9020	12U	5.3	100	1U	1.3	136000	NR
BH3687	07/20/87	0.00 - 5.00	9160	12U	4.4	140	1U	2.3	4560	NR
BH3687	07/20/87	4.60 - 5.50	8020	12U	5.3	51	1U	1.8	64700	NR
BH3687	07/20/87	5.00 - 15.00	7590	12U	8.2	61	1U	2.4	4260	NR
BH3687	07/20/87	17.70 - 20.40	4480	12U	4.8	90	1U	2.0	2090	NR
BH3787	07/16/87	0.00 - 5.00	8510	6.4 U	7.1 U	122	1.15 U	1.15 U	254000	NR
BH3787	07/16/87	0.00 - 5.00	6000	6.2 U	7	63.1	1.1 U	1.1 U	44000	NR
BH3787	07/17/87	11.00 - 12.30	9580	12U	7.5	57	1U	3.2	15800	NR
BH3887	07/14/87	0.00 - 9.50	8580	12U	9.6	59	1U	2.2	48600	NR
BH3887	07/14/87	9.50 - 10.85	9540	12U	5.2	40	1U	1.6	3420	NR

Mound Area Sandstone

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH3187	08/04/87	0.00 - 11.70	6.2	10U	8.2	10400	7.2	NR	1630	154
BH3187	08/04/87	11.70 - 12.60	7.2	10U	9.4	11800	8.3	NR	1850	245
BH3287	08/03/87	0.00 - 8.00	4.1	10U	7.6	9240	7.1	NR	1440	230
BH3287	08/03/87	8.00 - 15.00	3.7	10U	6.6	10200	4.5	NR	1000U	105
BH3287	08/03/87	8.00 - 15.00	3.8	10U	5U	6320	6.7	NR	1000U	40
BH3287	08/03/87	15.10 - 16.20	2U	10U	5U	5580	4.5	NR	1000U	128
BH3387	07/30/87	0.00 - 4.00	13	10U	5.4	18900	5.2	NR	5260	146
BH3387	07/30/87	7.80 - 14.70	7.7	10U	6.7	13300	9.8	NR	1440	78
BH3387	07/30/87	7.80 - 14.70	5.4	10U	6.4	13700	6.3	NR	1000U	108
BH3387	07/30/87	14.70 - 15.90	4.5	10U	6.2	10100	7.1	NR	1080	133
BH3487	07/29/87	0.00 - 8.00	6.5	10U	5U	10300	5.1	NR	2900	113
BH3487	07/29/87	6.60 - 8.00	8.7	10U	5U	9110	3.2	NR	1540	135
BH3487	07/29/87	8.00 - 14.70	11	10U	5.7	13100	9.0	NR	2950	136
BH3487	07/29/87	8.00 - 14.70	12	10U	5.2	12500	4.3	NR	2690	191
BH3487	07/29/87	14.70 - 16.30	11	10U	6.8	10900	5.5	NR	1840	97
BH3487	07/29/87	17.00 - 18.00	9.9	10U	25	31400	5.8	NR	1260	109
BH3587	07/27/87	0.00 - 12.30	8.3	10U	5U	7130	3.5	NR	1880	78
BH3587	07/27/87	0.00 - 12.30	10	10U	5U	11200	5.1	NR	2570	134
BH3587	07/28/87	12.00 - 15.00	13	10U	8.2	17500	3.7	NR	3030	162
BH3587	07/28/87	14.10 - 15.40	14	10U	16	24100	8.0	NR	2790	146
BH3687	07/20/87	0.00 - 5.00	2U	10U	5U	7760	9.4	NR	3160	100
BH3687	07/20/87	0.00 - 5.00	7.3	10U	6.3	7360	5.8	NR	1570	35
BH3687	07/20/87	4.60 - 5.50	8.0	10U	5U	6300	3.4	NR	2670	49
BH3687	07/20/87	5.00 - 15.00	14	10U	6.7	10500	14	NR	2250	260
BH3687	07/20/87	17.70 - 20.40	18	10U	8.8	10300	2.9	NR	1360	390
BH3787	07/16/87	0.00 - 5.00	6.44	4.6 U	4.6 U	6620	7.48	10.6	3710	56.8
BH3787	07/16/87	0.00 - 5.00	4.4	4.4 U	4.4 U	6240	7.61	11 U	2050	54.1
BH3787	07/17/87	11.00 - 12.30	11	10U	6.4	11600	5.0	NR	2640	160
BH3887	07/14/87	0.00 - 9.50	2U	10U	5U	7160	7.5	NR	1890	122
BH3887	07/14/87	9.50 - 10.85	4.4	10U	5U	7770	4.0	NR	1540	160

Mound Area Sandstone

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH3187	08/04/87	0.00 - 11.70	0.1 U	NR	9.5	1000U	1U	2U	1000U	34
BH3187	08/04/87	11.70 - 12.60	0.1 U	NR	15	1000U	1U	2U	1000U	25
BH3287	08/03/87	0.00 - 8.00	0.13	NR	10	1000U	1U	2U	1000U	30
BH3287	08/03/87	8.00 - 15.00	0.34	NR	8U	1000U	1U	2U	1000U	19 J
BH3287	08/03/87	8.00 - 15.00	0.1 U	NR	8U	1000U	1U	2U	1000U	13 J
BH3287	08/03/87	15.10 - 16.20	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH3387	07/30/87	0.00 - 4.00	0.1 U	NR	8.0	1750	1U	2U	1000U	24
BH3387	07/30/87	7.80 - 14.70	0.1 U	NR	8U	1000U	1U	2U	1000U	23
BH3387	07/30/87	7.80 - 14.70	0.1 U	NR	8U	1000U	1U	2U	1000U	12 J
BH3387	07/30/87	14.70 - 15.90	0.1 U	NR	9.0	1000U	1U	2U	1000U	16 J
BH3487	07/29/87	0.00 - 8.00	0.1 U	NR	8U	1230	1U	2U	1000U	58
BH3487	07/29/87	6.60 - 8.00	0.1 U	NR	8U	1030	1U	2U	1000U	20U
BH3487	07/29/87	8.00 - 14.70	0.1 U	NR	8U	1690	1U	2U	1000U	20U
BH3487	07/29/87	8.00 - 14.70	0.1 U	NR	8U	1660	1U	2U	1000U	20U
BH3487	07/29/87	14.70 - 16.30	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH3487	07/29/87	17.00 - 18.00	0.1 U	NR	19	1000U	1U	2U	1280	21
BH3587	07/27/87	0.00 - 12.30	0.1 U	NR	8.7	1000U	1U	2U	1000U	43
BH3587	07/27/87	0.00 - 12.30	0.1 U	NR	10	1220	1U	2U	1000U	50
BH3587	07/28/87	12.00 - 15.00	0.1 U	NR	14	1020	1U	2U	1000U	36
BH3587	07/28/87	14.10 - 15.40	0.1 U	NR	21	1010	1U	2U	1000U	36
BH3687	07/20/87	0.00 - 5.00	0.1 U	NR	8U	1100	1U	2U	1000U	120
BH3687	07/20/87	0.00 - 5.00	0.1 U	NR	8U	1000	1U	2U	1000U	20
BH3687	07/20/87	4.60 - 5.50	0.1 U	NR	8U	1000U	1U	2U	1000U	87
BH3687	07/20/87	5.00 - 15.00	0.1 U	NR	12	1000U	1U	2U	1000U	19 J
BH3687	07/20/87	17.70 - 20.40	0.1 U	NR	14	1000U	1U	2U	1000U	16 J
BH3787	07/16/87	0.00 - 5.00	.1 U	NR	10.6	898	.33 U	.49 U	333	184
BH3787	07/16/87	0.00 - 5.00	.1 U	NR	12.5	704	.36 U	.46 U	268	59.1
BH3787	07/17/87	11.00 - 12.30	0.1 U	NR	15	1470	1U	2U	1000U	32
BH3887	07/14/87	0.00 - 9.50	0.1 U	NR	11	1000U	1U	2U	1000U	36
BH3887	07/14/87	9.50 - 10.85	0.1 U	NR	8U	1000U	1.5	2U	1000U	20U

Mound Area Sandstone

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH3187	08/04/87	0.00 - 11.70	2U	NR	24	39
BH3187	08/04/87	11.70 - 12.60	2U	NR	25	45
BH3287	08/03/87	0.00 - 8.00	2U	NR	26	46
BH3287	08/03/87	8.00 - 15.00	2U	NR	18	33
BH3287	08/03/87	8.00 - 15.00	2U	NR	12	27
BH3287	08/03/87	15.10 - 16.20	2U	NR	10	14
BH3387	07/30/87	0.00 - 4.00	2U	NR	21	34
BH3387	07/30/87	7.80 - 14.70	2U	NR	35	31
BH3387	07/30/87	7.80 - 14.70	2U	NR	46	26
BH3387	07/30/87	14.70 - 15.90	2U	NR	30	38
BH3487	07/29/87	0.00 - 8.00	2U	NR	18	18
BH3487	07/29/87	6.60 - 8.00	2U	NR	17	14
BH3487	07/29/87	8.00 - 14.70	2U	NR	20	27
BH3487	07/29/87	8.00 - 14.70	2U	NR	19	26
BH3487	07/29/87	14.70 - 16.30	2U	NR	19	19
BH3487	07/29/87	17.00 - 18.00	2U	NR	108	41
BH3587	07/27/87	0.00 - 12.30	2U	NR	17	12
BH3587	07/27/87	0.00 - 12.30	2U	NR	23	18
BH3587	07/28/87	12.00 - 15.00	2U	NR	33	31
BH3587	07/28/87	14.10 - 15.40	2U	NR	49	42
BH3687	07/20/87	0.00 - 5.00	2U	NR	13	20
BH3687	07/20/87	0.00 - 5.00	2U	NR	12	36
BH3687	07/20/87	4.60 - 5.50	2U	NR	10	14
BH3687	07/20/87	5.00 - 15.00	2U	NR	16	26
BH3687	07/20/87	17.70 - 20.40	2U	NR	14	30
BH3787	07/16/87	0.00 - 5.00	.51 U	NR	19.8	13.3
BH3787	07/16/87	0.00 - 5.00	.48 U	NR	18.9	13.6
BH3787	07/17/87	11.00 - 12.30	2U	NR	19	31
BH3887	07/14/87	0.00 - 9.50	2U	NR	12	19
BH3887	07/14/87	9.50 - 10.85	2U	NR	11	15

Mound Area Sandstone

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH3387	07/30/87	18.90 - 19.80	7530	12U	4.9	43	1U	1.1	2780	NR
BH3387	07/30/87	19.50 - 20.80	9650	12U	15	93	1U	3.2	24100	NR
BH3487	07/29/87	21.00 - 22.10	4610	12U	6.5	40U	1U	1.4	2190	NR

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	3960	12U	6.7	102	1U	1U	14000	NR
BH3287	08/03/87	17.20 - 18.00	3700	12U	8.3	97	1U	1U	4370	NR
BH3587	07/28/87	18.40 - 19.45	10100	12U	14	142	1U	3.3	3820	NR
BH3687	07/20/87	23.40 - 24.50	5800	12U	6.4	60	1U	2.2	3750	NR
BH3787	07/17/87	18.00 - 21.70	10800	12U	5.7	50	1U	2.9	12800	NR
BH3787	07/17/87	25.00 - 26.20	5550	12U	20	390	1U	3.3	3880	NR
BH3987	08/12/87	14.50 - 17.00	4260	12U	25	413	1U	4.3	3720	NR

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	18900	12U	37	89	1U	5.7	3500	NR
BH3987	08/12/87	2.00 - 3.40	15500	12U	26	66	1U	6.2	16100	NR
BH3987	08/12/87	4.00 - 5.50	3310	12U	6.6	40U	1U	1U	24400	NR
BH3987	08/12/87	7.00 - 8.00	7600	12U	12	50	1U	1.5	12200	NR
BH3987	08/12/87	9.50 - 12.00	7190	12U	12	49	1U	1.2	2800	NR
BH3987	08/12/87	12.00 - 14.00	9560	12U	17	50	1U	2.1	2410	NR
BH4087	08/13/87	4.00 - 6.80	7900	12U	15	69	1U	2.2	32000	NR
BH4087	08/13/87	7.00 - 9.30	6550	12U	8.4	40U	1U	1U	6740	NR
BH4187	08/17/87	0.00 - 10.80	6960	12U	12	52	1U	1.4	27300	NR
BH4187	08/17/87	0.00 - 12.00	6690	12U	14	64	1U	1.6	58300	NR
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH3387	07/30/87	18.90 - 19.80	6.0	10U	5U	7900	7.0	NR	1380	30
BH3387	07/30/87	19.50 - 20.80	8.9	10U	7.3	22300	15	NR	1630	382
BH3487	07/29/87	21.00 - 22.10	5.8	10U	6.6	8030	4.7	NR	1000U	47

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	4.8	10U	6.8	8640	7.7	NR	1370	274
BH3287	08/03/87	17.20 - 18.00	5.5	10U	9.0	7210	10	NR	1480	438
BH3587	07/28/87	18.40 - 19.45	15	10U	18	26400	11	NR	2290	598
BH3687	07/20/87	23.40 - 24.50	4.8	10U	17	8020	15	NR	1720	69
BH3787	07/17/87	18.00 - 21.70	10	10U	8.8	14500	5.9	NR	2640	110
BH3787	07/17/87	25.00 - 26.20	5.8	16	10	22200	11	NR	1380	1610
BH3987	08/12/87	14.50 - 17.00	2.5	10U	13	40800	11	NR	1230	3090

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	12	12	5.1	18800	8.3	NR	2810	216
BH3987	08/12/87	2.00 - 3.40	8.7	10U	8.2	15400	6.2	NR	2660	69
BH3987	08/12/87	4.00 - 5.50	2U	10U	5U	3440	1.7	NR	2030	14
BH3987	08/12/87	7.00 - 8.00	16	10U	13	12200	3.4	NR	2440	352
BH3987	08/12/87	9.50 - 12.00	6.0	10U	7.1	9140	3.1	NR	1170	304
BH3987	08/12/87	12.00 - 14.00	4.8	10U	6.0	9770	8.0	NR	1700	325
BH4087	08/13/87	4.00 - 6.80	7.7	10U	9.8	10700	8.5	NR	2090	526
BH4087	08/13/87	7.00 - 9.30	7.9	10U	5U	4350	5.8	NR	1310	9.4
BH4187	08/17/87	0.00 - 10.80	32	10U	5.9	9220	4.4	NR	1540	213
BH4187	08/17/87	0.00 - 12.00	22	10U	7.3	8410	4.9	NR	1850	215
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH3387	07/30/87	18.90 - 19.80	0.1 U	NR	8U	1000U	1U	2U	1000U	23
BH3387	07/30/87	19.50 - 20.80	0.1 U	NR	12	1000U	1U	2U	1000U	35
BH3487	07/29/87	21.00 - 22.10	0.1 U	NR	8U	1000U	1U	2U	1000U	20

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	0.1 U	NR	9.4	1000U	1U	2U	1000U	29
BH3287	08/03/87	17.20 - 18.00	0.12	NR	23	1000U	1U	2U	1000U	16 J
BH3587	07/28/87	18.40 - 19.45	0.1 U	NR	26	1310	1U	2U	1060	40
BH3687	07/20/87	23.40 - 24.50	0.1 U	NR	15	1000U	1U	2U	1000U	46
BH3787	07/17/87	18.00 - 21.70	0.1 U	NR	14	1280	1U	2U	1000U	30
BH3787	07/17/87	25.00 - 26.20	0.1 U	NR	22	1000U	1U	2U	1000U	38
BH3987	08/12/87	14.50 - 17.00	0.1 U	NR	13	1000U	1U	2U	1400	25

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	0.1 U	NR	16	1660	1U	2U	1000U	19 J
BH3987	08/12/87	2.00 - 3.40	0.1 U	NR	14	1340	1U	2U	1000U	23
BH3987	08/12/87	4.00 - 5.50	0.1 U	NR	8U	1000U	1U	2U	1000U	60
BH3987	08/12/87	7.00 - 8.00	0.1 U	NR	17	1000U	1U	2U	1000U	22
BH3987	08/12/87	9.50 - 12.00	0.1 U	NR	8U	1000U	1U	2U	1000U	14 J
BH3987	08/12/87	12.00 - 14.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4087	08/13/87	4.00 - 6.80	0.1 U	NR	19	1000U	1U	2U	1000U	28
BH4087	08/13/87	7.00 - 9.30	0.1 U	NR	8U	1000U	1U	2U	1000U	21
BH4187	08/17/87	0.00 - 10.80	0.1 U	NR	8U	1000U	1U	2U	1000U	26
BH4187	08/17/87	0.00 - 12.00	0.1 U	NR	10	1000U	1U	2U	1000U	47
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH3387	07/30/87	18.90 - 19.80	2U	NR	19	25
BH3387	07/30/87	19.50 - 20.80	2U	NR	43	31
BH3487	07/29/87	21.00 - 22.10	2U	NR	18	23

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	2U	NR	11	44
BH3287	08/03/87	17.20 - 18.00	2U	NR	12	47
BH3587	07/28/87	18.40 - 19.45	2U	NR	40	64
BH3687	07/20/87	23.40 - 24.50	2U	NR	19	70
BH3787	07/17/87	18.00 - 21.70	2U	NR	19	29
BH3787	07/17/87	25.00 - 26.20	2U	NR	16	66
BH3987	08/12/87	14.50 - 17.00	2U	NR	59	36

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	2U	NR	39	43
BH3987	08/12/87	2.00 - 3.40	2U	NR	33	26
BH3987	08/12/87	4.00 - 5.50	2U	NR	10U	6.6
BH3987	08/12/87	7.00 - 8.00	2U	NR	28	18
BH3987	08/12/87	9.50 - 12.00	2U	NR	18	13
BH3987	08/12/87	12.00 - 14.00	2U	NR	18	21
BH4087	08/13/87	4.00 - 6.80	2U	NR	28	25
BH4087	08/13/87	7.00 - 9.30	2U	NR	10.3	15
BH4187	08/17/87	0.00 - 10.80	2U	NR	17	15
BH4187	08/17/87	0.00 - 12.00	2U	NR	20	13
BH4187	08/17/87	9.50 - 10.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH4187	08/17/87	12.00 - 14.50	7570	12U	12	48	1U	1.4	3710	NR
BH4187	08/17/87	14.50 - 17.00	9280	12U	13	60	1U	2.3	6120	NR
BH4287	08/18/87	0.00 - 8.30	9570	12U	15	69	1U	2.2	52700	NR
BH4287	08/18/87	0.00 - 8.30	9620	12U	14	65	1U	2.5	38500	NR
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	8320	12U	18	66	1U	2.2	1640	NR
BH4287	08/18/87	22.00 - 24.50	2070	12U	10	40U	1U	2.2	1880	NR
BH4387	09/04/87	0.00 - 1.60	14900	12U	2.4	68.5	1U	5.6	3696	NR
BH4387	09/04/87	2.00 - 3.60	7560	12U	4.0	65.3	1U	2.5	117000	NR
BH4387	09/04/87	4.00 - 5.30	6420	12U	2.8	45.5	1U	2.2	79300	NR
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	5800	12U	4.0	40U	1U	2.5	4144	NR
BH4387	09/04/87	12.00 - 12.90	4660	12U	2.2	40U	1U	1.7	3216	NR
BH4387	09/04/87	14.50 - 15.80	7030	12U	2.4	40U	1U	3.2	2102	NR
BH4387	09/04/87	17.00 - 18.30	5380	12U	3.4	40U	1U	2.1	1335	NR
BH4387	09/08/87	22.20 - 23.20	6400	12U	2U	40U	1U	2.8	1589	NR
BH4387	09/08/87	24.70 - 26.00	5500	12U	2U	57	1U	2.4	1457	NR
BH4487	09/09/87	4.00 - 6.20	9070	12U	4.9	40U	1U	2.1	1830	NR
BH4487	09/09/87	14.50 - 16.40	7150	12U	2.8	43	1U	1.4	1150	NR
BH4487	09/09/87	19.50 - 22.00	11900	12U	4.3	40U	1U	3.0	2460	NR
BH4487	09/09/87	22.00 - 23.50	9840	12U	3.5	42	1U	2.9	2650	NR
BH4487	09/09/87	24.50 - 27.00	9020	12U	3.3	40U	1U	2.6	1990	NR
BH4587	08/31/87	0.00 - 9.50	10300	12U	10	40	1U	3.4	58800	NR
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	6120	12U	11	40U	1U	2.9	17600	NR
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	10700	12U	14	43	1U	4.1	3540	NR
BH4687	09/02/87	0.00 - 9.00	8830	12U	3.0	82.8	1U	2.3	11684	NR
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	5850	12U	2.6	40U	1U	2.3	4908	NR
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH4187	08/17/87	12.00 - 14.50	9.9	10U	8.9	9310	6.9	NR	1760	178
BH4187	08/17/87	14.50 - 17.00	7.6	10U	9.9	8960	13	NR	2010	86
BH4287	08/18/87	0.00 - 8.30	14	10U	11	8420	3.9	NR	2240	121
BH4287	08/18/87	0.00 - 8.30	15	10U	12	9130	4.0	NR	2360	144
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	15	10U	16	9080	13	NR	1890	587
BH4287	08/18/87	22.00 - 24.50	8.4	10U	7.2	8030	4.5	NR	1700	135
BH4387	09/04/87	0.00 - 1.60	13	10U	7.4	14300	6.1	NR	2353	202
BH4387	09/04/87	2.00 - 3.60	3.0	10U	5U	7580	3.4	NR	2248	87
BH4387	09/04/87	4.00 - 5.30	2.4	10U	5U	8130	2.7	NR	1984	50
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	20	10U	7.0	7360	1.5	NR	1711	153
BH4387	09/04/87	12.00 - 12.90	17	10U	5.9	7040	1.6	NR	1171	107
BH4387	09/04/87	14.50 - 15.80	58	10U	7.5	9280	3.2	NR	1432	232
BH4387	09/04/87	17.00 - 18.30	10	10U	6.8	7830	3.0	NR	1194	121
BH4387	09/08/87	22.20 - 23.20	34	10U	6.5	8010	2.4	NR	1296	92
BH4387	09/08/87	24.70 - 26.00	24	10U	7.9	10700	2.4	NR	1000U	246
BH4487	09/09/87	4.00 - 6.20	9.0	10U	10	9100	6.4	NR	1520	145
BH4487	09/09/87	14.50 - 16.40	9.7	10U	6.5	8780	3.0	NR	1780	255
BH4487	09/09/87	19.50 - 22.00	11	10U	7.1	12900	4.6	NR	1960	100
BH4487	09/09/87	22.00 - 23.50	13	10U	9.0	11000	8.8	NR	1860	116
BH4487	09/09/87	24.50 - 27.00	12	10U	12	10700	2.4	NR	1610	101
BH4587	08/31/87	0.00 - 9.50	12	10U	5U	15700	6.4	NR	3020	101
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	7.6	10U	5.6	8450	4.5	NR	1530	179
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	13	10U	9.8	12400	8.9	NR	2480	126
BH4687	09/02/87	0.00 - 9.00	16	10U	8.1	9650	4.1	NR	1581	249
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	10	10U	10	9300	2.8	NR	1128	302
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH4187	08/17/87	12.00 - 14.50	0.1 U	NR	8U	1000U	1U	2U	1000U	18 J
BH4187	08/17/87	14.50 - 17.00	0.1 U	NR	9.4	1000U	1U	2U	1000U	26
BH4287	08/18/87	0.00 - 8.30	0.1 U	NR	16	1240	1U	2U	1000U	54
BH4287	08/18/87	0.00 - 8.30	0.1 U	NR	16	1240	1U	2U	1000U	46
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4287	08/18/87	17.00 - 18.80	0.1 U	NR	23	1020	1U	2U	1000U	20U
BH4287	08/18/87	22.00 - 24.50	0.1 U	NR	8U	1070	1U	2U	1000U	14 J
BH4387	09/04/87	0.00 - 1.60	0.1	NR	13	2312	1U	2U	1000U	20U
BH4387	09/04/87	2.00 - 3.60	0.1 U	NR	8U	1000U	1U	2U	1000U	53
BH4387	09/04/87	4.00 - 5.30	0.1 U	NR	8U	1000U	1U	2U	1000U	27
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4387	09/04/87	9.50 - 10.30	0.1 U	NR	10	1000U	1U	2U	1000U	20U
BH4387	09/04/87	12.00 - 12.90	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4387	09/04/87	14.50 - 15.80	0.13	NR	8U	1000U	1U	2U	1000U	20U
BH4387	09/04/87	17.00 - 18.30	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4387	09/08/87	22.20 - 23.20	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4387	09/08/87	24.70 - 26.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4487	09/09/87	4.00 - 6.20	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4487	09/09/87	14.50 - 16.40	0.1 U	NR	8U	1110	1U	2U	1000U	20U
BH4487	09/09/87	19.50 - 22.00	0.1 U	NR	8U	1490	1U	2U	1000U	20U
BH4487	09/09/87	22.00 - 23.50	0.1 U	NR	8U	1160	1U	2U	1000U	20U
BH4487	09/09/87	24.50 - 27.00	0.1 U	NR	8U	1430	1U	2U	1000U	20U
BH4587	08/31/87	0.00 - 9.50	0.1 U	NR	8U	1000U	1U	2U	1000U	48
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	9.50 - 17.00	0.1 U	NR	8U	1000U	1U	2U	1000U	15 J
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4587	08/31/87	17.50 - 19.90	0.1 U	NR	8.6	2140	1U	2U	1000U	18 J
BH4687	09/02/87	0.00 - 9.00	0.1 U	NR	10	1063	1U	2U	1000U	20U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4687	09/02/87	9.50 - 17.80	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH4187	08/17/87	12.00 - 14.50	2U	NR	22	48
BH4187	08/17/87	14.50 - 17.00	2U	NR	24	55
BH4287	08/18/87	0.00 - 8.30	2U	NR	24	17
BH4287	08/18/87	0.00 - 8.30	2U	NR	25	21
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4287	08/18/87	17.00 - 18.80	2U	NR	28	23
BH4287	08/18/87	22.00 - 24.50	2U	NR	16	24
BH4387	09/04/87	0.00 - 1.60	2U	NR	29	32
BH4387	09/04/87	2.00 - 3.60	2U	NR	16	7.6
BH4387	09/04/87	4.00 - 5.30	2U	NR	14	4U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4387	09/04/87	9.50 - 10.30	2U	NR	22	9.6
BH4387	09/04/87	12.00 - 12.90	2U	NR	14	5.1
BH4387	09/04/87	14.50 - 15.80	2U	NR	15	8.8
BH4387	09/04/87	17.00 - 18.30	2U	NR	20	6.8
BH4387	09/08/87	22.20 - 23.20	2U	NR	15	9.4
BH4387	09/08/87	24.70 - 26.00	2U	NR	18	8.8
BH4487	09/09/87	4.00 - 6.20	2U	NR	15	6.7
BH4487	09/09/87	14.50 - 16.40	2U	NR	14	4.8
BH4487	09/09/87	19.50 - 22.00	2U	NR	21	17
BH4487	09/09/87	22.00 - 23.50	2U	NR	15	15
BH4487	09/09/87	24.50 - 27.00	2U	NR	13	17
BH4587	08/31/87	0.00 - 9.50	2U	NR	27	20
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4587	08/31/87	9.50 - 17.00	2U	NR	19	16
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4587	08/31/87	17.50 - 19.90	2U	NR	30	27
BH4687	09/02/87	0.00 - 9.00	2U	NR	21	9.5
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4687	09/02/87	9.50 - 17.80	2U	NR	24	6.7
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	10900	12U	9.4	96	1U	2.0	51600	NR
BH4787	09/11/87	2.00 - 3.64	9870	12U	10.5	96	1U	2.0	90200	NR
BH4787	09/11/87	4.00 - 5.32	9440	12U	11.7	68	1U	1.4	108000	NR
BH4787	09/11/87	6.00 - 7.15	8660	12U	9.8	57	1U	1.9	58500	NR
BH4787	09/11/87	8.00 - 9.00	6040	12U	7.3	40U	1U	2.6	17400	NR
BH4787	09/11/87	9.50 - 10.52	6050	12U	7.9	41	1U	1.2	14900	NR
BH4787	09/11/87	11.50 - 12.66	4730	12U	5.3	40U	1U	1.2	2390	NR
BH4787	09/11/87	13.50 - 14.78	4370	12U	3.6	40U	1U	1.0	1200	NR
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	6610	12U	4.0	40U	1U	1U	5340	NR
BH4787	09/14/87	20.50 - 21.00	6760	12U	4.3	40U	1U	1U	1640	NR
BH4787	09/14/87	21.00 - 22.50	8240	12U	2.7	40U	1U	1U	2240	NR
BH4787	09/14/87	22.50 - 24.30	4360	12U	3.2	40U	1U	1U	1220	NR
BH4887	09/16/87	6.00 - 7.14	12700	12U	22.8	56.6	1U	2.4	109000	NR
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	9250	12U	13.7	42	1U	2.4	23000	NR
BH4987	09/18/87	8.00 - 15.54	15100	12U	9.5	40U	1.0	3.6	6450	NR
BH4987	09/21/87	20.00 - 22.00	6640	12U	3.8	40U	1U	1U	1760	NR
BH4987	09/21/87	22.00 - 24.00	7950	12U	3.5	40U	1U	1U	3390	NR
BH5087	09/17/87	7.00 - 8.90	13300	12U	25.7	40U	1U	2.8	13100	NR
BH5087	09/17/87	12.00 - 12.90	9560	12U	11.4	40U	1U	2.7	2450	NR
BH5187	09/18/87	0.00 - 9.00	25300	12U	28.4	99	1U	5.6	4080	NR
BH5187	09/22/87	12.00 - 14.40	12000	12U	3.4	40U	1U	1U	26100	NR
BH5187	09/22/87	14.50 - 17.00	11600	12U	2.8	42.5	1U	1.2	4140	NR
BH5287	09/22/87	0.00 - 9.50	12600	12U	4.8	112	1U	1.2	175000	NR
BH5287	09/22/87	12.00 - 13.00	7760	12U	5.7	40	1U	1.0	4280	NR
BH5387	09/11/87	0.00 - 18.80	9850	12U	8.9	140	1U	2.3	75600	NR
BH5387	09/11/87	2.00 - 3.50	10900	12U	14.6	103	1U	2.0	102000	NR
BH5387	09/11/87	6.00 - 7.80	7410	12U	6.8	40U	1U	1.3	31100	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	8.1	10U	5U	11200	8.7	NR	2360	192
BH4787	09/11/87	2.00 - 3.64	9.6	10U	5U	10300	4.5	NR	2450	120
BH4787	09/11/87	4.00 - 5.32	4.8	10U	5U	8900	4.6	NR	2640	57
BH4787	09/11/87	6.00 - 7.15	19	10U	5U	10100	3.6	NR	2040	116
BH4787	09/11/87	8.00 - 9.00	18	10U	5.2	24500	2.6	NR	1260	193
BH4787	09/11/87	9.50 - 10.52	15	10U	5U	7790	2.5	NR	1760	195
BH4787	09/11/87	11.50 - 12.66	10	10U	5U	5880	2.3	NR	1070	76
BH4787	09/11/87	13.50 - 14.78	5.3	10U	6.3	6120	3.0	NR	1000U	112
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	8.7	10U	6.6	8400	6.8	NR	1300	73.1
BH4787	09/14/87	20.50 - 21.00	16	10U	8.2	9930	4.8	NR	1850	138
BH4787	09/14/87	21.00 - 22.50	18	10U	7.1	11900	3.0	NR	3440	162
BH4787	09/14/87	22.50 - 24.30	8.7	10U	7.9	9810	2.9	NR	1000	85.5
BH4887	09/16/87	6.00 - 7.14	9.3	10U	5U	10200	5.4	NR	3110	63.6
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	15.2	10U	10.5	9690	2.8	NR	1800	170
BH4987	09/18/87	8.00 - 15.54	18.2	10U	13	16800	4.8	NR	2900	50.6
BH4987	09/21/87	20.00 - 22.00	7.5	10U	6.2	8830	2.9	NR	1360	147
BH4987	09/21/87	22.00 - 24.00	7.4	10U	10.6	3510	10.5	NR	1160	11.5
BH5087	09/17/87	7.00 - 8.90	10.2	10U	6.0	12400	2.6	NR	3190	74.6
BH5087	09/17/87	12.00 - 12.90	11.3	10U	13.1	14800	1.2	NR	1710	203
BH5187	09/18/87	0.00 - 9.00	20.6	10U	11.2	20200	45.6	NR	2810	144
BH5187	09/22/87	12.00 - 14.40	13.3	10U	7.5	10500	3.6	NR	2840	75.4
BH5187	09/22/87	14.50 - 17.00	11	10U	9.4	10700	5.8	NR	3120	88
BH5287	09/22/87	0.00 - 9.50	9.1	10U	5U	8780	4.3	NR	4070	68.4
BH5287	09/22/87	12.00 - 13.00	8.3	10U	8.3	8440	6.0	NR	1490	222
BH5387	09/11/87	0.00 - 18.80	7.3	10U	6.9	9320	7.2	NR	2350	228
BH5387	09/11/87	2.00 - 3.50	7.4	10U	5U	10700	5.1	NR	2720	103
BH5387	09/11/87	6.00 - 7.80	6.9	10U	4.7	9880	2.6	NR	2440	128

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/11/87	0.00 - 1.40	0.1 U	NR	8U	2120	1U	2U	1000U	32
BH4787	09/11/87	2.00 - 3.64	0.1 U	NR	8U	1180	1U	2U	1000U	62
BH4787	09/11/87	4.00 - 5.32	0.1 U	NR	8U	1000U	1U	2U	1000U	79
BH4787	09/11/87	6.00 - 7.15	0.1 U	NR	8U	1000U	1U	2U	1000U	55
BH4787	09/11/87	8.00 - 9.00	0.1 U	NR	16	1000U	1U	2U	1000U	28
BH4787	09/11/87	9.50 - 10.52	0.1 U	NR	9.8	1000U	1U	2U	1000U	20
BH4787	09/11/87	11.50 - 12.66	0.1 U	NR	8U	1000U	1U	2U	1000U	14 J
BH4787	09/11/87	13.50 - 14.78	0.1 U	NR	10	1000U	1U	2U	1000U	20U
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4787	09/14/87	16.00 - 17.62	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4787	09/14/87	20.50 - 21.00	0.1 U	NR	9.7	1140	1U	2U	1000U	20U
BH4787	09/14/87	21.00 - 22.50	0.1 U	NR	11.8	1000U	1U	2U	1000U	20U
BH4787	09/14/87	22.50 - 24.30	0.1 U	NR	8.0	1000U	1U	2U	1000U	20U
BH4887	09/16/87	6.00 - 7.14	0.1 U	NR	11.9	1200	1U	2U	1000U	76.8
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS							
BH4987	09/18/87	6.00 - 7.30	0.30	NR	25.5	1260	1U	2U	1000U	20U
BH4987	09/18/87	8.00 - 15.54	0.1 U	NR	12.2	1830	1U	2U	1000U	20U
BH4987	09/21/87	20.00 - 22.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4987	09/21/87	22.00 - 24.00	0.13	NR	8U	1000U	1U	2U	1000U	32
BH5087	09/17/87	7.00 - 8.90	0.12	NR	10.2	1860	1U	2U	1000U	27.2
BH5087	09/17/87	12.00 - 12.90	0.12	NR	12.5	1250	1U	2U	1000U	20U
BH5187	09/18/87	0.00 - 9.00	0.15	NR	15.8	2620	1U	2U	1000U	27
BH5187	09/22/87	12.00 - 14.40	0.14	NR	8U	1310	1U	2U	1000U	20U
BH5187	09/22/87	14.50 - 17.00	0.17	NR	8.3	1150	1U	2U	1000U	20U
BH5287	09/22/87	0.00 - 9.50	0.15	NR	9.6	1400	1U	2U	1000U	170
BH5287	09/22/87	12.00 - 13.00	0.23	NR	8U	1020	1U	2U	1000U	20U
BH5387	09/11/87	0.00 - 18.80	0.1 U	NR	8.5	1970	1U	2U	1000U	59
BH5387	09/11/87	2.00 - 3.50	0.1 U	NR	10	1070	1U	2U	1000U	73
BH5387	09/11/87	6.00 - 7.80	0.1 U	NR	12	1000U	1U	2U	1000U	33

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4787	09/11/87	0.00 - 1.40	2U	NR	25	27
BH4787	09/11/87	2.00 - 3.64	2U	NR	21	15
BH4787	09/11/87	4.00 - 5.32	2U	NR	18	8.5
BH4787	09/11/87	6.00 - 7.15	2U	NR	19	9.9
BH4787	09/11/87	8.00 - 9.00	2U	NR	22	8.8
BH4787	09/11/87	9.50 - 10.52	2U	NR	18	14
BH4787	09/11/87	11.50 - 12.66	2U	NR	13	6.3
BH4787	09/11/87	13.50 - 14.78	2U	NR	17	7.8
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4787	09/14/87	16.00 - 17.62	2U	NR	16.5	13.6
BH4787	09/14/87	20.50 - 21.00	2U	NR	16	18.8
BH4787	09/14/87	21.00 - 22.50	2U	NR	18	28.8
BH4787	09/14/87	22.50 - 24.30	2U	NR	19	17.6
BH4887	09/16/87	6.00 - 7.14	2U	NR	25.1	21
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR TOTAL METALS ANALYSIS			
BH4987	09/18/87	6.00 - 7.30	2U	NR	22.2	14.8
BH4987	09/18/87	8.00 - 15.54	2U	NR	35.6	25
BH4987	09/21/87	20.00 - 22.00	2U	NR	22.9	17.6
BH4987	09/21/87	22.00 - 24.00	2U	NR	17.5	28.5
BH5087	09/17/87	7.00 - 8.90	2U	NR	22	23.6
BH5087	09/17/87	12.00 - 12.90	2U	NR	36	19.8
BH5187	09/18/87	0.00 - 9.00	2U	NR	36.2	36.2
BH5187	09/22/87	12.00 - 14.40	2U	NR	13.8	16.9
BH5187	09/22/87	14.50 - 17.00	2U	NR	19.6	24.2
BH5287	09/22/87	0.00 - 9.50	2U	NR	18.8	17.8
BH5287	09/22/87	12.00 - 13.00	2U	NR	17.9	15.5
BH5387	09/11/87	0.00 - 18.80	2U	NR	28	30
BH5387	09/11/87	2.00 - 3.50	2U	NR	31	14
BH5387	09/11/87	6.00 - 7.80	2U	NR	27	12

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH5387	09/11/87	8.00 - 9.90	6520	12U	7.0	40U	1U	1.4	9060	NR
BH5387	09/14/87	14.20 - 16.20	5530	12U	3.0	40U	1U	1U	1170	NR
BH5387	09/14/87	16.20 - 17.90	13100	12U	5.3	54	1U	2.3	3100	NR
BH5387	09/14/87	18.60 - 20.60	5050	12U	4.4	40U	1U	1.1	1610	NR
BH5387	09/14/87	20.60 - 22.60	6390	12U	3.4	40U	1U	1.1	4180	NR
BH5487	09/15/87	2.00 - 4.00	3620	12U	3.1	154	1U	1U	169000	NR
BH5487	09/16/87	6.00 - 7.50	15100	12U	29.6	53.4	1U	2.1	58300	NR
BH5487	09/16/87	8.00 - 9.65	7350	12U	10.7	40U	1U	1.2	51000	NR
BH5487	09/16/87	10.00 - 11.50	8310	12U	12.5	40U	1U	1.8	17400	NR
BH5487	09/16/87	12.20 - 14.20	10300	12U	14.6	50.9	1U	2.0	9940	NR
BH5487	09/18/87	14.20 - 22.80	24200	12U	30.8	79	1.1	5.5	4620	NR
BH5487	09/21/87	23.50 - 32.80	11900	12U	5.5	64.8	1U	1.9	2540	NR
BH5487	09/21/87	38.50 - 39.00	3170	12U	2U	40U	1U	1U	1520	NR
BH5487	09/21/87	40.50 - 41.00	4520	12U	2U	40U	1U	1U	1170	NR
BH5587	09/15/87	2.00 - 3.30	11900	12U	12.7	91	1U	2.4	80000	NR
BH5587	09/15/87	9.50 - 10.90	7290	12U	4.6	40U	1U	1.4	10300	NR
BH5587	09/15/87	12.00 - 14.00	8410	12U	5.7	40U	1U	1.7	2840	NR
BH5587	09/15/87	14.50 - 23.50	20500	12U	12.8	74	1.3	3.8	6240	NR
BH5587	09/15/87	27.00 - 29.20	7140	12U	3.1	40U	1U	1.3	2660	NR
BH5587	09/09/87	29.50 - 32.00	5590	12U	2U	40U	1U	1.1	3650	NR
BH5687	09/10/87	2.00 - 3.50	8590	12U	3.5	107	1U	1.7	217000	NR
BH5687	09/10/87	4.00 - 5.30	7910	12U	3.4	63	1U	2.6	63600	NR
BH5687	09/10/87	9.50 - 10.40	5860	12U	4.7	40U	1U	1.4	13300	NR
BH5687	09/10/87	12.00 - 14.00	6300	12U	4.0	40U	1U	1.8	7950	NR
BH5687	09/11/87	17.00 - 18.90	4090	12U	7.1	40U	1U	1U	4630	NR
BH5687	09/11/87	19.50 - 22.00	4540	12U	4.5	40U	1U	1U	3830	NR

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	3980	12U	9.7	94	1U	2.1	2630	NR
BH3987	08/12/87	19.50 - 22.00	3040	12U	6.6	40U	1U	4.0	2060	NR
BH4287	08/19/87	24.50 - 27.00	4900	12U	9.3	46	1U	1U	2160	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH5387	09/11/87	8.00 - 9.90	3.9	10U	5U	7030	3.0	NR	1750	125
BH5387	09/14/87	14.20 - 16.20	6.1	10U	6.3	8000	2.5	NR	2470	74.1
BH5387	09/14/87	16.20 - 17.90	9.3	10U	10.8	14400	8.9	NR	3500	297
BH5387	09/14/87	18.60 - 20.60	5.0	10U	10.1	12500	4.3	NR	1150	124
BH5387	09/14/87	20.60 - 22.60	4.4	10U	6.0	7360	7.2	NR	1680	25.2
BH5487	09/15/87	2.00 - 4.00	2U	10U	5U	3830	1.8	NR	2630	37.1
BH5487	09/16/87	6.00 - 7.50	10.5	10U	8.2	14600	3.6	NR	3500	79.4
BH5487	09/16/87	8.00 - 9.65	9.1	10U	6.7	8360	2.2	NR	1920	73.5
BH5487	09/16/87	10.00 - 11.50	10	10U	7.3	10300	2.8	NR	1730	179
BH5487	09/16/87	12.20 - 14.20	12.7	10U	11.5	12900	4.2	NR	1790	256
BH5487	09/18/87	14.20 - 22.80	24.6	10U	17.3	19700	6.8	NR	4950	165
BH5487	09/21/87	23.50 - 32.80	10.4	10U	11.8	12000	5.5	NR	2490	164
BH5487	09/21/87	38.50 - 39.00	5.1	10U	5U	3630	2.2	NR	1000U	35.4
BH5487	09/21/87	40.50 - 41.00	7.8	10U	6.8	6970	2.5	NR	1780	104
BH5587	09/15/87	2.00 - 3.30	3.8	10U	5U	10100	2.1	NR	2710	78.4
BH5587	09/15/87	9.50 - 10.90	13	10U	5U	9120	2.6	NR	1440	62.3
BH5587	09/15/87	12.00 - 14.00	7.7	10U	5.2	11600	3.7	NR	1770	104
BH5587	09/15/87	14.50 - 23.50	14	10U	6.7	17700	11.9	NR	4160	90.1
BH5587	09/15/87	27.00 - 29.20	4.7	10U	5U	8280	9.7	NR	1640	124
BH5587	09/09/87	29.50 - 32.00	2.3	10U	5U	4920	8.5	NR	1370	18.6
BH5687	09/10/87	2.00 - 3.50	5.7	10U	11	6500	2.7	NR	3710	95
BH5687	09/10/87	4.00 - 5.30	23	10U	8.1	7990	2.9	NR	2380	149
BH5687	09/10/87	9.50 - 10.40	14	10U	11	8500	2.4	NR	1380	292
BH5687	09/10/87	12.00 - 14.00	18	10U	12	10400	4.1	NR	1590	168
BH5687	09/11/87	17.00 - 18.90	5.8	10U	6.7	8150	3.1	NR	1120	94
BH5687	09/11/87	19.50 - 22.00	2U	10U	5U	3920	7.5	NR	1140	39

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BH3987	08/12/87	17.00 - 19.50	5.4	10U	9.8	13600	12	NR	1000U	453
BH3987	08/12/87	19.50 - 22.00	4.2	10U	8.3	9080	6.1	NR	1000U	78
BH4287	08/19/87	24.50 - 27.00	4.0	10U	7.8	6000	8.0	NR	1000U	156

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH5387	09/11/87	8.00 - 9.90	0.1 U	NR	9.0	1220	1U	2U	1000U	14 J
BH5387	09/14/87	14.20 - 16.20	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH5387	09/14/87	16.20 - 17.90	0.1 U	NR	16.1	2290	1U	2U	1000U	20U
BH5387	09/14/87	18.60 - 20.60	0.1 U	NR	10.6	1000U	1U	2U	1000U	20U
BH5387	09/14/87	20.60 - 22.60	0.1 U	NR	8U	1000U	1U	2U	1000U	21.7
BH5487	09/15/87	2.00 - 4.00	0.1 U	NR	9.2	1000U	1U	2U	1000U	196
BH5487	09/16/87	6.00 - 7.50	0.1 U	NR	12	1620	1U	2U	1000U	45.6
BH5487	09/16/87	8.00 - 9.65	0.34	NR	8U	1070	1U	2U	1000U	39.2
BH5487	09/16/87	10.00 - 11.50	0.1 U	NR	9.6	1270	1U	2U	1000U	20U
BH5487	09/16/87	12.20 - 14.20	0.1 U	NR	10.9	1640	1U	2U	1000U	20U
BH5487	09/18/87	14.20 - 22.80	0.1 U	NR	16	4170	1U	2U	1000U	20U
BH5487	09/21/87	23.50 - 32.80	0.1 U	NR	8.5	1760	1U	2U	1000U	20U
BH5487	09/21/87	38.50 - 39.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH5487	09/21/87	40.50 - 41.00	0.15	NR	8U	1000U	1U	2U	1000U	20U
BH5587	09/15/87	2.00 - 3.30	0.1 U	NR	19.5	1250	1U	2U	1000U	72.7
BH5587	09/15/87	9.50 - 10.90	0.1 U	NR	10.4	1000U	1U	2U	1000U	20U
BH5587	09/15/87	12.00 - 14.00	0.1 U	NR	12.8	1000	1U	2U	1000U	20U
BH5587	09/15/87	14.50 - 23.50	0.1 U	NR	17.9	1980	1U	2U	1000U	22.8
BH5587	09/15/87	27.00 - 29.20	0.1 U	NR	13.1	1000U	1U	2U	1000U	20U
BH5587	09/09/87	29.50 - 32.00	0.1 U	NR	9.1	1000U	1U	2U	1000U	20U
BH5687	09/10/87	2.00 - 3.50	0.19	NR	8U	1000U	1U	2U	1000U	163
BH5687	09/10/87	4.00 - 5.30	0.1 U	NR	9.0	1100	1U	2U	1000U	56
BH5687	09/10/87	9.50 - 10.40	0.1 U	NR	8.0	1000U	1U	2U	1000U	16 J
BH5687	09/10/87	12.00 - 14.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH5687	09/11/87	17.00 - 18.90	0.1 U	NR	8.8	1000U	1U	2U	1000U	20U
BH5687	09/11/87	19.50 - 22.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U

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BH3987	08/12/87	17.00 - 19.50	0.1 U	NR	9.8	1000U	1U	2U	1000U	22
BH3987	08/12/87	19.50 - 22.00	0.1 U	NR	8.6	1000U	1U	2U	1000U	20
BH4287	08/19/87	24.50 - 27.00	0.1 U	NR	8U	1000U	1U	2U	1000U	19 J

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH5387	09/11/87	8.00 - 9.90	2U	NR	20	10
BH5387	09/14/87	14.20 - 16.20	2U	NR	15.1	14.6
BH5387	09/14/87	16.20 - 17.90	2U	NR	25.7	34.3
BH5387	09/14/87	18.60 - 20.60	2U	NR	33.4	19.7
BH5387	09/14/87	20.60 - 22.60	2U	NR	14.4	15.7
BH5487	09/15/87	2.00 - 4.00	2U	NR	11	10.3
BH5487	09/16/87	6.00 - 7.50	2U	NR	36.7	23.9
BH5487	09/16/87	8.00 - 9.65	2U	NR	14.4	15.2
BH5487	09/16/87	10.00 - 11.50	2U	NR	19.8	17.3
BH5487	09/16/87	12.20 - 14.20	2U	NR	23.6	19.8
BH5487	09/18/87	14.20 - 22.80	2U	NR	40.2	48.2
BH5487	09/21/87	23.50 - 32.80	2U	NR	21.5	26.7
BH5487	09/21/87	38.50 - 39.00	2U	NR	10U	10.7
BH5487	09/21/87	40.50 - 41.00	2U	NR	13.9	25.7
BH5587	09/15/87	2.00 - 3.30	2U	NR	25.2	20.2
BH5587	09/15/87	9.50 - 10.90	2U	NR	16.6	12.6
BH5587	09/15/87	12.00 - 14.00	2U	NR	28.8	16.7
BH5587	09/15/87	14.50 - 23.50	2U	NR	36.1	41.3
BH5587	09/15/87	27.00 - 29.20	2U	NR	16.8	27.7
BH5587	09/09/87	29.50 - 32.00	2U	NR	10U	27.3
BH5687	09/10/87	2.00 - 3.50	2U	NR	13	4.5
BH5687	09/10/87	4.00 - 5.30	2U	NR	18	6.5
BH5687	09/10/87	9.50 - 10.40	2U	NR	22	4.4
BH5687	09/10/87	12.00 - 14.00	2U	NR	26	9.2
BH5687	09/11/87	17.00 - 18.90	2U	NR	25	11
BH5687	09/11/87	19.50 - 22.00	2U	NR	11	16

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BH3987	08/12/87	17.00 - 19.50	2U	NR	14	34
BH3987	08/12/87	19.50 - 22.00	2U	NR	16	48
BH4287	08/19/87	24.50 - 27.00	2U	NR	21	27

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH4287	08/19/87	27.00 - 29.50	7040	12U	8.0	174	1U	2.8	3600	NR
BH4287	08/19/87	29.50 - 32.00	4840	12U	6.4	397	1U	2.5	2750	NR
BH4287	08/19/87	32.00 - 34.50	3290	12U	3.8	52	1U	1.1	1680	NR
BH4287	08/19/87	34.50 - 35.90	775	12U	2U	40U	1U	1U	1000U	NR
BH4287	08/19/87	37.00 - 39.50	982	12U	3.0	40U	1U	1U	1000U	NR
BH4287	08/20/87	39.50 - 40.40	344	12U	2U	40U	1U	1U	1000U	NR
BH4287	08/21/87	45.50 - 47.00	1700	12U	9.0	40U	1U	1U	1000U	NR
BH4487	09/09/87	29.50 - 32.00	861	12U	2U	40U	1U	1U	1000U	NR
BH4487	09/09/87	32.00 - 34.50	5430	12U	3.8	86	1U	2.1	3580	NR
BH4587	08/31/87	20.00 - 22.30	5160	12U	5.4	40U	1U	2.6	2150	NR
BH4587	08/31/87	22.50 - 25.00	6430	12U	9.9	92	1U	3.0	4050	NR
BH4587	09/01/87	32.50 - 33.90	3289	12U	2U	40U	1U	1U	2085.5	NR
BH4587	09/01/87	35.00 - 37.50	3026	12U	2U	40U	1U	1.0	1682	NR
BH5187	09/22/87	17.00 - 19.50	9310	12U	3.8	40U	1U	1U	3900	NR
BH5687	09/11/87	22.00 - 24.30	6670	12U	6.1	40U	1U	1.3	5140	NR

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	4260	12U	25	413	1U	4.3	3720	NR
BH4087	08/13/87	9.50 - 12.00	4450	12U	6.0	40U	1U	1U	3940	NR
BH4187	08/17/87	17.00 - 19.50	8520	12U	13	56	1U	1.6	5470	NR
BH4387	09/08/87	27.20 - 29.70	5370	12U	4.0	170	1U	3.2	3803	NR
BH4387	09/08/87	29.70 - 32.00	8210	12U	5.2	127	1U	3.6	4888	NR
BH4387	09/08/87	29.70 - 32.00	8490	12U	4.0	87	1U	2.8	4340	NR
BH4587	08/31/87	25.00 - 27.50	6740	12U	9.8	66	1U	3.6	4650	NR
BH4587	08/31/87	27.50 - 30.00	7430	12U	13	226	1.0	6.1	5350	NR
BH4587	08/31/87	30.00 - 32.50	6520	12U	14	139	1U	4.5	4120	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH4287	08/19/87	27.00 - 29.50	13	10U	16	14000	6.7	NR	1160	757
BH4287	08/19/87	29.50 - 32.00	13	10U	15	18200	5.9	NR	1000U	1670
BH4287	08/19/87	32.00 - 34.50	8.9	10U	11	6130	1.9	NR	1000U	176
BH4287	08/19/87	34.50 - 35.90	2U	10U	5U	1290	1U	NR	1000U	38
BH4287	08/19/87	37.00 - 39.50	2U	10U	5U	1290	1U	NR	1000U	23
BH4287	08/20/87	39.50 - 40.40	2U	10U	5U	271	1U	NR	1000U	3U
BH4287	08/21/87	45.50 - 47.00	3.2	10U	5U	3470	1.7	NR	1000U	34
BH4487	09/09/87	29.50 - 32.00	2U	10U	5U	1230	2.2	NR	1000U	7.4
BH4487	09/09/87	32.00 - 34.50	7.6	10U	14	12200	10.6	NR	1320	250
BH4587	08/31/87	20.00 - 22.30	5.0	10	5U	5780	5.2	NR	1340	21
BH4587	08/31/87	22.50 - 25.00	7.4	16	10	10900	15	NR	1560	314
BH4587	09/01/87	32.50 - 33.90	5.8	10U	6.5	5530	4.7	NR	1000U	71
BH4587	09/01/87	35.00 - 37.50	3.7	10U	5.8	5380	3.9	NR	1000U	25
BH5187	09/22/87	17.00 - 19.50	5.8	10U	5U	7530	6.2	NR	2250	20.5
BH5687	09/11/87	22.00 - 24.30	3.1	10U	6.8	3400	12.5	NR	1340	64

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	2.5	10U	13	40800	11	NR	1230	3090
BH4087	08/13/87	9.50 - 12.00	2.1	10U	5U	1750	8.2	NR	1000U	3.7
BH4187	08/17/87	17.00 - 19.50	8.3	10U	6.8	6400	14	NR	1810	34
BH4387	09/08/87	27.20 - 29.70	5.6	10U	13	11900	5.9	NR	1219	706
BH4387	09/08/87	29.70 - 32.00	8.2	15	17	18500	10	NR	1839	457
BH4387	09/08/87	29.70 - 32.00	8.8	10U	14	13400	10.4	NR	1770	142
BH4587	08/31/87	25.00 - 27.50	8.0	10U	11	12500	14	NR	1680	140
BH4587	08/31/87	27.50 - 30.00	8.1	13	17	32600	19	NR	1810	3540
BH4587	08/31/87	30.00 - 32.50	6.0	13	13	15800	13	NR	1600	462

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH4287	08/19/87	27.00 - 29.50	0.1 U	NR	22	1000U	1U	2U	1000U	27
BH4287	08/19/87	29.50 - 32.00	0.1 U	NR	21	1000U	1U	2U	1000U	24
BH4287	08/19/87	32.00 - 34.50	0.1 U	NR	12	1000U	1U	2U	1000U	17 J
BH4287	08/19/87	34.50 - 35.90	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4287	08/19/87	37.00 - 39.50	0.1 U	NR	8.0 U	1000U	1U	2U	1000U	20U
BH4287	08/20/87	39.50 - 40.40	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4287	08/21/87	45.50 - 47.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4487	09/09/87	29.50 - 32.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4487	09/09/87	32.00 - 34.50	0.1 U	NR	12	1000U	1U	2U	1000U	24
BH4587	08/31/87	20.00 - 22.30	0.1 U	NR	8U	1250	1U	2U	1000U	15 J
BH4587	08/31/87	22.50 - 25.00	0.1 U	NR	15	1400	1U	2U	1000U	27
BH4587	09/01/87	32.50 - 33.90	0.23	NR	8U	1000U	1U	2U	1000U	20U
BH4587	09/01/87	35.00 - 37.50	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH5187	09/22/87	17.00 - 19.50	0.12	NR	8U	1000U	1U	2U	1000U	20U
BH5687	09/11/87	22.00 - 24.30	0.1 U	NR	8.3	1000U	1U	2U	1000U	25

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	0.1 U	NR	13	1000U	1U	2U	1400	25
BH4087	08/13/87	9.50 - 12.00	0.1 U	NR	8U	1000U	1U	2U	1000U	15 J
BH4187	08/17/87	17.00 - 19.50	0.1 U	NR	8U	1000U	1U	2U	1000U	28
BH4387	09/08/87	27.20 - 29.70	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH4387	09/08/87	29.70 - 32.00	0.17	NR	15	1000U	1U	2U	1000U	32
BH4387	09/08/87	29.70 - 32.00	0.1 U	NR	8U	1000U	1U	2U	1000U	39
BH4587	08/31/87	25.00 - 27.50	0.1 U	NR	10	1330	1U	2U	1000U	32
BH4587	08/31/87	27.50 - 30.00	0.1 U	NR	23	1400	1U	2U	1000U	41
BH4587	08/31/87	30.00 - 32.50	0.25	NR	8.2	1350	1U	2U	1000U	26

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH4287	08/19/87	27.00 - 29.50	2U	NR	33	40
BH4287	08/19/87	29.50 - 32.00	2U	NR	26	35
BH4287	08/19/87	32.00 - 34.50	2U	NR	26	23
BH4287	08/19/87	34.50 - 35.90	2U	NR	10U	5.6
BH4287	08/19/87	37.00 - 39.50	2U	NR	10U	5.8
BH4287	08/20/87	39.50 - 40.40	2U	NR	10U	4U
BH4287	08/21/87	45.50 - 47.00	2U	NR	11	12
BH4487	09/09/87	29.50 - 32.00	2U	NR	10U	4U
BH4487	09/09/87	32.00 - 34.50	2U	NR	23	47
BH4587	08/31/87	20.00 - 22.30	2U	NR	13	23
BH4587	08/31/87	22.50 - 25.00	2U	NR	30	43
BH4587	09/01/87	32.50 - 33.90	2U	NR	17	19
BH4587	09/01/87	35.00 - 37.50	2U	NR	10U	20
BH5187	09/22/87	17.00 - 19.50	2U	NR	15.2	19.7
BH5687	09/11/87	22.00 - 24.30	2U	NR	12	21

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	2U	NR	59	36
BH4087	08/13/87	9.50 - 12.00	2U	NR	10U	11
BH4187	08/17/87	17.00 - 19.50	2U	NR	14	45
BH4387	09/08/87	27.20 - 29.70	2U	NR	41	30
BH4387	09/08/87	29.70 - 32.00	2U	NR	29	60
BH4387	09/08/87	29.70 - 32.00	2U	NR	22	37
BH4587	08/31/87	25.00 - 27.50	2U	NR	28	50
BH4587	08/31/87	27.50 - 30.00	2U	NR	60	60
BH4587	08/31/87	30.00 - 32.50	2U	NR	32	49

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Aluminum (Al), total mg/kg	Antimony (Sb), total mg/kg	Arsenic (As), total mg/kg	Barium (Ba), total mg/kg	Beryllium (Be), total mg/kg	Cadmium (Cd), total mg/kg	Calcium (Ca), total mg/kg	Cesium (Cs), total mg/kg
BH4687	09/03/87	27.00 - 29.50	7960	12U	2.0	151.4	1.1	6.2	4409	NR
BH4687	09/03/87	29.50 - 32.00	5340	12U	2U	55.1	1U	2.2	3446	NR
BH4787	09/15/87	26.20 - 27.20	5640	12U	3.4	58	1U	1U	4000	NR
BH4787	09/15/87	26.20 - 27.20	3930	12U	2.5	56	1U	1U	2750	NR
BH4787	09/15/87	27.20 - 28.20	7870	12U	3.6	68	1U	1.6	3860	NR
BH4887	09/17/87	13.20 - 15.11	10300	12U	12.3	40U	1U	1.6	4920	NR
BH4887	09/17/87	15.20 - 16.70	10300	12U	10.1	40U	1U	1.9	4740	NR
BH4987	09/21/87	24.14 - 25.64	7190	12U	18.5	40U	1U	1U	3360	NR
BH5087	09/17/87	14.50 - 17.00	9780	12U	10.8	40U	1.0	1.6	4280	NR
BH5087	09/17/87	17.00 - 19.50	8230	12U	16.2	40U	1U	1.6	4160	NR
BH5287	09/22/87	22.00 - 24.00	8300	12U	8.4	40U	1U	1.3	3430	NR
BH5287	09/22/87	24.00 - 25.00	11900	12U	6.2	42.3	1U	1.6	4940	NR
BH5387	09/14/87	22.60 - 24.00	4220	12U	2.8	44	1U	1U	3130	NR
BH5487	09/21/87	42.50 - 44.00	4660	12U	2.3	161	1U	1U	2560	NR
BH5487	09/21/87	42.50 - 44.00	3990	12U	2U	49	1U	1U	2120	NR
BH5587	09/15/87	32.00 - 34.10	5680	12U	2U	40U	1U	1U	3420	NR
BH5587	09/15/87	32.00 - 34.10	5060	12U	2.8	40U	1U	1U	3400	NR
BH5587	09/15/87	34.50 - 36.60	6280	12U	3.0	40U	1U	1.2	3160	NR
BH5787	10/07/87	12.00 - 14.00	15400	12U	5.0	116	1U	2.1	10300	NR
BH5787	10/08/87	14.00 - 16.00	11300	12U	2.8	158	1.1	3.0	6330	NR
BH5787	10/08/87	16.00 - 18.00	9360	12U	4.2	108	1.3	2.8	6600	NR
BH5787	10/08/87	18.00 - 20.00	7950	12U	5.1	71.8	1U	2.0	3830	NR
BH5787	10/08/87	20.00 - 22.00	9140	12U	2U	78	1U	2.1	4370	NR
BH5787	10/08/87	22.00 - 24.00	9440	12U	2U	64	1U	2.6	4920	NR
BH5787	10/08/87	24.00 - 26.00	10800	12U	2U	79.7	1.7	6.6	5830	NR
BH5787	10/08/87	26.00 - 28.00	9180	12U	4.5	80	1U	2.4	5360	NR
BH5787	10/08/87	28.00 - 30.00	8810	12U	3.6	74.9	1U	2.6	5280	NR

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Chromium (Cr), total mg/kg	Cobalt (Co), total mg/kg	Copper (Cu), total mg/kg	Iron (Fe), total mg/kg	Lead (Pb), total mg/kg	Lithium (Li), total mg/kg	Magnesium (Mg), total mg/kg	Manganese (Mn), total mg/kg
BH4687	09/03/87	27.00 - 29.50	8.6	11	27	42700	8.8	NR	1798	584
BH4687	09/03/87	29.50 - 32.00	4.5	10U	10	8060	9.9	NR	1404	59
BH4787	09/15/87	26.20 - 27.20	6.9	11.8	5U	5950	7.6	NR	1530	73.1
BH4787	09/15/87	26.20 - 27.20	7.9	10U	6.1	8010	3.7	NR	1000U	180
BH4787	09/15/87	27.20 - 28.20	8.2	22.1	9.3	8340	7.6	NR	1820	87.5
BH4887	09/17/87	13.20 - 15.11	6.0	10U	5U	5300	10.6	NR	1970	15.7
BH4887	09/17/87	15.20 - 16.70	6.7	10U	5.2	12000	11.1	NR	2040	6.9
BH4987	09/21/87	24.14 - 25.64	9.2	10U	16.7	8210	33.6	NR	1190	25.9
BH5087	09/17/87	14.50 - 17.00	8.9	10U	11.1	3720	5.5	NR	2020	31.1
BH5087	09/17/87	17.00 - 19.50	8.1	10U	8.9	6490	5.6	NR	1810	18.6
BH5287	09/22/87	22.00 - 24.00	5.9	10U	5.2	9000	11	NR	2270	40.2
BH5287	09/22/87	24.00 - 25.00	9.3	10U	10.7	10300	11.4	NR	2920	23.5
BH5387	09/14/87	22.60 - 24.00	4.3	10U	6.0	3410	14.3	NR	1160	22.7
BH5487	09/21/87	42.50 - 44.00	4.0	10U	5U	3340	9.3	NR	1000U	105
BH5487	09/21/87	42.50 - 44.00	3.3	10U	5U	2330	7.0	NR	1000U	58
BH5587	09/15/87	32.00 - 34.10	2.6	10U	5U	2180	7.7	NR	1000U	21
BH5587	09/15/87	32.00 - 34.10	2.8	10U	5U	2130	7.9	NR	1000U	24.4
BH5587	09/15/87	34.50 - 36.60	5.0	10U	5.5	4720	12.8	NR	1000U	40.6
BH5787	10/07/87	12.00 - 14.00	11.2	13.1	7.6	11400	17	NR	3000	43.6
BH5787	10/08/87	14.00 - 16.00	8.4	10U	24.4	14600	22.1	NR	2670	95.7
BH5787	10/08/87	16.00 - 18.00	11.4	16.2	29.8	6910	20	NR	3350	120
BH5787	10/08/87	18.00 - 20.00	7.6	10U	9.8	7300	10.9	NR	2460	60.3
BH5787	10/08/87	20.00 - 22.00	9.0	10U	13.3	7820	15.4	NR	2750	62.2
BH5787	10/08/87	22.00 - 24.00	10.7	10U	21.7	11800	13.2	NR	3360	61.7
BH5787	10/08/87	24.00 - 26.00	14.8	33.1	25.4	57700	11	NR	3690	429
BH5787	10/08/87	26.00 - 28.00	8.6	10U	22.6	16100	20	NR	3380	89.5
BH5787	10/08/87	28.00 - 30.00	5.3	10U	23	12600	12.8	NR	2890	85.8

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Mercury (Hg), total mg/kg	Molybdenum (Mo), total mg/kg	Nickel (Ni), total mg/kg	Potassium (K), total mg/kg	Selenium (Se), total mg/kg	Silver (Ag), total mg/kg	Sodium (Na), total mg/kg	Strontium (Sr), total mg/kg
BH4687	09/03/87	27.00 - 29.50	0.18	NR	40	1000U	1U	2U	1372	26
BH4687	09/03/87	29.50 - 32.00	0.1 U	NR	11	1000U	1U	2U	1000U	15 J
BH4787	09/15/87	26.20 - 27.20	0.1 U	NR	26.8	1000U	1U	2U	1000U	33.7
BH4787	09/15/87	26.20 - 27.20	0.1 U	NR	22.3	1000U	1U	2U	1000U	20U
BH4787	09/15/87	27.20 - 28.20	0.12	NR	29.8	1000U	1U	2U	1000U	44.4
BH4887	09/17/87	13.20 - 15.11	0.1 U	NR	8U	1000U	1U	2U	1000U	29.1
BH4887	09/17/87	15.20 - 16.70	0.12	NR	8U	1000U	1U	2U	1000U	29.6
BH4987	09/21/87	24.14 - 25.64	0.1 U	NR	8U	1000U	1U	2U	1000U	31.1
BH5087	09/17/87	14.50 - 17.00	0.22	NR	8U	1000U	1U	2U	1000U	28.7
BH5087	09/17/87	17.00 - 19.50	0.29	NR	8U	1000U	1U	2U	1000U	20U
BH5287	09/22/87	22.00 - 24.00	0.1 U	NR	9.1	1000U	1U	2U	1000U	20U
BH5287	09/22/87	24.00 - 25.00	0.12	NR	10.7	1000U	1U	2U	1000U	24.9
BH5387	09/14/87	22.60 - 24.00	0.1 U	NR	8.9	1000U	1U	2U	1000U	20U
BH5487	09/21/87	42.50 - 44.00	0.10	NR	8U	1000U	1U	2U	1000U	20U
BH5487	09/21/87	42.50 - 44.00	0.1 U	NR	8U	1000U	1U	2U	1000U	20U
BH5587	09/15/87	32.00 - 34.10	0.1 U	NR	9.4	1000U	1U	2U	1000U	20U
BH5587	09/15/87	32.00 - 34.10	0.1 U	NR	8.3	1000U	1U	2U	1000U	20U
BH5587	09/15/87	34.50 - 36.60	0.1 U	NR	10.5	1000U	1U	2U	1000U	20U
BH5787	10/07/87	12.00 - 14.00	0.1 U	NR	8U	1380	1U	2U	1000U	83.9
BH5787	10/08/87	14.00 - 16.00	0.1 U	NR	9.0	1000U	1U	2U	1000U	149
BH5787	10/08/87	16.00 - 18.00	0.1 U	NR	28.8	1410	1U	2U	1000U	108
BH5787	10/08/87	18.00 - 20.00	0.1 U	NR	9.3	1000U	1U	2U	1000U	67.9
BH5787	10/08/87	20.00 - 22.00	0.1 U	NR	8U	1360	1U	2U	1000U	83.1
BH5787	10/08/87	22.00 - 24.00	0.1 U	NR	14	1400	1U	2U	1000U	85.4
BH5787	10/08/87	24.00 - 26.00	0.1 U	NR	63.2	1500	1U	2U	1890	92.2
BH5787	10/08/87	26.00 - 28.00	0.1 U	NR	15.4	1430	1U	2U	1000U	95.5
BH5787	10/08/87	28.00 - 30.00	0.1 U	NR	18	1180	1U	2U	1000U	91.1

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Operable Unit No. 2

Total Metal Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Thallium (Tl), total mg/kg	Tin (Sn), Total mg/kg	Vanadium (V), total mg/kg	Zinc (Zn), total mg/kg
BH4687	09/03/87	27.00 - 29.50	2U	NR	51	124
BH4687	09/03/87	29.50 - 32.00	2U	NR	18	46
BH4787	09/15/87	26.20 - 27.20	2U	NR	12.6	33.4
BH4787	09/15/87	26.20 - 27.20	2U	NR	17	30.1
BH4787	09/15/87	27.20 - 28.20	2U	NR	21.8	52
BH4887	09/17/87	13.20 - 15.11	2U	NR	13.8	20.6
BH4887	09/17/87	15.20 - 16.70	2U	NR	14.8	32.7
BH4987	09/21/87	24.14 - 25.64	2U	NR	42.8	77.6
BH5087	09/17/87	14.50 - 17.00	2U	NR	16	30.1
BH5087	09/17/87	17.00 - 19.50	2U	NR	12.1	27.9
BH5287	09/22/87	22.00 - 24.00	2U	NR	18.3	34.1
BH5287	09/22/87	24.00 - 25.00	2U	NR	16.8	58.8
BH5387	09/14/87	22.60 - 24.00	2U	NR	10U	29.6
BH5487	09/21/87	42.50 - 44.00	2U	NR	10.2	17.4
BH5487	09/21/87	42.50 - 44.00	2U	NR	10U	8.5
BH5587	09/15/87	32.00 - 34.10	2U	NR	12.3	14.9
BH5587	09/15/87	32.00 - 34.10	2U	NR	10U	16.6
BH5587	09/15/87	34.50 - 36.60	2U	NR	20.8	33.8
BH5787	10/07/87	12.00 - 14.00	2U	NR	39	52.7
BH5787	10/08/87	14.00 - 16.00	2U	NR	23.8	67.9
BH5787	10/08/87	16.00 - 18.00	2U	NR	34.7	138
BH5787	10/08/87	18.00 - 20.00	2U	NR	15.6	66.7
BH5787	10/08/87	20.00 - 22.00	2U	NR	17.9	52.6
BH5787	10/08/87	22.00 - 24.00	2U	NR	17.8	72.5
BH5787	10/08/87	24.00 - 26.00	2U	NR	40.7	135
BH5787	10/08/87	26.00 - 28.00	2U	NR	28	87.1
BH5787	10/08/87	28.00 - 30.00	2U	NR	22.6	93.4

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APPENDIX A-5

OTHER INORGANIC COMPOUNDS

SOIL SAMPLING RESULTS

Operable Unit No. 2

Inorganic Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH2287	07/09/87	0.00 - 9.30	NR	8.75	200 U	1.25 U	1.7 U
BH2287	07/09/87	0.00 - 9.30	NR	8.17	200 U	1.25 U	1.7 U
BH2287	07/09/87	9.70 - 10.60	NR	8.49	200 U	3.02	1.7 U
BH2287	07/09/87	10.60 - 18.40	NR	8.40	200 U	1.25 U	1.7 U
BH2387	07/07/87	0.00 - 7.50	NR	8.15	200 U	10.4	1.7 U
BH2387	07/07/87	0.00 - 7.50	NR	8.79	200 U	1.25 U	1.7 U
BH2987	06/12/87	0.00 - 10.00	NR	8.30	200 U	1.25 U	1.7 U
BH2987	06/12/87	9.70 - 12.70	NR	8.40	200 U	1.25 U	1.7 U
BH3087	06/16/87	0.00 - 9.00		INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS			
BH3087	06/16/87	9.00 - 10.35	NR	8.80	200 U	1.25 U	1.7 U
BH3087	06/16/87	11.50 - 17.15	NR	8.35	200 U	1.25 U	1.7 U
BH3087	06/16/87	20.00 - 20.80	NR	9.10	200 U	1.25 U	1.7 U

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	NR	7.43	NEG	1.49	261
BH2487	07/08/87	2.43 - 4.85	NR	7.37	200 U	6.01	1.7 U
BH2587	06/18/87	0.00 - 9.00	NR	8.50	200 U	2.5 U	1.7 U
BH2587	06/18/87	0.00 - 9.00	NR	8.55	200 U	2.44	1.7 U
BH2587	06/18/87	8.40 - 8.85	NR	9.00	200 U	2.5 U	1.7 U
BH2587	06/18/87	9.50 - 10.40	NR	8.55	200 U	1.25 U	1.7 U
BH2587	06/18/87	14.50 - 15.70	NR	8.30	200 U	2.5 U	1.7 U
BH2687	07/16/87	0.30 - 2.50	NR	8.28	NEG	0.25 U	5 U
BH2687	07/16/87	2.15 - 2.95	NR	8.74	NEG	0.25 U	5 U
BH2787	07/06/87	0.00 - 4.80	NR	8.35	200 U	19.8	1.7 U
BH2787	07/06/87	4.80 - 10.00	NR	7.79	200 U	1.32	1.7 U
BH2887	07/13/87	0.00 - 0.90	NR	8.35	200 U	1.25 U	1.7 U
BH2887	07/13/87	0.90 - 3.75	NR	8.09	200 U	1.25 U	1.7 U
BH2887	07/13/87	3.75 - 4.85	NR	8.25	200 U	1.25 U	1.7 U
BH2887	07/13/87	4.85 - 5.90	NR	8.43	200 U	1.25 U	1.7 U

903-Pad Area Sandstone

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Operable Unit No. 2

Inorganic Soil Sampling Results

903-Pad Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH2987	06/12/87	15.70 - 16.80	NR	7.60	200 U	1.25 U	1.7 U
BH2987	06/12/87	17.50 - 18.50	NR	8.15	200 U	1.25 U	1.7 U

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	NR	7.87	200 U	1.25 U	1.7 U
BH2287	07/09/87	22.20 - 23.35	NR	6.97	200 U	1.25 U	1.7 U
BH2387	07/07/87	7.20 - 8.20	NR	7.66	200 U	5.4	1.7 U
BH2387	07/07/87	11.20 - 11.85	NR	7.83	200 U	1.98	1.7 U
BH2487	07/08/87	8.00 - 8.30		INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS			
BH2487	07/08/87	8.30 - 8.90	NR	8.88	200 U	1.25 U	1.7 U
BH2487	07/08/87	10.00 - 10.90	NR	8.38	NEG	0.25 U	508
BH2587	06/18/87	18.50 - 19.30	NR	8.20	200	2.44	1.7
BH2587	06/18/87	19.70 - 20.50	NR	8.10	200 U	2.5 U	1.7 U
BH2687	07/16/87	6.00 - 6.90	NR	8.80	200 U	2.5 U	1.7 U
BH2787	07/06/87	13.00 - 14.40	NR	7.43	200 U	2.94	1.7 U
BH2887	07/13/87	8.80 - 9.00		INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS			
BH2887	07/13/87	11.00 - 12.00	NR	8.65	200 U	1.25 U	1.7 U
BH3087	06/16/87	24.50 - 25.20	NR	9.10	200 U	1.25 U	1.7 U

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	NR	8.85	NR	2.5 U	ND
BH3187	08/04/87	0.00 - 11.70	NR	8.94	NR	2.5 U	ND
BH3187	08/04/87	11.70 - 12.60	NR	8.26	NR	2.5 U	ND
BH3287	08/03/87	0.00 - 8.00	NR	8.97	NR	2.5 U	ND
BH3287	08/03/87	8.00 - 15.00	NR	8.93	NR	2.5 U	ND
BH3287	08/03/87	8.00 - 15.00	NR	8.88	NR	2.5 U	ND

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Operable Unit No. 2

Inorganic Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH3287	08/03/87	15.10 - 16.20	NR	9.01	NR	2.5 U	ND
BH3387	07/30/87	0.00 - 4.00	NR	8.75	200 U	2.5 U	ND
BH3387	07/30/87	7.80 - 14.70	NR	8.89	200 U	2.5 U	ND
BH3387	07/30/87	7.80 - 14.70	NR	9.00	200 U	2.5 U	ND
BH3387	07/30/87	14.70 - 15.90	NR	8.34	200 U	2.5 U	ND
BH3487	07/29/87	0.00 - 8.00	NR	8.78	200 U	2.5 U	ND
BH3487	07/29/87	6.60 - 8.00	NR	9.02	200 U	2.5 U	ND
BH3487	07/29/87	8.00 - 14.70	NR	8.76	200 U	2.5 U	ND
BH3487	07/29/87	8.00 - 14.70	NR	8.70	200 U	2.5 U	ND
BH3487	07/29/87	14.70 - 16.30	NR	8.62	200 U	2.5 U	22.3
BH3487	07/29/87	17.00 - 18.00	NR	8.65	200 U	2.5 U	ND
BH3587	07/27/87	0.00 - 12.30	NR	8.94	200 U	2.5 U	ND
BH3587	07/27/87	0.00 - 12.30	NR	9.01	200 U	2.5 U	ND
BH3587	07/28/87	12.00 - 15.00	NR	8.75	200 U	2.5 U	ND
BH3587	07/28/87	14.10 - 15.40	NR	8.65	200 U	2.5 U	ND
BH3687	07/20/87	0.00 - 5.00	NR	9.25	200 U	2.5 U	1.7 U
BH3687	07/20/87	0.00 - 5.00	NR	9.25	200 U	2.5 U	1.7 U
BH3687	07/20/87	4.60 - 5.50	NR	9.10	200 U	3.2	1.7 U
BH3687	07/20/87	5.00 - 15.00	NR	9.45	200 U	2.5 U	1.7 U
BH3687	07/20/87	17.70 - 20.40	NR	8.31	200 U	2.5 U	1.7 U
BH3787	07/16/87	0.00 - 5.00	NR	8.40	NEG	0.25 U	5 U
BH3787	07/16/87	0.00 - 5.00	NR	8.72	NEG	0.25 U	5 U
BH3787	07/17/87	11.00 - 12.30	NR	8.83	200 U	2.5 U	1.7 U
BH3887	07/14/87	0.00 - 9.50	NR	9.17	200 U	1.25 U	1.7 U
BH3887	07/14/87	9.50 - 10.85	NR	8.87	200 U	1.25 U	1.7 U

Mound Area Sandstone

BH3387	07/30/87	18.90 - 19.80	NR	8.35	200 U	2.5 U	ND U
BH3387	07/30/87	19.50 - 20.80	NR	8.59	200 U	2.5 U	ND

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2
Inorganic Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH3487	07/29/87	21.00 - 22.10	NR	8.54	200 U	2.5 U	ND

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	NR	9.18	NR	2.5 U	ND
BH3287	08/03/87	17.20 - 18.00	NR	8.84	NR	2.5 U	ND
BH3587	07/28/87	18.40 - 19.45	NR	8.33	200 U	2.5 U	ND
BH3687	07/20/87	23.40 - 24.50	NR	8.75	200 U	2.5 U	1.7 U
BH3787	07/17/87	18.00 - 21.70	NR	9.34	200 U	2.5 U	1.7 U
BH3787	07/17/87	25.00 - 26.20	NR	7.95	200 U	2.5 U	1.7 U
BH3987	08/12/87	14.50 - 17.00	NR	8.36	200 U	<2.5	<1.7

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	NR	7.18	200 U	<2.5	<1.7
BH3987	08/12/87	2.00 - 3.40	NR	7.87	200 U	<2.5	<1.7
BH3987	08/12/87	4.00 - 5.50	NR	8.88	200 U	<2.5	<1.7
BH3987	08/12/87	7.00 - 8.00	NR	8.57	200 U	<2.5	<1.7
BH3987	08/12/87	9.50 - 12.00	NR	8.50	200 U	<2.5	<1.7
BH3987	08/12/87	12.00 - 14.00	NR	8.29	200 U	<2.5	<1.7
BH4087	08/13/87	4.00 - 6.80	NR	8.67	200 U	<2.5	<1.7
BH4087	08/13/87	7.00 - 9.30	NR	8.72	200 U	<2.5	<1.7
BH4187	08/17/87	0.00 - 10.80	NR	8.57	200 U	2.5 U	1.7 U
BH4187	08/17/87	0.00 - 12.00	NR	8.43	200 U	2.5 U	1.7 U
BH4187	08/17/87	9.50 - 10.80		INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS			
BH4187	08/17/87	12.00 - 14.50	NR	8.50	200 U	2.5 U	1.7 U
BH4187	08/17/87	14.50 - 17.00	NR	8.48	200 U	2.5 U	1.7 U
BH4287	08/18/87	0.00 - 8.30	NR	8.37	200 U	2.5 U	1.7 U

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DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Inorganic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH4287	08/18/87	0.00 - 8.30	NR	8.66	200 U	2.5 U	1.7 U
BH4287	08/18/87	7.00 - 8.30	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4287	08/18/87	17.00 - 18.80	NR	7.93	200 U	2.5 U	1.7 U
BH4287	08/18/87	22.00 - 24.50	NR	8.16	200 U	2.5 U	1.7 U
BH4387	09/04/87	0.00 - 1.60	NR	8.10	200 U	3.9	1.7 U
BH4387	09/04/87	2.00 - 3.60	NR	8.64	200 U	2.5 U	1.7 U
BH4387	09/04/87	4.00 - 5.30	NR	INSUF.SMPL	200 U	2.5 U	1.7 U
BH4387	09/04/87	4.00 - 5.30	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4387	09/04/87	7.00 - 7.90	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4387	09/04/87	9.50 - 10.30	NR	8.84	200 U	2.5 U	1.7 U
BH4387	09/04/87	12.00 - 12.90	NR	8.80	200 U	2.5 U	1.7 U
BH4387	09/04/87	14.50 - 15.80	NR	8.80	200 U	2.5 U	1.7 U
BH4387	09/04/87	17.00 - 18.30	NR	8.67	200 U	2.5 U	1.7 U
BH4387	09/08/87	22.20 - 23.20	NR	8.20	200 U	2.5 U	NR
BH4387	09/08/87	24.70 - 26.00	NR	8.72	200 U	2.5 U	NR
BH4487	09/09/87	4.00 - 6.20	NR	7.70	200 U	2.5 U	1.7 U
BH4487	09/09/87	14.50 - 16.40	NR	8.20	200 U	2.5 U	1.7 U
BH4487	09/09/87	19.50 - 22.00	NR	8.00	200 U	2.5 U	1.7 U
BH4487	09/09/87	22.00 - 23.50	NR	7.94	200 U	2.5 U	1.7 U
BH4487	09/09/87	24.50 - 27.00	NR	8.06	200 U	ND	1.7 U
BH4587	08/31/87	0.00 - 9.50	NR	8.87	200 U	ND	1.7 U
BH4587	08/28/87	7.00 - 9.50	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4587	08/31/87	9.50 - 17.00	NR	8.02	200 U	NG	1.7 U
BH4587	08/28/87	14.50 - 16.50	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4587	08/31/87	17.50 - 19.90	NR	8.20	200 U	2.5 U	1.7 U
BH4687	09/02/87	0.00 - 9.00	NR	8.34	200 U	2.5 U	1.7 U
BH4687	09/02/87	7.00 - 9.00	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4687	09/02/87	9.50 - 17.80	NR	8.59	200 U	2.5 U	1.7 U
BH4687	09/02/87	17.00 - 17.80	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4687	09/03/87	24.50 - 25.10	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4787	09/11/87	0.00 - 1.40	NR	7.92	200 U	2.5 U	ND U
BH4787	09/11/87	2.00 - 3.64	NR	8.11	200 U	2.5 U	ND
BH4787	09/11/87	4.00 - 5.32	NR	8.22	200 U	2.5 U	ND

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DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid

Operable Unit No. 2

Inorganic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH4787	09/11/87	6.00 - 7.15	NR	8.27	200 U	2.5 U	ND
BH4787	09/11/87	8.00 - 9.00	NR	8.09	200 U	2.5 U	ND
BH4787	09/11/87	9.50 - 10.52	NR	8.42	200 U	2.5 U	ND
BH4787	09/11/87	11.50 - 12.66	NR	7.53	200 U	2.5 U	ND
BH4787	09/11/87	13.50 - 14.78	NR	8.64	200 U	2.5 U	ND
BH4787	09/11/87	15.00 - 15.65	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4787	09/14/87	16.00 - 17.62	NR	7.72	200 U	ND	ND
BH4787	09/14/87	20.50 - 21.00	NR	7.84	200 U	ND	ND
BH4787	09/14/87	21.00 - 22.50	NR	8.03	200 U	ND	ND
BH4787	09/14/87	22.50 - 24.30	NR	7.56	200 U	ND	ND
BH4887	09/16/87	6.00 - 7.14	NR	7.65	200 U	ND	ND
BH4887	09/17/87	10.00 - 11.43	INSUFFICIENT SAMPLE FOR INORGANIC ANALYSIS				
BH4987	09/18/87	6.00 - 7.30	NR	7.74	200 U	ND	ND
BH4987	09/18/87	8.00 - 15.54	NR	8.05	200 U	ND	15.0
BH4987	09/21/87	20.00 - 22.00	NR	7.42	200 U	ND	ND
BH4987	09/21/87	22.00 - 24.00	NR	7.60	200 U	ND	ND
BH5087	09/17/87	7.00 - 8.90	NR	7.86	200 U	ND	ND
BH5087	09/17/87	12.00 - 12.90	NR	7.78	200 U	ND	ND
BH5187	09/18/87	0.00 - 9.00	NR	8.02	200 U	3.33	ND
BH5187	09/22/87	12.00 - 14.40	NR	7.42	200 U	ND	ND
BH5187	09/22/87	14.50 - 17.00	NR	7.92	200 U	ND	ND
BH5287	09/22/87	0.00 - 9.50	NR	7.83	200 U	ND	ND
BH5287	09/22/87	12.00 - 13.00	NR	7.86	200 U	ND	ND
BH5387	09/11/87	0.00 - 18.80	NR	7.55	200 U	2.5 U	ND
BH5387	09/11/87	2.00 - 3.50	NR	7.87	200 U	2.5 U	ND
BH5387	09/11/87	6.00 - 7.80	NR	7.93	200 U	2.5 U	ND
BH5387	09/11/87	8.00 - 9.90	NR	7.83	200 U	2.5 U	ND
BH5387	09/14/87	14.20 - 16.20	NR	8.41	200 U	ND	ND
BH5387	09/14/87	16.20 - 17.90	NR	8.30	200 U	ND	ND
BH5387	09/14/87	18.60 - 20.60	NR	7.84	200 U	ND	ND
BH5387	09/14/87	20.60 - 22.60	NR	7.60	200 U	ND	ND

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Operable Unit No. 2

Inorganic Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH5487	09/15/87	2.00 - 4.00	NR	8.54	200 U	2.5 U	ND
BH5487	09/16/87	6.00 - 7.50	NR	8.38	200 U	ND	ND
BH5487	09/16/87	8.00 - 9.65	NR	7.61	200 U	ND	ND
BH5487	09/16/87	10.00 - 11.50	NR	8.14	200 U	ND	ND
BH5487	09/16/87	12.20 - 14.20	NR	8.03	200 U	ND	ND
BH5487	09/18/87	14.20 - 22.80	NR	7.65	200 U	ND	ND
BH5487	09/21/87	23.50 - 32.80	NR	7.65	200 U	ND	ND
BH5487	09/21/87	38.50 - 39.00	NR	8.24	200 U	ND	ND
BH5487	09/21/87	40.50 - 41.00	NR	7.86	200 U	ND	ND
BH5587	09/15/87	2.00 - 3.30	NR	7.43	200 U	2.5 U	ND
BH5587	09/15/87	9.50 - 10.90	NR	7.66	200 U	2.5 U	ND
BH5587	09/15/87	12.00 - 14.00	NR	7.83	200 U	2.5 U	ND
BH5587	09/15/87	14.50 - 23.50	NR	8.35	200 U	2.5 U	ND
BH5587	09/15/87	27.00 - 29.20	NR	7.70	200 U	2.5 U	ND
BH5587	09/09/87	29.50 - 32.00	NR	7.54	200 U	2.5 U	ND
BH5687	09/10/87	2.00 - 3.50	NR	8.60	200 U	ND	1.7 U
BH5687	09/10/87	4.00 - 5.30	NR	7.98	200 U	ND	1.7 U
BH5687	09/10/87	9.50 - 10.40	NR	8.73	200 U	ND	1.7 U
BH5687	09/10/87	12.00 - 14.00	NR	7.55	200 U	ND	1.7 U
BH5687	09/11/87	17.00 - 18.90	NR	8.59	200 U	2.5 U	ND
BH5687	09/11/87	19.50 - 22.00	NR	8.24	200 U	2.5 U	ND

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	NR	7.98	200 U	<2.5	<1.7
BH3987	08/12/87	19.50 - 22.00	NR	8.18	200 U	<2.5	<1.7
BH4287	08/19/87	24.50 - 27.00	NR	7.91	200 U	2.5 U	1.7 U
BH4287	08/19/87	27.00 - 29.50	NR	8.56	200 U	2.5 U	1.7 U
BH4287	08/19/87	29.50 - 32.00	NR	8.20	200 U	2.5 U	1.7 U
BH4287	08/19/87	32.00 - 34.50	NR	8.10	200 U	2.5 U	1.7 U
BH4287	08/19/87	34.50 - 35.90	NR	8.68	200 U	2.5 U	1.7 U
BH4287	08/19/87	37.00 - 39.50	NR	8.48	200 U	2.5 U	1.7 U
BH4287	08/20/87	39.50 - 40.40	NR	8.66	200 U	2.5 U	1.7 U
BH4287	08/21/87	45.50 - 47.00	NR	8.05	200 U	2.5 U	1.7 U

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Operable Unit No. 2

Inorganic Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH4487	09/09/87	29.50 - 32.00	NR	7.88	200 U	ND	1.7 U
BH4487	09/09/87	32.00 - 34.50	NR	7.91	200 U	ND	1.7 U
BH4587	08/31/87	20.00 - 22.30	NR	8.29	200 U	2.5 U	1.7 U
BH4587	08/31/87	22.50 - 25.00	NR	8.12	200 U	2.5 U	1.7 U
BH4587	09/01/87	32.50 - 33.90	NR	8.22	200 U	2.5 U	1.7 U
BH4587	09/01/87	35.00 - 37.50	NR	8.16	200 U	2.5 U	1.7 U
BH5187	09/22/87	17.00 - 19.50	NR	7.80	200 U	ND	ND
BH5687	09/11/87	22.00 - 24.30	NR	8.44	200 U	2.5 U	ND

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	NR	8.36	200 U	<2.5	<1.7
BH4087	08/13/87	9.50 - 12.00	NR	6.23	200 U	<2.5	<1.7
BH4187	08/17/87	17.00 - 19.50	NR	8.11	200 U	2.5 U	1.7 U
BH4387	09/08/87	27.20 - 29.70	NR	8.40	200 U	2.5 U	NR
BH4387	09/08/87	29.70 - 32.00	NR	8.36	200 U	2.5 U	NR
BH4387	09/08/87	29.70 - 32.00	NR	8.33	200 U	ND	1.7 U
BH4587	08/31/87	25.00 - 27.50	NR	8.16	200 U	2.5 U	1.7 U
BH4587	08/31/87	27.50 - 30.00	NR	8.23	200 U	2.5 U	1.7 U
BH4587	08/31/87	30.00 - 32.50	NR	8.21	200 U	2.5 U	1.7 U
BH4687	09/03/87	27.00 - 29.50	NR	8.11	200 U	2.5 U	1.7 U
BH4687	09/03/87	29.50 - 32.00	NR	8.09	200 U	2.5 U	1.7 U
BH4787	09/15/87	26.20 - 27.20	NR	8.53	200 U	2.5 U	ND
BH4787	09/15/87	26.20 - 27.20	NR	8.32	200 U	2.5 U	ND
BH4787	09/15/87	27.20 - 28.20	NR	7.87	200 U	2.5 U	ND
BH4887	09/17/87	13.20 - 15.11	NR	7.52	200 U	ND	ND
BH4887	09/17/87	15.20 - 16.70	NR	6.86	200 U	ND	ND

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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Operable Unit No. 2

Inorganic Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Nitrate+ Nitrite-Nitrogen MG/KG	pH pH Unit	Sulfide MG/KG	Total Cyanide MG/KG	Oil and Grease MG/KG
BH4987	09/21/87	24.14 - 25.64	NR	7.59	200 U	ND	ND
BH5087	09/17/87	14.50 - 17.00	NR	7.66	200 U	ND	ND
BH5087	09/17/87	17.00 - 19.50	NR	7.56	200 U	ND	ND
BH5287	09/22/87	22.00 - 24.00	NR	7.89	200 U	ND	ND
BH5287	09/22/87	24.00 - 25.00	NR	7.48	200 U	ND	ND
BH5387	09/14/87	22.60 - 24.00	NR	7.52	200 U	ND	ND
BH5487	09/21/87	42.50 - 44.00	NR	8.07	200 U	ND	ND
BH5487	09/21/87	42.50 - 44.00	NR	7.63	200 U	ND	ND
BH5587	09/15/87	32.00 - 34.10	NR	7.34	200 U	2.5 U	ND
BH5587	09/15/87	32.00 - 34.10	NR	7.95	200 U	2.5 U	ND
BH5587	09/15/87	34.50 - 36.60	NR	8.14	200 U	2.5 U	ND
BH5787	10/07/87	12.00 - 14.00	NR	7.68	ND	ND	ND
BH5787	10/08/87	14.00 - 16.00	NR	7.51	ND	ND	ND
BH5787	10/08/87	16.00 - 18.00	NR	7.50	ND	ND	ND
BH5787	10/08/87	18.00 - 20.00	NR	7.72	ND	ND	ND
BH5787	10/08/87	20.00 - 22.00	NR	7.67	ND	ND	ND
BH5787	10/08/87	22.00 - 24.00	NR	8.15	ND	ND	ND
BH5787	10/08/87	24.00 - 26.00	NR	7.70	ND	ND	ND
BH5787	10/08/87	26.00 - 28.00	NR	7.82	ND	ND	ND
BH5787	10/08/87	28.00 - 30.00	NR	7.82	ND	ND	10.3

VALUE QUALIFIERS: NR = Analyte not reported U = Analyzed but not detected * = Holding time not met E = Estimated value
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APPENDIX A-6

TOTAL RADIONUCLIDES

SOIL SAMPLING RESULTS

Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH2287	07/09/87	0.00 - 9.30	32 ± 14	22 ± 6	0.33 ± 0.17	NR	0.28 ± 0.12
BH2287	07/09/87	0.00 - 9.30	44 ± 15	27 ± 6	0.27 ± 0.17	NR	0.35 ± 0.14
BH2287	07/09/87	9.70 - 10.60	23 ± 11	23 ± 6	0.22 ± 0.14	NR	0.25 ± 0.11
BH2287	07/09/87	10.60 - 18.40	26 ± 12	22 ± 6	0.14 ± 0.15	NR	0.31 ± 0.14
BH2387	07/07/87	0.00 - 7.50	30 ± 12	16 ± 6	0.15 ± 0.16	NR	0.23 ± 0.13
BH2387	07/07/87	0.00 - 7.50	28 ± 12	26 ± 6	0.40 ± 0.21	NR	0.48 ± 0.19
BH2987	06/12/87	0.00 - 10.00	24 ± 10	16 ± 6	0.45 ± 0.14	NR	0.29 ± 0.11
BH2987	06/12/87	9.70 - 12.70	16 ± 8	26 ± 6	0.48 ± 0.13	NR	0.37 ± 0.12
BH3087	06/16/87	0.00 - 9.00	480 ± 50	5.4 ± 5.4	0.70 ± 0.17	NR	0.65 ± 0.16
BH3087	06/16/87	9.00 - 10.35	28 ± 13	22 ± 6	0.58 ± 0.19	NR	0.62 ± 0.18
BH3087	06/16/87	11.50 - 17.15	25 ± 12	20 ± 6	0.38 ± 0.14	NR	0.49 ± 0.14
BH3087	06/16/87	20.00 - 20.80	24 ± 12	22 ± 6	0.67 ± 0.18	NR	0.59 ± 0.16

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	300 ± 40	26 ± 6	0.28 ± 0.18	NR	0.47 ± 0.17
BH2487	07/08/87	2.43 - 4.85	39 ± 14	29 ± 6	0.54 ± 0.21	NR	0.78 ± 0.21
BH2587	06/18/87	0.00 - 9.00	29 ± 13	27 ± 6	0.99 ± 0.26	NR	1.1 ± 0.3
BH2587	06/18/87	0.00 - 9.00	48 ± 16	37 ± 6	1.2 ± 0.3	NR	1.5 ± 0.3
BH2587	06/18/87	8.40 - 8.85	31 ± 13	26 ± 6	0.46 ± 0.15	NR	0.77 ± 0.16
BH2587	06/18/87	9.50 - 10.40	27 ± 13	25 ± 6	0.70 ± 0.20	NR	0.53 ± 0.16
BH2587	06/18/87	14.50 - 15.70	25 ± 12	17 ± 6	0.41 ± 0.19	NR	0.70 ± 0.22
BH2687	07/16/87	0.30 - 2.50	190 ± 30	20 ± 6	1.1 ± 0.2	NR	1.0 ± 0.2
BH2687	07/16/87	2.15 - 2.95	40 ± 15	20 ± 6	1.2 ± 0.2	NR	1.0 ± 0.2
BH2787	07/06/87	0.00 - 4.80	40 ± 14	26 ± 6	0.09 ± 0.13	NR	0.18 ± 0.09
BH2787	07/06/87	4.80 - 10.00	32 ± 13	20 ± 6	0.19 ± 0.16	NR	0.34 ± 0.14
BH2887	07/13/87	0.00 - 0.90	39 ± 14	21 ± 6	1.1 ± 0.3	NR	1.4 ± 0.3
BH2887	07/13/87	0.90 - 3.75	26 ± 12	26 ± 6	0.87 ± 0.22	NR	0.86 ± 0.21
BH2887	07/13/87	3.75 - 4.85	37 ± 14	21 ± 6	0.56 ± 0.21	NR	0.40 ± 0.17

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

903 Pad Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH2287	07/09/87	0.00 - 9.30	-0.1 ± 0.4	0.06 ± 0.08	0.02 ± 0.10	0.2 ± 1.0	0.14 ± 0.20
BH2287	07/09/87	0.00 - 9.30	-0.2 ± 0.4	6.3 ± 1.4	0.93 ± 0.26	-0.2 ± 0.8	-0.57 ± 0.79
BH2287	07/09/87	9.70 - 10.60	0.0 ± 0.4	0.12 ± 0.09	0.03 ± 0.07	-0.4 ± 0.9	-0.23 ± 0.32
BH2287	07/09/87	10.60 - 18.40	-0.3 ± 0.4	0.04 ± 0.08	0.00 ± 0.11	-0.2 ± 0.8	-0.23 ± 0.32
BH2387	07/07/87	0.00 - 7.50	1.1 ± 0.5	1.1 ± 0.2	0.10 ± 0.12	-0.8 ± 1.5	-0.29 ± 0.31
BH2387	07/07/87	0.00 - 7.50	-0.1 ± 0.3	0.85 ± 0.17	0.13 ± 0.13	-0.4 ± 1.0	-0.16 ± 0.32
BH2987	06/12/87	0.00 - 10.00	0.1 ± 0.5	0.59 ± 0.16	0.09 ± 0.07	1.6 ± 0.8	0.13 ± 0.21
BH2987	06/12/87	9.70 - 12.70	-0.1 ± 0.5	0.06 ± 0.10	0.15 ± 0.10	0.5 ± 1.5	-0.28 ± 0.32
BH3087	06/16/87	0.00 - 9.00	0.1 ± 0.4	180 ± 10	22 ± 6	0.5 ± 1.0	-0.10 ± 0.19
BH3087	06/16/87	9.00 - 10.35	0.6 ± 0.9	0.33 ± 0.16	0.00 ± 0.09	0.3 ± 0.7	-0.39 ± 0.77
BH3087	06/16/87	11.50 - 17.15	0.2 ± 0.5	0.06 ± 0.09	-0.01 ± 0.08	-0.2 ± 0.9	-0.17 ± 0.31
BH3087	06/16/87	20.00 - 20.80	0.0 ± 0.6	0.15 ± 0.12	-0.03 ± 0.07	-0.1 ± 0.7	0.13 ± 0.20

903-Pad Area Colluvium

BH2487	07/08/87	0.00 - 2.43	-0.1 ± 0.6	94 ± 6	11 ± 2	-0.6 ± 1.1	0.09 ± 0.20
BH2487	07/08/87	2.43 - 4.85	0.0 ± 0.4	0.01 ± 0.17	0.01 ± 0.04	-0.2 ± 1.2	0.06 ± 0.20
BH2587	06/18/87	0.00 - 9.00	0.4 ± 0.5	0.06 ± 0.07	-0.03 ± 0.08	0.0 ± 0.6	0.15 ± 0.20
BH2587	06/18/87	0.00 - 9.00	0.2 ± 0.4	3.2 ± 0.4	0.22 ± 0.18	1.4 ± 0.8	0.16 ± 0.20
BH2587	06/18/87	8.40 - 8.85	0.5 ± 0.4	0.08 ± 0.07	-0.03 ± 0.07	0.0 ± 0.6	0.20 ± 0.20
BH2587	06/18/87	9.50 - 10.40	0.3 ± 0.5	0.13 ± 0.10	-0.01 ± 0.08	0.1 ± 0.7	-0.3 ± 0.3
BH2587	06/18/87	14.50 - 15.70	0.4 ± 0.4	0.04 ± 0.07	-0.06 ± 0.11	0.0 ± 0.6	0.07 ± 0.20
BH2687	07/16/87	0.30 - 2.50	0.0 ± 0.4	83 ± 2	12 ± 1	1.3 ± 2.0	0.02 ± 0.21
BH2687	07/16/87	2.15 - 2.95	0.7 ± 0.4	0.01 ± 0.08	0.09 ± 0.18	0.6 ± 1.0	-0.12 ± 0.21
BH2787	07/06/87	0.00 - 4.80	0.8 ± 0.5	3.8 ± 0.4	0.44 ± 0.15	0.1 ± 1.0	0.03 ± 0.20
BH2787	07/06/87	4.80 - 10.00	-0.1 ± 0.5	0.08 ± 0.08	-0.03 ± 0.09	-0.1 ± 0.8	0.17 ± 0.21
BH2887	07/13/87	0.00 - 0.90	-0.1 ± 0.5	2.0 ± 0.3	0.24 ± 0.17	0.3 ± 0.1	-0.03 ± 0.21
BH2887	07/13/87	0.90 - 3.75	0.1 ± 0.7	-0.05 ± 0.11	0.02 ± 0.04	0.1 ± 1.2	0.16 ± 0.21
BH2887	07/13/87	3.75 - 4.85	0.0 ± 0.6	0.06 ± 0.14	0.10 ± 0.14	1.8 ± 1.7	-0.28 ± 0.33

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH2887	07/13/87	4.85 - 5.90	27 ± 12	26 ± 6	1.5 ± 0.3	NR	1.4 ± 0.3

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	10 ± 8	7 ± 5	0.36 ± 0.11	NR	0.32 ± 0.10
BH2987	06/12/87	17.50 - 18.50	24 ± 10	19 ± 6	0.26 ± 0.10	NR	0.43 ± 0.13

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	27 ± 12	18 ± 6	0.15 ± 0.15	NR	0.36 ± 0.15
BH2287	07/09/87	22.20 - 23.35	16 ± 10	16 ± 6	0.17 ± 0.17	NR	0.28 ± 0.15
BH2387	07/07/87	7.20 - 8.20	25 ± 12	23 ± 6	0.32 ± 0.18	NR	0.44 ± 0.16
BH2387	07/07/87	11.20 - 11.85	33 ± 13	22 ± 6	0.47 ± 0.20	NR	0.59 ± 0.18
BH2487	07/08/87	8.00 - 8.30	30 ± 13	20 ± 6	0.37 ± 0.18	NR	0.91 ± 0.24
BH2487	07/08/87	8.30 - 8.90	30 ± 13	20 ± 6	0.37 ± 0.18	NR	0.91 ± 0.24
BH2487	07/08/87	10.00 - 10.90	27 ± 12	27 ± 6	0.58 ± 0.26	NR	0.52 ± 0.21
BH2587	06/18/87	18.50 - 19.30	25 ± 12	25 ± 6	1.1 ± 0.3	NR	1.4 ± 0.3
BH2587	06/18/87	19.70 - 20.50	24 ± 12	33 ± 6	0.73 ± 0.24	NR	1.4 ± 0.3
BH2687	07/16/87	6.00 - 6.90	26 ± 13	28 ± 6	0.90 ± 0.15	NR	0.80 ± 0.15
BH2787	07/06/87	13.00 - 14.40	31 ± 13	21 ± 6	0.47 ± 0.18	NR	0.67 ± 0.18
BH2887	07/13/87	8.80 - 9.00	31 ± 13	27 ± 6	2.8 ± 0.5	NR	1.8 ± 0.4
BH2887	07/13/87	11.00 - 12.00	31 ± 13	27 ± 6	2.8 ± 0.5	NR	1.8 ± 0.4
BH3087	06/16/87	24.50 - 25.20	17 ± 11	27 ± 6	0.36 ± 0.11	NR	0.46 ± 0.13

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	24 ± 13	20 ± 6	0.72 ± 0.14	NR	0.79 ± 0.15

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

903-Pad Area Colluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH2887	07/13/87	4.85 - 5.90	-0.2 ± 0.5	0.03 ± 0.10	-0.01 ± 0.06	0.1 ± 0.8	0.10 ± 0.21

903-Pad Area Sandstone

BH2987	06/12/87	15.70 - 16.80	0.1 ± 0.5	0.02 ± 0.08	0.05 ± 0.07	0.7 ± 0.9	0.22 ± 0.21
BH2987	06/12/87	17.50 - 18.50	0.2 ± 0.7	0.01 ± 0.09	0.06 ± 0.08	-0.4 ± 0.6	0.35 ± 0.21

903-Pad Area Claystone

BH2287	07/09/87	18.40 - 20.60	0.1 ± 0.3	0.03 ± 0.13	-0.05 ± 0.10	0.0 ± 0.8	0.19 ± 0.21
BH2287	07/09/87	22.20 - 23.35	-0.2 ± 0.4	0.06 ± 0.08	-0.01 ± 0.10	1.2 ± 0.9	0.22 ± 0.21
BH2387	07/07/87	7.20 - 8.20	-0.4 ± 0.5	0.09 ± 0.10	0.10 ± 0.15	0.1 ± 0.8	0.20 ± 0.21
BH2387	07/07/87	11.20 - 11.85	0.0 ± 0.5	0.03 ± 0.10	-0.01 ± 0.09	-0.4 ± 1.0	0.26 ± 0.21
BH2487	07/08/87	8.00 - 8.30	0.0 ± 0.4	0.09 ± 0.14	0.02 ± 0.07	1.1 ± 1.2	0.06 ± 0.20
BH2487	07/08/87	8.30 - 8.90	0.0 ± 0.4	0.09 ± 0.14	0.02 ± 0.07	1.1 ± 1.2	0.06 ± 0.20
BH2487	07/08/87	10.00 - 10.90	-0.1 ± 0.4	0.07 ± 0.09	0.01 ± 0.04	0.4 ± 0.8	0.02 ± 0.20
BH2587	06/18/87	18.50 - 19.30	0.3 ± 0.5	0.10 ± 0.08	-0.02 ± 0.08	-0.2 ± 0.6	0.25 ± 0.20
BH2587	06/18/87	19.70 - 20.50	-0.2 ± 0.5	0.15 ± 0.12	-0.03 ± 0.08	3.1 ± 0.7	0.14 ± 0.20
BH2687	07/16/87	6.00 - 6.90	0.3 ± 0.4	-0.03 ± 0.07	0.03 ± 0.17	0.0 ± 0.1	-0.02 ± 0.21
BH2787	07/06/87	13.00 - 14.40	0.1 ± 0.5	0.21 ± 0.13	0.02 ± 0.09	-0.1 ± 0.9	0.22 ± 0.21
BH2887	07/13/87	8.80 - 9.00	1.0 ± 0.6	0.82 ± 0.32	0.18 ± 0.12	0.5 ± 1.6	0.24 ± 0.21
BH2887	07/13/87	11.00 - 12.00	1.0 ± 0.6	0.82 ± 0.32	0.18 ± 0.12	0.5 ± 1.6	0.24 ± 0.21
BH3087	06/16/87	24.50 - 25.20	0.1 ± 0.5	0.08 ± 0.08	0.02 ± 0.17	0.4 ± 0.8	0.28 ± 0.20

Mound Area Rocky Flats Alluvium

BH3187	08/04/87	0.00 - 11.70	0.6 ± 0.4	0.08 ± 0.10	0.01 ± 0.12	0.0 ± 0.1	0.18 ± 0.20

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH3187	08/04/87	0.00 - 11.70	23 ± 13	18 ± 6	0.58 ± 0.14	NR	0.68 ± 0.16
BH3187	08/04/87	11.70 - 12.60	26 ± 13	22 ± 6	0.77 ± 0.15	NR	0.51 ± 0.13
BH3287	08/03/87	0.00 - 8.00	25 ± 14	14 ± 6	0.48 ± 0.14	NR	0.61 ± 0.15
BH3287	08/03/87	8.00 - 15.00	22 ± 12	20 ± 6	0.55 ± 0.25	NR	0.39 ± 0.22
BH3287	08/03/87	8.00 - 15.00	18 ± 11	19 ± 6	0.46 ± 0.22	NR	0.27 ± 0.17
BH3287	08/03/87	15.10 - 16.20	16 ± 11	10 ± 6	0.42 ± 0.12	NR	0.32 ± 0.10
BH3387	07/30/87	0.00 - 4.00	25 ± 14	24 ± 7	0.36 ± 0.12	NR	0.42 ± 0.12
BH3387	07/30/87	7.80 - 14.70	12 ± 10	17 ± 6	0.31 ± 0.11	NR	0.41 ± 0.12
BH3387	07/30/87	7.80 - 14.70	17 ± 11	16 ± 6	0.28 ± 0.19	NR	0.47 ± 0.16
BH3387	07/30/87	14.70 - 15.90	28 ± 13	20 ± 6	1.5 ± 0.2	NR	1.4 ± 0.2
BH3487	07/29/87	0.00 - 8.00	18 ± 13	16 ± 6	0.32 ± 0.10	NR	0.38 ± 0.11
BH3487	07/29/87	6.60 - 8.00	19 ± 12	16 ± 6	0.31 ± 0.10	NR	0.40 ± 0.12
BH3487	07/29/87	8.00 - 14.70	26 ± 13	37 ± 7	0.57 ± 0.13	NR	0.53 ± 0.13
BH3487	07/29/87	8.00 - 14.70	33 ± 14	37 ± 7	0.44 ± 0.12	NR	0.46 ± 0.12
BH3487	07/29/87	14.70 - 16.30	20 ± 12	21 ± 6	0.45 ± 0.11	NR	0.49 ± 0.12
BH3487	07/29/87	17.00 - 18.00	14 ± 11	19 ± 6	0.55 ± 0.14	NR	0.52 ± 0.14
BH3587	07/27/87	0.00 - 12.30	17 ± 13	9.8 ± 6.2	0.41 ± 0.13	NR	0.52 ± 0.14
BH3587	07/27/87	0.00 - 12.30	15 ± 12	17 ± 6	0.48 ± 0.13	NR	0.61 ± 0.14
BH3587	07/28/87	12.00 - 15.00	18 ± 12	15 ± 6	0.69 ± 0.16	NR	0.84 ± 0.17
BH3587	07/28/87	14.10 - 15.40	24 ± 13	19 ± 6	0.75 ± 0.15	NR	0.83 ± 0.16
BH3687	07/20/87	0.00 - 5.00	12 ± 11	15 ± 6	1.2 ± 0.3	NR	1.7 ± 0.3
BH3687	07/20/87	0.00 - 5.00	20 ± 12	16 ± 6	0.63 ± 0.22	NR	1.2 ± 0.3
BH3687	07/20/87	4.60 - 5.50	24 ± 13	26 ± 6	0.31 ± 0.17	NR	0.63 ± 0.22
BH3687	07/20/87	5.00 - 15.00	23 ± 12	25 ± 6	0.81 ± 0.29	NR	0.42 ± 0.21
BH3687	07/20/87	17.70 - 20.40	21 ± 12	25 ± 6	1.6 ± 0.4	NR	2.2 ± 0.4
BH3787	07/16/87	0.00 - 5.00	16 ± 12	23 ± 6	1.2 ± 0.2	NR	2.4 ± 0.2
BH3787	07/16/87	0.00 - 5.00	15 ± 12	22 ± 6	1.3 ± 0.2	NR	3.1 ± 0.3
BH3787	07/17/87	11.00 - 12.30	29 ± 13	22 ± 6	0.49 ± 0.23	NR	0.60 ± 0.24
BH3887	07/14/87	0.00 - 9.50	17 ± 11	25 ± 6	0.44 ± 0.13	NR	0.36 ± 0.11
BH3887	07/14/87	9.50 - 10.85	10 ± 9	25 ± 6	0.46 ± 0.12	NR	0.31 ± 0.10

Mound Area Sandstone

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

Mound Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH3187	08/04/87	0.00 - 11.70	0.1 ± 0.6	0.15 ± 0.12	0.08 ± 0.15	0.0 ± 0.1	0.17 ± 0.21
BH3187	08/04/87	11.70 - 12.60	0.4 ± 0.5	0.02 ± 0.11	-0.04 ± 0.12	0.0 ± 0.1	0.23 ± 0.21
BH3287	08/03/87	0.00 - 8.00	-0.1 ± 0.6	0.33 ± 0.17	-0.06 ± 0.11	0.0 ± 0.1	0.08 ± 0.20
BH3287	08/03/87	8.00 - 15.00	0.1 ± 0.5	0.06 ± 0.11	-0.02 ± 0.11	0.0 ± 0.1	0.69 ± 0.22
BH3287	08/03/87	8.00 - 15.00	-0.1 ± 0.4	-0.02 ± 0.11	-0.08 ± 0.10	0.0 ± 0.1	0.65 ± 0.22
BH3287	08/03/87	15.10 - 16.20	-0.1 ± 0.6	0.03 ± 0.12	-0.05 ± 0.10	0.0 ± 0.1	0.66 ± 0.22
BH3387	07/30/87	0.00 - 4.00	0.6 ± 0.6	0.14 ± 0.20	0.04 ± 0.13	1.3 ± 1.6	0.23 ± 0.19
BH3387	07/30/87	7.80 - 14.70	-0.1 ± 0.5	-0.04 ± 0.17	-0.05 ± 0.07	0.9 ± 1.0	0.38 ± 0.20
BH3387	07/30/87	7.80 - 14.70	0.0 ± 0.5	-0.03 ± 0.16	0.02 ± 0.10	0.3 ± 1.4	0.32 ± 0.19
BH3387	07/30/87	14.70 - 15.90	0.1 ± 0.5	-0.09 ± 0.17	-0.05 ± 0.06	0.5 ± 0.8	0.04 ± 0.19
BH3487	07/29/87	0.00 - 8.00	0.0 ± 0.5	-0.08 ± 0.16	-0.02 ± 0.07	0.8 ± 1.5	-0.02 ± 0.18
BH3487	07/29/87	6.60 - 8.00	-0.1 ± 0.5	0.00 ± 0.17	-0.02 ± 0.07	1.1 ± 1.1	-0.28 ± 0.29
BH3487	07/29/87	8.00 - 14.70	0.1 ± 0.6	-0.04 ± 0.17	0.00 ± 0.09	1.5 ± 1.1	0.33 ± 0.19
BH3487	07/29/87	8.00 - 14.70	-0.3 ± 0.6	0.09 ± 0.20	-0.02 ± 0.09	1.0 ± 1.7	0.04 ± 0.19
BH3487	07/29/87	14.70 - 16.30	0.0 ± 0.5	-0.02 ± 0.16	-0.05 ± 0.06	0.4 ± 1.1	0.22 ± 0.19
BH3487	07/29/87	17.00 - 18.00	-0.4 ± 0.6	0.06 ± 0.18	-0.02 ± 0.15	0.4 ± 1.1	0.26 ± 0.19
BH3587	07/27/87	0.00 - 12.30	-0.4 ± 0.6	1.5 ± 0.2	0.40 ± 0.19	1.0 ± 1.3	0.04 ± 0.19
BH3587	07/27/87	0.00 - 12.30	0.0 ± 0.7	1.5 ± 0.2	0.30 ± 0.13	0.6 ± 1.6	0.04 ± 0.19
BH3587	07/28/87	12.00 - 15.00	0.2 ± 0.6	0.06 ± 0.13	0.02 ± 0.04	0.9 ± 1.5	0.22 ± 0.19
BH3587	07/28/87	14.10 - 15.40	0.6 ± 0.6	-0.03 ± 0.09	0.06 ± 0.06	0.6 ± 1.1	0.15 ± 0.19
BH3687	07/20/87	0.00 - 5.00	0.1 ± 0.5	0.53 ± 0.16	0.04 ± 0.18	0.0 ± 1.0	-0.10 ± 0.21
BH3687	07/20/87	0.00 - 5.00	0.1 ± 0.4	0.41 ± 0.14	0.12 ± 0.20	0.4 ± 1.0	0.17 ± 0.21
BH3687	07/20/87	4.60 - 5.50	-0.1 ± 0.5	0.03 ± 0.09	0.00 ± 0.17	0.0 ± 0.1	-0.13 ± 0.33
BH3687	07/20/87	5.00 - 15.00	-0.1 ± 0.4	-0.03 ± 0.07	0.03 ± 0.17	2.1 ± 1.2	0.40 ± 0.22
BH3687	07/20/87	17.70 - 20.40	0.2 ± 0.4	0.03 ± 0.09	0.04 ± 0.19	1.0 ± 1.1	-0.03 ± 0.21
BH3787	07/16/87	0.00 - 5.00	0.5 ± 0.4	0.49 ± 0.15	0.02 ± 0.20	0.0 ± 0.1	-0.12 ± 0.21
BH3787	07/16/87	0.00 - 5.00	-0.1 ± 0.5	2.6 ± 0.3	0.48 ± 0.24	-0.5 ± 1.6	0.04 ± 0.21
BH3787	07/17/87	11.00 - 12.30	0.0 ± 0.4	-0.06 ± 0.07	-0.02 ± 0.16	0.8 ± 1.3	-0.18 ± 0.33
BH3887	07/14/87	0.00 - 9.50	0.1 ± 0.5	0.08 ± 0.13	-0.01 ± 0.02	-0.2 ± 2.0	0.12 ± 0.21
BH3887	07/14/87	9.50 - 10.85	0.1 ± 0.4	0.01 ± 0.14	0.01 ± 0.03	0.0 ± 0.1	0.14 ± 0.21

Mound Area Sandstone

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH3387	07/30/87	18.90 - 19.80	9.2 ± 9.9	27 ± 7	0.41 ± 0.21	NR	0.70 ± 0.19
BH3387	07/30/87	19.50 - 20.80	29 ± 13	24 ± 6	0.80 ± 0.21	NR	1.1 ± 0.2
BH3487	07/29/87	21.00 - 22.10	18 ± 12	21 ± 6	0.47 ± 0.13	NR	0.46 ± 0.13

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	15 ± 11	15 ± 6	0.70 ± 0.14	NR	0.67 ± 0.15
BH3287	08/03/87	17.20 - 18.00	22 ± 12	24 ± 6	0.47 ± 0.13	NR	0.62 ± 0.14
BH3587	07/28/87	18.40 - 19.45	11 ± 10	21 ± 6	0.97 ± 0.16	NR	0.91 ± 0.15
BH3687	07/20/87	23.40 - 24.50	19 ± 11	22 ± 6	0.81 ± 0.33	NR	0.94 ± 0.35
BH3787	07/17/87	18.00 - 21.70	22 ± 12	34 ± 6	0.21 ± 0.16	NR	0.55 ± 0.20
BH3787	07/17/87	25.00 - 26.20	18 ± 11	30 ± 6	1.4 ± 0.4	NR	1.6 ± 0.4
BH3987	08/12/87	14.50 - 17.00	34 ± 13	22 ± 6	NR	NR	NR

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	43 ± 12	23 ± 6	NR	NR	NR
BH3987	08/12/87	2.00 - 3.40	31 ± 14	21 ± 6	NR	NR	NR
BH3987	08/12/87	4.00 - 5.50	16 ± 11	19 ± 6	NR	NR	NR
BH3987	08/12/87	7.00 - 8.00	23 ± 12	11 ± 6	NR	NR	NR
BH3987	08/12/87	9.50 - 12.00	25 ± 12	19 ± 6	NR	NR	NR
BH3987	08/12/87	12.00 - 14.00	32 ± 13	22 ± 6	NR	NR	NR
BH4087	08/13/87	4.00 - 6.80	26 ± 13	24 ± 7	NR	NR	NR
BH4087	08/13/87	7.00 - 9.30	16 ± 11	22 ± 6	NR	NR	NR
BH4187	08/17/87	0.00 - 10.80	13 ± 10	16 ± 6	0.94 ± 0.29	NR	0.65 ± 0.24
BH4187	08/17/87	0.00 - 12.00	19 ± 10	21 ± 6	0.62 ± 0.23	NR	0.70 ± 0.22
BH4187	08/17/87	9.50 - 10.80	***				

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

Mound Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH3387	07/30/87	18.90 - 19.80	0.0 ± 0.5	-0.04 ± 0.17	0.04 ± 0.11	0.4 ± 1.5	0.24 ± 0.19
BH3387	07/30/87	19.50 - 20.80	-0.3 ± 0.5	0.01 ± 0.19	0.03 ± 0.09	0.7 ± 1.1	0.34 ± 0.19
BH3487	07/29/87	21.00 - 22.10	-0.2 ± 0.6	-0.08 ± 0.17	-0.05 ± 0.07	0.4 ± 1.6	0.27 ± 0.19

Mound Area Claystone

BH3187	08/04/87	15.70 - 22.85	0.0 ± 0.7	-0.05 ± 0.10	0.00 ± 0.12	0.0 ± 0.1	0.09 ± 0.20
BH3287	08/03/87	17.20 - 18.00	0.0 ± 0.5	0.04 ± 0.12	-0.04 ± 0.11	0.0 ± 0.1	0.48 ± 0.21
BH3587	07/28/87	18.40 - 19.45	-0.2 ± 0.5	-0.04 ± 0.11	0.03 ± 0.08	0.1 ± 1.3	0.20 ± 0.19
BH3687	07/20/87	23.40 - 24.50	0.0 ± 0.4	-0.05 ± 0.07	0.08 ± 0.19	2.3 ± 1.7	0.05 ± 0.21
BH3787	07/17/87	18.00 - 21.70	0.1 ± 0.5	-0.06 ± 0.08	0.06 ± 0.18	4.7 ± 2.0	0.52 ± 0.22
BH3787	07/17/87	25.00 - 26.20	-0.3 ± 0.4	-0.04 ± 0.08	0.05 ± 0.18	0.0 ± 1.0	0.02 ± 0.21
BH3987	08/12/87	14.50 - 17.00	0.5 ± 0.6	-0.01 ± 0.19	0.08 ± 0.12	0.0 ± 0.1	0.26 ± 0.19

East Trenches Area Rocky Flats Alluvium

BH3987	08/12/87	0.00 - 2.00	0.1 ± 0.5	1.1 ± 0.2	0.02 ± 0.09	0.0 ± 0.1	0.08 ± 0.19
BH3987	08/12/87	2.00 - 3.40	0.5 ± 0.5	0.03 ± 0.10	0.01 ± 0.09	0.0 ± 0.1	0.11 ± 0.19
BH3987	08/12/87	4.00 - 5.50	0.3 ± 0.4	-0.01 ± 0.09	-0.03 ± 0.07	0.0 ± 0.1	-0.21 ± 0.29
BH3987	08/12/87	7.00 - 8.00	0.2 ± 0.4	0.00 ± 0.11	0.02 ± 0.08	0.0 ± 0.1	-0.26 ± 0.29
BH3987	08/12/87	9.50 - 12.00	0.9 ± 0.5	0.12 ± 0.16	0.05 ± 0.09	0.0 ± 0.1	-0.14 ± 0.18
BH3987	08/12/87	12.00 - 14.00	1.1 ± 0.5	0.02 ± 0.15	0.06 ± 0.09	0.0 ± 0.1	0.18 ± 0.19
BH4087	08/13/87	4.00 - 6.80	0.8 ± 0.3	-0.03 ± 0.10	0.12 ± 0.10	0.0 ± 0.1	-0.23 ± 0.29
BH4087	08/13/87	7.00 - 9.30	1.0 ± 0.5	-0.03 ± 0.09	-0.04 ± 0.07	0.0 ± 0.1	0.19 ± 0.19
BH4187	08/17/87	0.00 - 10.80	0.2 ± 0.5	0.17 ± 0.18	-0.01 ± 0.08	0.0 ± 0.1	-0.29 ± 0.30
BH4187	08/17/87	0.00 - 12.00	0.1 ± 0.4	0.05 ± 0.14	0.06 ± 0.09	0.0 ± 0.1	-0.25 ± 0.30
BH4187	08/17/87	9.50 - 10.80	***				

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH4187	08/17/87	12.00 - 14.50	24 ± 11	19 ± 6	0.43 ± 0.16	NR	0.49 ± 0.15
BH4187	08/17/87	14.50 - 17.00	24 ± 14	20 ± 6	0.57 ± 0.17	NR	0.90 ± 0.19
BH4287	08/18/87	0.00 - 8.30	23 ± 11	23 ± 6	0.42 ± 0.17	NR	0.47 ± 0.15
BH4287	08/18/87	0.00 - 8.30	27 ± 12	21 ± 6	0.52 ± 0.23	NR	0.69 ± 0.25
BH4287	08/18/87	7.00 - 8.30	***				
BH4287	08/18/87	17.00 - 18.80	33 ± 12	22 ± 6	0.42 ± 0.21	NR	0.76 ± 0.24
BH4287	08/18/87	22.00 - 24.50	18 ± 9	19 ± 6	0.40 ± 0.17	NR	0.61 ± 0.17
BH4387	09/04/87	0.00 - 1.60	25 ± 14	18 ± 6	0.49 ± 0.12	NR	NR
BH4387	09/04/87	2.00 - 3.60	9.0 ± 7.8	16 ± 6	0.49 ± 0.14	NR	0.48 ± 0.13
BH4387	09/04/87	4.00 - 5.30	14 ± 13	20 ± 6	0.45 ± 0.13	NR	0.42 ± 0.11
BH4387	09/04/87	4.00 - 5.30	10 ± 12	32 ± 7	0.45 ± 0.14	NR	0.65 ± 0.16
BH4387	09/04/87	7.00 - 7.90	26 ± 14	22 ± 6	0.64 ± 0.14	NR	0.58 ± 0.13
BH4387	09/04/87	9.50 - 10.30	21 ± 13	23 ± 6	0.36 ± 0.10	NR	0.53 ± 0.10
BH4387	09/04/87	12.00 - 12.90	24 ± 14	17 ± 6	0.42 ± 0.11	NR	0.45 ± 0.10
BH4387	09/04/87	14.50 - 15.80	22 ± 13	18 ± 6	0.28 ± 0.10	NR	0.36 ± 0.09
BH4387	09/04/87	17.00 - 18.30	23 ± 14	16 ± 6	0.28 ± 0.10	NR	0.51 ± 0.11
BH4387	09/08/87	22.20 - 23.20	15 ± 12	21 ± 6	0.55 ± 0.23	NR	0.62 ± 0.24
BH4387	09/08/87	24.70 - 26.00	32 ± 15	22 ± 6	0.45 ± 0.11	NR	0.67 ± 0.11
BH4487	09/09/87	4.00 - 6.20	40 ± 14	27 ± 6	0.86 ± 0.22	NR	0.75 ± 0.23
BH4487	09/09/87	14.50 - 16.40	21 ± 11	20 ± 6	0.98 ± 0.37	NR	0.72 ± 0.35
BH4487	09/09/87	19.50 - 22.00	39 ± 14	32 ± 7	0.62 ± 0.15	NR	0.53 ± 0.18
BH4487	09/09/87	22.00 - 23.50	51 ± 16	30 ± 6	0.38 ± 0.13	NR	0.53 ± 0.19
BH4487	09/09/87	24.50 - 27.00	23 ± 12	25 ± 6	1.4 ± 0.5	NR	1.3 ± 0.4
BH4587	08/31/87	0.00 - 9.50	23 ± 10	20 ± 6	0.43 ± 0.13	NR	0.46 ± 0.13
BH4587	08/28/87	7.00 - 9.50	***				
BH4587	08/31/87	9.50 - 17.00	45 ± 12	12 ± 6	1.4 ± 0.2	NR	1.5 ± 0.2
BH4587	08/28/87	14.50 - 16.50	***				
BH4587	08/31/87	17.50 - 19.90	33 ± 11	24 ± 6	0.66 ± 0.16	NR	0.72 ± 0.17
BH4687	09/02/87	0.00 - 9.00	30 ± 11	18 ± 6	0.61 ± 0.17	NR	0.80 ± 0.19
BH4687	09/02/87	7.00 - 9.00	***				
BH4687	09/02/87	9.50 - 17.80	23 ± 10	19 ± 6	0.48 ± 0.17	NR	0.57 ± 0.18
BH4687	09/02/87	17.00 - 17.80	***				

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH4187	08/17/87	12.00 - 14.50	0.1 ± 0.5	-0.02 ± 0.14	0.05 ± 0.10	0.0 ± 0.1	0.36 ± 0.20
BH4187	08/17/87	14.50 - 17.00	0.0 ± 0.5	-0.07 ± 0.11	-0.02 ± 0.08	0.0 ± 0.1	0.24 ± 0.20
BH4287	08/18/87	0.00 - 8.30	0.2 ± 0.4	0.18 ± 0.14	0.07 ± 0.09	0.0 ± 0.1	-0.19 ± 0.30
BH4287	08/18/87	0.00 - 8.30	0.1 ± 0.4	0.01 ± 0.13	0.04 ± 0.11	0.0 ± 0.1	-0.01 ± 0.19
BH4287	08/18/87	7.00 - 8.30	***				
BH4287	08/18/87	17.00 - 18.80	0.2 ± 0.4	-0.07 ± 0.12	0.02 ± 0.10	0.0 ± 0.1	0.12 ± 0.19
BH4287	08/18/87	22.00 - 24.50	-0.1 ± 0.4	-0.04 ± 0.14	0.05 ± 0.09	0.0 ± 0.1	0.37 ± 0.20
BH4387	09/04/87	0.00 - 1.60	1.0 ± 0.9	0.03 ± 0.08	0.03 ± 0.08	0.0 ± 0.1	0.25 ± 0.20
BH4387	09/04/87	2.00 - 3.60	0.3 ± 0.6	-0.02 ± 0.07	-0.03 ± 0.08	0.0 ± 0.1	0.07 ± 0.19
BH4387	09/04/87	4.00 - 5.30	0.1 ± 0.5	0.09 ± 0.12	-0.03 ± 0.07	0.0 ± 0.1	0.18 ± 0.20
BH4387	09/04/87	4.00 - 5.30	0.0 ± 0.6	-0.02 ± 0.07	0.03 ± 0.09	0.0 ± 0.1	-0.07 ± 0.19
BH4387	09/04/87	7.00 - 7.90	0.3 ± 0.5	0.05 ± 0.09	-0.02 ± 0.08	0.0 ± 0.1	-0.20 ± 0.30
BH4387	09/04/87	9.50 - 10.30	-0.1 ± 0.5	-0.03 ± 0.06	0.01 ± 0.08	0.0 ± 0.1	-0.22 ± 0.30
BH4387	09/04/87	12.00 - 12.90	0.5 ± 0.6	-0.03 ± 0.09	0.01 ± 0.08	0.0 ± 0.1	-0.30 ± 0.30
BH4387	09/04/87	14.50 - 15.80	0.1 ± 0.6	0.10 ± 0.10	-0.01 ± 0.08	0.0 ± 0.1	-0.21 ± 0.30
BH4387	09/04/87	17.00 - 18.30	0.0 ± 0.5	0.01 ± 0.09	0.01 ± 0.09	0.0 ± 0.1	-0.02 ± 0.19
BH4387	09/08/87	22.20 - 23.20	-0.3 ± 0.5	-0.04 ± 0.09	0.04 ± 0.10	0.0 ± 0.1	-0.10 ± 0.30
BH4387	09/08/87	24.70 - 26.00	0.3 ± 0.6	0.03 ± 0.09	0.03 ± 0.09	0.0 ± 0.1	-0.07 ± 0.30
BH4487	09/09/87	4.00 - 6.20	0.1 ± 0.5	0.07 ± 0.09	-0.02 ± 0.08	0.0 ± 0.1	0.19 ± 0.19
BH4487	09/09/87	14.50 - 16.40	-0.2 ± 0.4	-0.02 ± 0.07	-0.02 ± 0.06	0.0 ± 0.1	-0.27 ± 0.30
BH4487	09/09/87	19.50 - 22.00	0.1 ± 0.5	0.01 ± 0.07	-0.01 ± 0.09	0.0 ± 0.1	0.07 ± 0.18
BH4487	09/09/87	22.00 - 23.50	-0.4 ± 0.5	0.00 ± 0.07	0.07 ± 0.11	0.0 ± 0.1	0.28 ± 0.20
BH4487	09/09/87	24.50 - 27.00	-0.2 ± 0.5	0.00 ± 0.07	-0.01 ± 0.10	0.0 ± 0.1	0.05 ± 0.19
BH4587	08/31/87	0.00 - 9.50	0.1 ± 0.4	0.09 ± 0.11	0.03 ± 0.11	0.0 ± 0.1	0.05 ± 0.19
BH4587	08/28/87	7.00 - 9.50	***				
BH4587	08/31/87	9.50 - 17.00	-0.1 ± 0.4	-0.05 ± 0.10	0.01 ± 0.11	0.0 ± 0.1	-0.28 ± 0.30
BH4587	08/28/87	14.50 - 16.50	***				
BH4587	08/31/87	17.50 - 19.90	0.7 ± 1.0	-0.04 ± 0.12	0.02 ± 0.11	0.0 ± 0.1	0.18 ± 0.19
BH4687	09/02/87	0.00 - 9.00	0.0 ± 0.6	0.06 ± 0.17	-0.02 ± 0.06	0.0 ± 0.1	0.02 ± 0.22
BH4687	09/02/87	7.00 - 9.00	***				
BH4687	09/02/87	9.50 - 17.80	0.0 ± 0.9	0.28 ± 0.14	0.01 ± 0.07	0.0 ± 0.1	0.04 ± 0.19
BH4687	09/02/87	17.00 - 17.80	***				

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH4687	09/03/87	24.50 - 25.10	42 ± 16	31 ± 6	0.60 ± 0.25	NR	0.73 ± 0.26
BH4787	09/11/87	0.00 - 1.40	34 ± 15	21 ± 7	0.52 ± 0.16	NR	0.53 ± 0.15
BH4787	09/11/87	2.00 - 3.64	29 ± 15	18 ± 6	0.98 ± 0.16	NR	0.84 ± 0.15
BH4787	09/11/87	4.00 - 5.32	20 ± 13	22 ± 6	0.54 ± 0.14	NR	0.57 ± 0.15
BH4787	09/11/87	6.00 - 7.15	13 ± 11	12 ± 6	0.76 ± 0.16	NR	0.59 ± 0.14
BH4787	09/11/87	8.00 - 9.00	26 ± 9	16 ± 6	0.53 ± 0.13	NR	0.54 ± 0.13
BH4787	09/11/87	9.50 - 10.52	27 ± 13	22 ± 6	0.66 ± 0.14	NR	0.73 ± 0.14
BH4787	09/11/87	11.50 - 12.66	29 ± 10	20 ± 6	0.35 ± 0.10	NR	0.44 ± 0.11
BH4787	09/11/87	13.50 - 14.78	23 ± 12	17 ± 6	0.65 ± 0.14	NR	0.66 ± 0.14
BH4787	09/11/87	15.00 - 15.65	24 ± 12	18 ± 6	0.32 ± 0.10	NR	0.40 ± 0.11
BH4787	09/14/87	16.00 - 17.62	18 ± 9	17 ± 6	0.52 ± 0.12	NR	0.29 ± 0.14
BH4787	09/14/87	20.50 - 21.00	17 ± 11	16 ± 6	0.48 ± 0.13	NR	0.36 ± 0.15
BH4787	09/14/87	21.00 - 22.50	18 ± 12	21 ± 6	0.42 ± 0.12	NR	0.30 ± 0.15
BH4787	09/14/87	22.50 - 24.30	10 ± 10	14 ± 6	0.42 ± 0.12	NR	0.44 ± 0.16
BH4887	09/16/87	6.00 - 7.14	12 ± 13	18 ± 6	0.52 ± 0.12	NR	0.45 ± 0.16
BH4887	09/17/87	10.00 - 11.43	15 ± 12	25 ± 6	0.45 ± 0.12	NR	0.51 ± 0.12
BH4987	09/18/87	6.00 - 7.30	21 ± 12	14 ± 6	0.61 ± 0.13	NR	0.41 ± 0.15
BH4987	09/18/87	8.00 - 15.54	25 ± 14	13 ± 6	0.60 ± 0.16	NR	0.50 ± 0.19
BH4987	09/21/87	20.00 - 22.00	36 ± 15	18 ± 6	0.27 ± 0.08	NR	0.27 ± 0.08
BH4987	09/21/87	22.00 - 24.00	20 ± 13	18 ± 6	0.8 ± 0.2	NR	1.1 ± 0.2
BH5087	09/17/87	7.00 - 8.90	22 ± 13	32 ± 7	0.53 ± 0.13	NR	0.66 ± 0.14
BH5087	09/17/87	12.00 - 12.90	11 ± 10	18 ± 6	0.51 ± 0.13	NR	0.45 ± 0.12
BH5187	09/18/87	0.00 - 9.00	***				
BH5187	09/22/87	12.00 - 14.40	24 ± 14	31 ± 6	0.47 ± 0.15	NR	0.59 ± 0.16
BH5187	09/22/87	14.50 - 17.00	15 ± 8	23 ± 6	0.42 ± 0.15	NR	0.54 ± 0.16
BH5287	09/22/87	0.00 - 9.50	11 ± 13	16 ± 6	1.0 ± 0.3	NR	0.74 ± 0.23
BH5287	09/22/87	12.00 - 13.00	15 ± 12	25 ± 6	0.44 ± 0.24	NR	0.46 ± 0.25
BH5387	09/11/87	0.00 - 18.80	28 ± 14	22 ± 7	0.72 ± 0.15	NR	0.63 ± 0.14
BH5387	09/11/87	2.00 - 3.50	13 ± 11	16 ± 6	0.45 ± 0.12	NR	0.32 ± 0.10
BH5387	09/11/87	6.00 - 7.80	15 ± 12	18 ± 6	0.43 ± 0.11	NR	0.52 ± 0.13

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Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH4687	09/03/87	24.50 - 25.10	-0.5 ± 1.0	0.09 ± 0.12	0.03 ± 0.10	0.0 ± 0.1	0.22 ± 0.20
BH4787	09/11/87	0.00 - 1.40	0.0 ± 0.5	0.24 ± 0.13	0.01 ± 0.06	0.0 ± 0.1	0.06 ± 0.19
BH4787	09/11/87	2.00 - 3.64	0.1 ± 0.5	-0.03 ± 0.11	0.08 ± 0.08	0.0 ± 0.1	0.10 ± 0.19
BH4787	09/11/87	4.00 - 5.32	-0.1 ± 0.5	0.01 ± 0.13	0.06 ± 0.09	0.0 ± 0.1	0.09 ± 0.19
BH4787	09/11/87	6.00 - 7.15	0.2 ± 0.5	0.02 ± 0.10	0.06 ± 0.08	0.0 ± 0.1	-0.14 ± 0.30
BH4787	09/11/87	8.00 - 9.00	0.0 ± 0.5	0.06 ± 0.14	0.00 ± 0.05	0.0 ± 0.1	-0.28 ± 0.30
BH4787	09/11/87	9.50 - 10.52	-0.2 ± 0.5	0.00 ± 0.13	0.04 ± 0.06	0.0 ± 0.1	-0.28 ± 0.30
BH4787	09/11/87	11.50 - 12.66	0.0 ± 0.5	0.01 ± 0.13	0.10 ± 0.08	0.0 ± 0.1	-0.26 ± 0.30
BH4787	09/11/87	13.50 - 14.78	0.2 ± 0.5	0.00 ± 0.12	0.00 ± 0.08	0.0 ± 0.1	-0.26 ± 0.30
BH4787	09/11/87	15.00 - 15.65	-0.1 ± 0.5	0.02 ± 0.12	0.06 ± 0.07	0.0 ± 0.1	0.08 ± 0.51
BH4787	09/14/87	16.00 - 17.62	0.0 ± 0.6	-0.04 ± 0.08	0.01 ± 0.07	0.0 ± 0.1	0.00 ± 0.19
BH4787	09/14/87	20.50 - 21.00	0.4 ± 0.6	0.03 ± 0.10	0.09 ± 0.11	0.0 ± 0.1	-0.3 ± 1.5
BH4787	09/14/87	21.00 - 22.50	0.0 ± 0.5	-0.02 ± 0.10	-0.06 ± 0.07	0.0 ± 0.1	0.03 ± 0.20
BH4787	09/14/87	22.50 - 24.30	-0.1 ± 0.3	-0.03 ± 0.07	0.05 ± 0.08	0.0 ± 0.1	0.01 ± 0.19
BH4887	09/16/87	6.00 - 7.14	0.2 ± 0.3	0.15 ± 0.14	0.02 ± 0.07	0.0 ± 0.1	-0.01 ± 0.18
BH4887	09/17/87	10.00 - 11.43	0.0 ± 0.5	0.03 ± 0.10	0.03 ± 0.07	0.0 ± 0.1	0.14 ± 0.19
BH4987	09/18/87	6.00 - 7.30	0.0 ± 0.4	0.10 ± 0.13	0.02 ± 0.07	0.1 ± 0.1	-0.04 ± 0.18
BH4987	09/18/87	8.00 - 15.54	0.2 ± 0.4	-0.01 ± 0.12	0.01 ± 0.06	0.0 ± 0.1	0.05 ± 0.29
BH4987	09/21/87	20.00 - 22.00	-0.1 ± 0.5	-0.01 ± 0.11	0.04 ± 0.07	0.0 ± 0.1	0.18 ± 0.19
BH4987	09/21/87	22.00 - 24.00	-0.2 ± 0.5	-0.03 ± 0.08	-0.01 ± 0.06	0.0 ± 0.1	0.05 ± 0.18
BH5087	09/17/87	7.00 - 8.90	-0.1 ± 0.5	0.03 ± 0.10	0.02 ± 0.07	0.0 ± 0.1	0.02 ± 0.18
BH5087	09/17/87	12.00 - 12.90	-0.1 ± 0.6	-0.01 ± 0.11	0.02 ± 0.06	0.0 ± 0.1	-0.26 ± 0.29
BH5187	09/18/87	0.00 - 9.00	***				
BH5187	09/22/87	12.00 - 14.40	0.2 ± 0.4	-0.06 ± 0.08	0.05 ± 0.10	0.0 ± 0.1	0.11 ± 0.19
BH5187	09/22/87	14.50 - 17.00	0.0 ± 0.5	-0.01 ± 0.09	0.01 ± 0.07	0.0 ± 0.1	0.11 ± 0.19
BH5287	09/22/87	0.00 - 9.50	-0.2 ± 0.4	0.58 ± 0.17	0.14 ± 0.10	0.0 ± 0.1	0.10 ± 0.19
BH5287	09/22/87	12.00 - 13.00	-0.1 ± 0.5	-0.03 ± 0.09	0.10 ± 0.09	0.0 ± 0.1	0.24 ± 0.19
BH5387	09/11/87	0.00 - 18.80	0.3 ± 0.5	6.0 ± 0.2)	0.53 ± 0.20	0.1 ± 0.1	0.23 ± 0.22
BH5387	09/11/87	2.00 - 3.50	0.3 ± 0.5	0.98 ± 0.24	0.06 ± 0.11	0.0 ± 0.1	0.29 ± 0.20
BH5387	09/11/87	6.00 - 7.80	0.0 ± 0.5	0.14 ± 0.12	0.02 ± 0.06	0.0 ± 0.1	-0.24 ± 0.30

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH5387	09/11/87	8.00 - 9.90	28 ± 14	27 ± 7	0.43 ± 0.11	NR	0.38 ± 0.10
BH5387	09/14/87	14.20 - 16.20	19 ± 12	19 ± 6	0.49 ± 0.14	NR	0.57 ± 0.17
BH5387	09/14/87	16.20 - 17.90	30 ± 14	26 ± 7	0.59 ± 0.15	NR	0.70 ± 0.18
BH5387	09/14/87	18.60 - 20.60	12 ± 11	20 ± 6	0.59 ± 0.13	NR	0.42 ± 0.15
BH5387	09/14/87	20.60 - 22.60	12 ± 10	21 ± 6	0.44 ± 0.11	NR	0.33 ± 0.15
BH5487	09/15/87	2.00 - 4.00	5.5 ± 6.6	11 ± 5	0.41 ± 0.11	NR	0.53 ± 0.13
BH5487	09/16/87	6.00 - 7.50	14 ± 13	20 ± 6	0.48 ± 0.14	NR	0.40 ± 0.17
BH5487	09/16/87	8.00 - 9.65	23 ± 13	16 ± 6	0.41 ± 0.12	NR	0.41 ± 0.16
BH5487	09/16/87	10.00 - 11.50	12 ± 12	15 ± 6	0.38 ± 0.11	NR	0.34 ± 0.15
BH5487	09/16/87	12.20 - 14.20	29 ± 14	17 ± 6	0.56 ± 0.14	NR	0.59 ± 0.18
BH5487	09/18/87	14.20 - 22.80	20 ± 13	31 ± 6	0.53 ± 0.13	NR	0.33 ± 0.15
BH5487	09/21/87	23.50 - 32.80	14 ± 12	27 ± 6	0.44 ± 0.10	NR	0.34 ± 0.09
BH5487	09/21/87	38.50 - 39.00	31 ± 15	27 ± 6	0.45 ± 0.11	NR	0.37 ± 0.10
BH5487	09/21/87	40.50 - 41.00	21 ± 14	15 ± 6	0.48 ± 0.11	NR	0.49 ± 0.11
BH5587	09/15/87	2.00 - 3.30	23 ± 12	20 ± 6	0.37 ± 0.10	NR	0.49 ± 0.12
BH5587	09/15/87	9.50 - 10.90	25 ± 12	14 ± 6	0.47 ± 0.12	NR	0.36 ± 0.11
BH5587	09/15/87	12.00 - 14.00	24 ± 12	17 ± 6	0.46 ± 0.17	NR	0.42 ± 0.17
BH5587	09/15/87	14.50 - 23.50	31 ± 13	20 ± 6	0.48 ± 0.11	NR	0.43 ± 0.11
BH5587	09/15/87	27.00 - 29.20	25 ± 12	20 ± 6	0.40 ± 0.17	NR	0.33 ± 0.14
BH5587	09/09/87	29.50 - 32.00	15 ± 10	19 ± 6	0.64 ± 0.12	NR	0.54 ± 0.11
BH5687	09/10/87	2.00 - 3.50	13 ± 8	19 ± 6	0.61 ± 0.20	NR	0.78 ± 0.22
BH5687	09/10/87	4.00 - 5.30	9.7 ± 7.9	16 ± 6	0.53 ± 0.15	NR	0.49 ± 0.14
BH5687	09/10/87	9.50 - 10.40	16 ± 10	20 ± 6	0.48 ± 0.13	NR	0.41 ± 0.12
BH5687	09/10/87	12.00 - 14.00	34 ± 14	28 ± 6	0.39 ± 0.11	NR	0.38 ± 0.10
BH5687	09/11/87	17.00 - 18.90	54 ± 17	27 ± 6	3.4 ± 0.3	NR	3.9 ± 0.3
BH5687	09/11/87	19.50 - 22.00	30 ± 14	26 ± 6	0.57 ± 0.13	NR	0.68 ± 0.14

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	11 ± 10	14 ± 6	NR	NR	NR
BH3987	08/12/87	19.50 - 22.00	19 ± 11	17 ± 6	NR	NR	NR
BH4287	08/19/87	24.50 - 27.00	16 ± 10	20 ± 6	0.82 ± 0.25	NR	0.76 ± 0.22

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Rocky Flats Alluvium

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH5387	09/11/87	8.00 - 9.90	0.3 ± 0.7	0.13 ± 0.21	0.04 ± 0.06	0.0 ± 0.1	0.26 ± 0.20
BH5387	09/14/87	14.20 - 16.20	0.0 ± 0.5	0.03 ± 0.15	0.03 ± 0.09	0.0 ± 0.1	0.00 ± 0.39
BH5387	09/14/87	16.20 - 17.90	0.2 ± 0.5	-0.02 ± 0.09	0.07 ± 0.08	0.0 ± 0.1	-0.08 ± 0.19
BH5387	09/14/87	18.60 - 20.60	0.3 ± 0.6	-0.02 ± 0.10	0.10 ± 0.09	0.0 ± 0.1	0.18 ± 0.20
BH5387	09/14/87	20.60 - 22.60	0.0 ± 0.6	0.00 ± 0.10	0.07 ± 0.08	0.0 ± 0.1	0.01 ± 0.19
BH5487	09/15/87	2.00 - 4.00	0.2 ± 0.5	0.31 ± 0.14	0.05 ± 0.09	0.0 ± 0.1	-0.03 ± 0.19
BH5487	09/16/87	6.00 - 7.50	-0.2 ± 0.5	0.02 ± 0.09	-0.04 ± 0.05	0.0 ± 0.1	0.13 ± 0.19
BH5487	09/16/87	8.00 - 9.65	-0.2 ± 0.4	-0.01 ± 0.08	0.03 ± 0.07	0.0 ± 0.1	-0.07 ± 0.29
BH5487	09/16/87	10.00 - 11.50	0.0 ± 0.4	0.11 ± 0.13	-0.01 ± 0.06	0.0 ± 0.1	0.00 ± 0.29
BH5487	09/16/87	12.20 - 14.20	-0.1 ± 0.5	0.11 ± 0.13	0.00 ± 0.07	0.0 ± 0.1	-0.03 ± 0.29
BH5487	09/18/87	14.20 - 22.80	-0.1 ± 0.5	-0.03 ± 0.08	0.01 ± 0.06	0.0 ± 0.1	0.15 ± 0.19
BH5487	09/21/87	23.50 - 32.80	0.1 ± 0.5	-0.01 ± 0.09	0.06 ± 0.08	0.0 ± 0.1	0.12 ± 0.19
BH5487	09/21/87	38.50 - 39.00	0.0 ± 0.5	0.00 ± 0.12	0.08 ± 0.08	0.0 ± 0.1	0.15 ± 0.19
BH5487	09/21/87	40.50 - 41.00	0.3 ± 0.8	-0.02 ± 0.10	0.04 ± 0.08	0.0 ± 0.1	0.15 ± 0.19
BH5587	09/15/87	2.00 - 3.30	-0.1 ± 0.5	0.06 ± 0.09	-0.03 ± 0.08	0.0 ± 0.1	0.03 ± 0.20
BH5587	09/15/87	9.50 - 10.90	0.3 ± 0.6	0.09 ± 0.16	-0.06 ± 0.07	0.0 ± 0.1	-0.08 ± 0.31
BH5587	09/15/87	12.00 - 14.00	0.2 ± 0.6	0.07 ± 0.11	-0.05 ± 0.08	0.0 ± 0.1	-0.16 ± 0.19
BH5587	09/15/87	14.50 - 23.50	-0.1 ± 0.6	0.07 ± 0.13	0.10 ± 0.13	0.0 ± 0.1	0.01 ± 0.19
BH5587	09/15/87	27.00 - 29.20	0.4 ± 0.6	0.08 ± 0.13	0.01 ± 0.09	0.0 ± 0.1	-0.09 ± 0.19
BH5587	09/09/87	29.50 - 32.00	-0.3 ± 0.6	0.03 ± 0.09	0.00 ± 0.09	0.0 ± 0.1	-0.08 ± 0.19
BH5687	09/10/87	2.00 - 3.50	-0.2 ± 0.7	-0.03 ± 0.09	0.01 ± 0.05	0.0 ± 0.1	0.18 ± 0.19
BH5687	09/10/87	4.00 - 5.30	0.3 ± 0.7	0.06 ± 0.13	-0.01 ± 0.04	0.0 ± 0.1	0.06 ± 0.19
BH5687	09/10/87	9.50 - 10.40	0.1 ± 0.4	-0.07 ± 0.12	0.04 ± 0.06	0.0 ± 0.1	-0.27 ± 0.30
BH5687	09/10/87	12.00 - 14.00	-0.3 ± 0.4	-0.07 ± 0.13	0.09 ± 0.09	0.0 ± 0.1	0.18 ± 0.19
BH5687	09/11/87	17.00 - 18.90	0.5 ± 0.6	-0.04 ± 0.12	0.08 ± 0.10	0.0 ± 0.1	-0.25 ± 0.30
BH5687	09/11/87	19.50 - 22.00	0.4 ± 0.6	0.02 ± 0.10	0.03 ± 0.06	0.0 ± 0.1	0.28 ± 0.20

East Trenches Area Sandstone

BH3987	08/12/87	17.00 - 19.50	0.3 ± 0.5	0.04 ± 0.11	0.00 ± 0.08	0.0 ± 0.1	0.40 ± 0.20
BH3987	08/12/87	19.50 - 22.00	0.6 ± 0.5	0.08 ± 0.13	0.00 ± 0.08	0.0 ± 0.1	0.20 ± 0.19
BH4287	08/19/87	24.50 - 27.00	0.0 ± 0.4	-0.09 ± 0.11	0.00 ± 0.09	0.0 ± 0.1	0.39 ± 0.20

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH4287	08/19/87	27.00 - 29.50	31 ± 11	24 ± 6	0.86 ± 0.22	NR	0.87 ± 0.20
BH4287	08/19/87	29.50 - 32.00	42 ± 12	16 ± 6	0.76 ± 0.23	NR	0.77 ± 0.20
BH4287	08/19/87	32.00 - 34.50	32 ± 11	14 ± 6	0.55 ± 0.29	NR	0.67 ± 0.29
BH4287	08/19/87	34.50 - 35.90	20 ± 10	5.3 ± 5.1	0.14 ± 0.12	NR	0.37 ± 0.14
BH4287	08/19/87	37.00 - 39.50	10 ± 8	4.8 ± 5.0	0.28 ± 0.18	NR	0.29 ± 0.15
BH4287	08/20/87	39.50 - 40.40	6.0 ± 7.3	3.8 ± 4.9	0.45 ± 0.18	NR	0.44 ± 0.14
BH4287	08/21/87	45.50 - 47.00	30 ± 11	9.9 ± 5.3	0.32 ± 0.17	NR	0.33 ± 0.17
BH4487	09/09/87	29.50 - 32.00	14 ± 10	10 ± 5	0.50 ± 0.14	NR	0.59 ± 0.18
BH4487	09/09/87	32.00 - 34.50	20 ± 11	16 ± 6	0.44 ± 0.12	NR	0.43 ± 0.16
BH4587	08/31/87	20.00 - 22.30	16 ± 9	15 ± 6	0.44 ± 0.12	NR	0.68 ± 0.15
BH4587	08/31/87	22.50 - 25.00	15 ± 9	14 ± 6	0.37 ± 0.10	NR	0.43 ± 0.11
BH4587	09/01/87	32.50 - 33.90	24 ± 10	14 ± 6	0.43 ± 0.13	NR	0.56 ± 0.14
BH4587	09/01/87	35.00 - 37.50	20 ± 9	17 ± 6	0.57 ± 0.16	NR	0.72 ± 0.18
BH5187	09/22/87	17.00 - 19.50	12 ± 12	19 ± 6	0.40 ± 0.16	NR	0.52 ± 0.17
BH5687	09/11/87	22.00 - 24.30	23 ± 12	19 ± 6	0.80 ± 0.15	NR	1.2 ± 0.2

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	34 ± 13	22 ± 6	NR	NR	NR
BH4087	08/13/87	9.50 - 12.00	20 ± 12	19 ± 6	NR	NR	NR
BH4187	08/17/87	17.00 - 19.50	19 ± 13	15 ± 6	0.63 ± 0.19	NR	0.78 ± 0.19
BH4387	09/08/87	27.20 - 29.70	35 ± 15	24 ± 6	0.57 ± 0.18	NR	0.70 ± 0.20
BH4387	09/08/87	29.70 - 32.00	26 ± 14	28 ± 6	1.1 ± 0.4	NR	1.1 ± 0.4
BH4387	09/08/87	29.70 - 32.00	22 ± 12	24 ± 6	0.94 ± 0.20	NR	0.91 ± 0.23
BH4587	08/31/87	25.00 - 27.50	25 ± 10	22 ± 6	0.51 ± 0.13	NR	0.63 ± 0.14
BH4587	08/31/87	27.50 - 30.00	23 ± 10	22 ± 6	0.82 ± 0.16	NR	0.79 ± 0.16
BH4587	08/31/87	30.00 - 32.50	20 ± 9	23 ± 6	0.71 ± 0.15	NR	0.72 ± 0.15

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Operable Unit No. 2

Total Radiochemistry Soil Sampling Results

East Trenches Area Sandstone

Borehole Number	Date Sampled	Depth Increment (ft.)	Strontium 89,90 pCi/g	Plutonium 239 pCi/g	Americium 241 pCi/g	Cesium 137 pCi/g	Tritium pCi/ml
BH4287	08/19/87	27.00 - 29.50	0.1 ± 0.4	-0.11 ± 0.11	0.03 ± 0.09	0.0 ± 0.1	0.19 ± 0.19
BH4287	08/19/87	29.50 - 32.00	-0.1 ± 0.4	0.00 ± 0.15	0.08 ± 0.10	0.0 ± 0.1	0.22 ± 0.19
BH4287	08/19/87	32.00 - 34.50	-0.1 ± 0.4	-0.08 ± 0.11	-0.02 ± 0.08	0.0 ± 0.1	0.26 ± 0.20
BH4287	08/19/87	34.50 - 35.90	0.0 ± 0.4	-0.09 ± 0.12	0.05 ± 0.12	0.0 ± 0.1	0.23 ± 0.19
BH4287	08/19/87	37.00 - 39.50	0.2 ± 0.4	-0.07 ± 0.12	0.00 ± 0.08	0.0 ± 0.1	0.19 ± 0.19
BH4287	08/20/87	39.50 - 40.40	0.1 ± 0.3	-0.04 ± 0.12	0.04 ± 0.10	0.0 ± 0.1	0.01 ± 0.19
BH4287	08/21/87	45.50 - 47.00	0.2 ± 0.4	-0.06 ± 0.11	-0.01 ± 0.08	0.0 ± 0.1	0.17 ± 0.19
BH4487	09/09/87	29.50 - 32.00	-0.1 ± 0.4	0.00 ± 0.07	0.01 ± 0.10	0.0 ± 0.1	0.26 ± 0.20
BH4487	09/09/87	32.00 - 34.50	-0.2 ± 0.4	-0.01 ± 0.10	0.07 ± 0.10	0.0 ± 0.1	0.27 ± 0.20
BH4587	08/31/87	20.00 - 22.30	0.4 ± 0.6	0.04 ± 0.09	0.00 ± 0.11	0.0 ± 0.1	0.06 ± 0.19
BH4587	08/31/87	22.50 - 25.00	0.4 ± 0.7	0.04 ± 0.08	0.08 ± 0.13	0.0 ± 0.1	0.07 ± 0.19
BH4587	09/01/87	32.50 - 33.90	0.0 ± 0.6	-0.02 ± 0.11	0.02 ± 0.10	0.0 ± 0.1	0.27 ± 0.20
BH4587	09/01/87	35.00 - 37.50	0.1 ± 0.7	0.04 ± 0.09	-0.02 ± 0.06	0.0 ± 0.1	0.09 ± 0.19
BH5187	09/22/87	17.00 - 19.50	0.1 ± 0.4	0.04 ± 0.12	0.00 ± 0.06	0.0 ± 0.1	0.03 ± 0.18
BH5687	09/11/87	22.00 - 24.30	-0.2 ± 0.5	0.02 ± 0.10	-0.01 ± 0.04	0.0 ± 0.1	0.04 ± 0.19

East Trenches Area Claystone

BH3987	08/12/87	14.50 - 17.00	0.5 ± 0.6	-0.01 ± 0.19	0.08 ± 0.12	0.0 ± 0.1	0.26 ± 0.19
BH4087	08/13/87	9.50 - 12.00	0.6 ± 0.4	0.07 ± 0.11	0.06 ± 0.10	0.0 ± 0.1	0.34 ± 0.19
BH4187	08/17/87	17.00 - 19.50	0.0 ± 0.5	-0.06 ± 0.11	0.02 ± 0.10	0.0 ± 0.1	0.31 ± 0.20
BH4387	09/08/87	27.20 - 29.70	0.2 ± 0.8	0.01 ± 0.09	0.02 ± 0.09	0.0 ± 0.1	0.13 ± 0.19
BH4387	09/08/87	29.70 - 32.00	-0.3 ± 0.5	0.01 ± 0.10	-0.01 ± 0.08	0.0 ± 0.1	0.38 ± 0.20
BH4387	09/08/87	29.70 - 32.00	-0.4 ± 0.5	0.04 ± 0.08	0.05 ± 0.10	0.0 ± 0.1	0.15 ± 0.19
BH4587	08/31/87	25.00 - 27.50	0.1 ± 0.6	-0.01 ± 0.11	-0.02 ± 0.10	0.0 ± 0.1	0.37 ± 0.20
BH4587	08/31/87	27.50 - 30.00	0.4 ± 0.6	-0.04 ± 0.07	-0.04 ± 0.07	0.0 ± 0.1	0.10 ± 0.19
BH4587	08/31/87	30.00 - 32.50	0.7 ± 0.6	-0.01 ± 0.11	-0.04 ± 0.10	0.0 ± 0.1	0.10 ± 0.19

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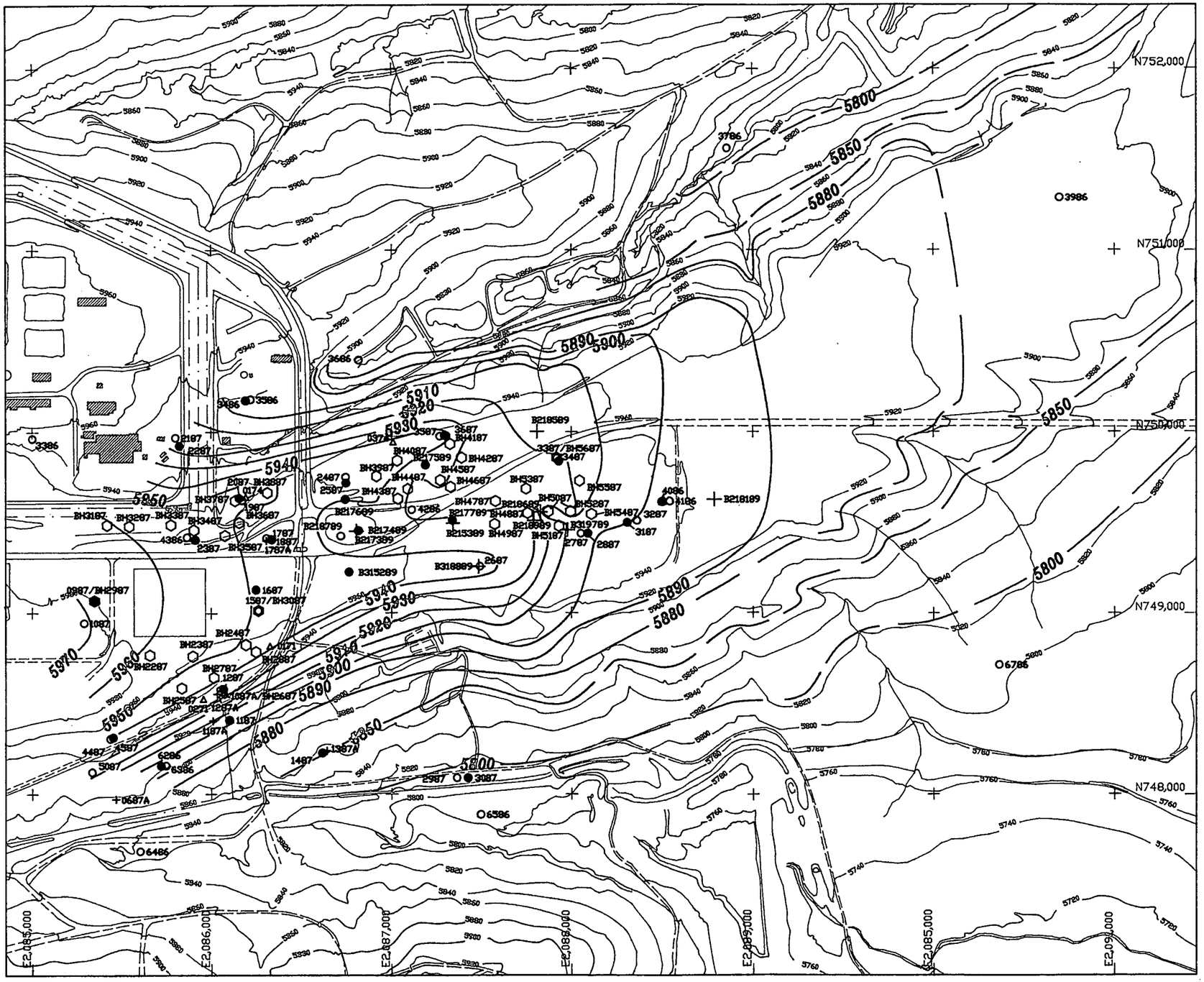
Total Radiochemistry Soil Sampling Results

East Trenches Area Claystone

Borehole Number	Date Sampled	Depth Increment (ft.)	Gross Alpha pCi/g	Gross Beta pCi/g	Uranium 233, 234 pCi/g	Uranium 235 pCi/g	Uranium 238 pCi/g
BH4687	09/03/87	27.00 - 29.50	40 ± 16	24 ± 6	1.1 ± 0.3	NR	1.5 ± 0.3
BH4687	09/03/87	29.50 - 32.00	17 ± 12	24 ± 6	0.45 ± 0.17	NR	0.88 ± 0.22
BH4787	09/15/87	26.20 - 27.20	21 ± 11	21 ± 6	0.63 ± 0.13	NR	0.82 ± 0.15
BH4787	09/15/87	26.20 - 27.20	24 ± 12	28 ± 7	0.75 ± 0.17	NR	0.97 ± 0.19
BH4787	09/15/87	27.20 - 28.20	32 ± 12	22 ± 6	0.80 ± 0.15	NR	0.91 ± 0.16
BH4887	09/17/87	13.20 - 15.11	18 ± 13	17 ± 6	0.76 ± 0.15	NR	0.66 ± 0.14
BH4887	09/17/87	15.20 - 16.70	26 ± 14	17 ± 6	0.54 ± 0.20	NR	0.71 ± 0.22
BH4987	09/21/87	24.14 - 25.64	29 ± 14	17 ± 6	0.75 ± 0.13	NR	0.71 ± 0.13
BH5087	09/17/87	14.50 - 17.00	18 ± 12	26 ± 6	0.43 ± 0.12	NR	0.92 ± 0.17
BH5087	09/17/87	17.00 - 19.50	16 ± 12	19 ± 6	0.51 ± 0.15	NR	0.83 ± 0.18
BH5287	09/22/87	22.00 - 24.00	27 ± 14	23 ± 6	0.37 ± 0.14	NR	0.63 ± 0.16
BH5287	09/22/87	24.00 - 25.00	30 ± 14	18 ± 6	0.85 ± 0.20	NR	0.89 ± 0.20
BH5387	09/14/87	22.60 - 24.00	31 ± 14	23 ± 6	0.69 ± 0.14	NR	0.66 ± 0.17
BH5487	09/21/87	42.50 - 44.00	20 ± 13	12 ± 6	0.74 ± 0.14	NR	0.69 ± 0.14
BH5487	09/21/87	42.50 - 44.00	21 ± 13	16 ± 6	0.55 ± 0.12	NR	0.59 ± 0.12
BH5587	09/15/87	32.00 - 34.10	30 ± 14	11 ± 6	0.71 ± 0.15	NR	0.88 ± 0.16
BH5587	09/15/87	32.00 - 34.10	25 ± 13	14 ± 6	0.57 ± 0.12	NR	0.77 ± 0.14
BH5587	09/15/87	34.50 - 36.60	19 ± 12	10 ± 6	0.76 ± 0.14	NR	0.67 ± 0.14
BH5787	10/07/87	12.00 - 14.00	27 ± 11	21 ± 6	0.72 ± 0.15	NR	0.81 ± 0.16
BH5787	10/08/87	14.00 - 16.00	30 ± 11	24 ± 6	1.6 ± 0.2	NR	1.3 ± 0.2
BH5787	10/08/87	16.00 - 18.00	35 ± 12	35 ± 7	0.95 ± 0.16	NR	1.4 ± 0.2
BH5787	10/08/87	18.00 - 20.00	36 ± 12	24 ± 6	0.80 ± 0.16	NR	0.93 ± 0.17
BH5787	10/08/87	20.00 - 22.00	28 ± 11	31 ± 6	0.99 ± 0.16	NR	1.0 ± 0.2
BH5787	10/08/87	22.00 - 24.00	21 ± 11	29 ± 6	1.2 ± 0.2	NR	1.1 ± 0.2
BH5787	10/08/87	24.00 - 26.00	22 ± 11	34 ± 6	2.2 ± 0.2	NR	1.8 ± 0.2
BH5787	10/08/87	26.00 - 28.00	16 ± 9	24 ± 6	1.5 ± 0.2	NR	1.5 ± 0.2
BH5787	10/08/87	28.00 - 30.00	16 ± 9	32 ± 6	1.4 ± 0.2	NR	1.2 ± 0.2

VALUE QUALIFIERS: NR = Analyte not reported *** = Insufficient Sample for Radiochemistry Analyses

DATA VALIDATION QUALFIERS: (No validation qualifier indicates data has not been validated.) R = Rejected; A = Acceptable with qualifications; V = Valid



EXPLANATION

5900 — TOP OF BEDROCK ELEVATION (FEET ABOVE M.S.L.) CONTOUR INTERVAL VARIES

B217489	●	BEDROCK MONITOR WELL
B213789	○	ALLUVIAL MONITOR WELL
0392	△	PRE-1986 MONITOR WELL
B217389	+	ABANDONED HOLE
BH4987	⬡	BOREHOLE

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-3

TOP OF BEDROCK ELEVATION

April 1990

RF6001.PJ-032690

EXPLANATION

CONTACT
DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE INFERRED.

ARTIFICIAL FILL

PAVEMENT OR GRAVEL

DISTURBED GROUND

QUATERNARY

Qal	RECENT VALLEY FILL
Ql	LANDSLIDE
Qc	COLLUVIUM
Qt	TERRACE ALLUVIUM
Qs	SLOCUM ALLUVIUM
Qv	VERDOS ALLUVIUM
Qrf	ROCKY FLATS ALLUVIUM

CRETACEOUS

Kass	ARAPAHOE FORMATION, SANDSTONE
Ka	ARAPAHOE FORMATION, CLAYSTONE

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

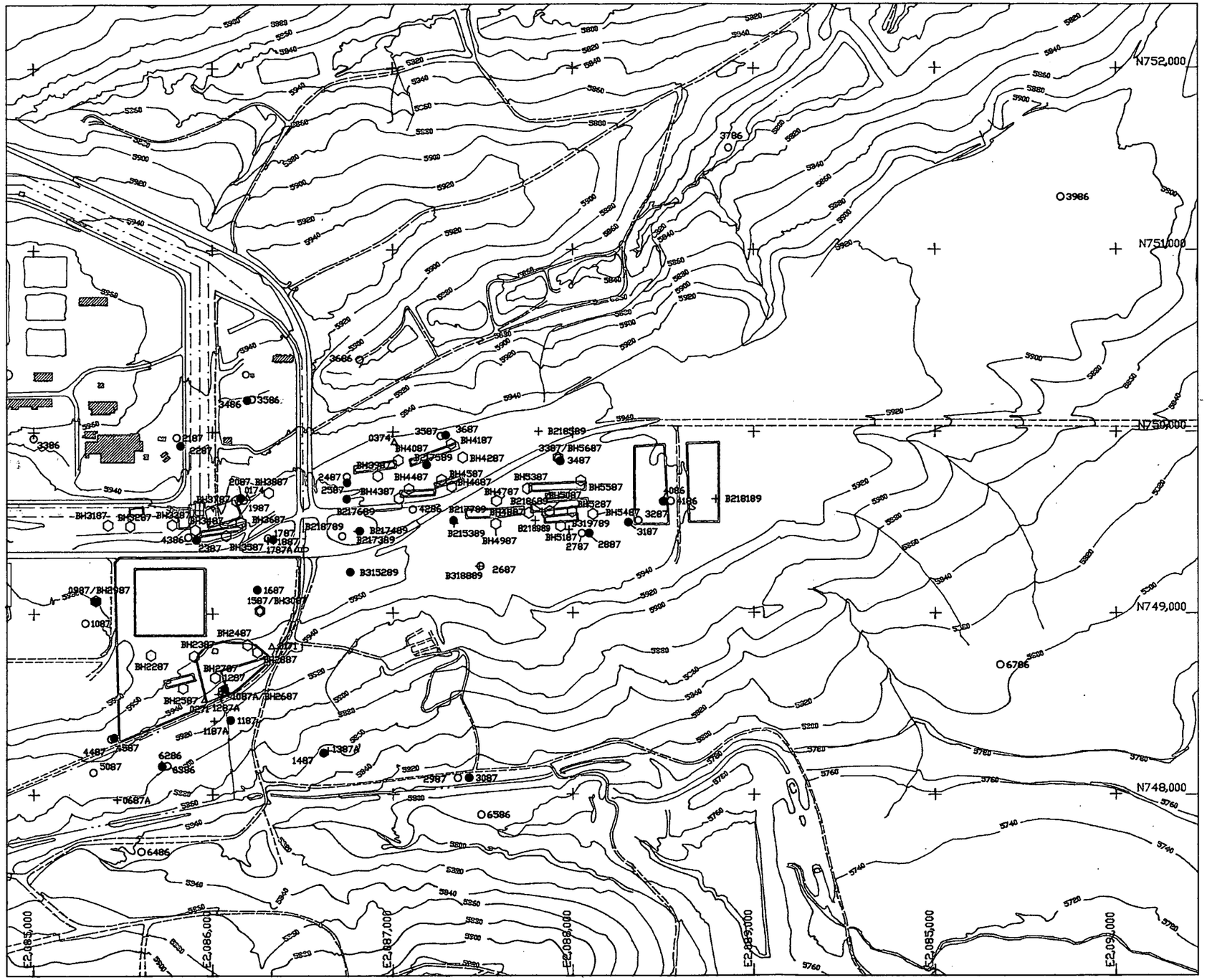
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-2
SURFICIAL GEOLOGY

April 1990

RF600J.PJ-032690



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU) AND SWMU DESIGNATION

B217489	●	BEDROCK MONITOR WELL
B213789	○	ALLUVIAL MONITOR WELL
0392	△	PRE-1986 MONITOR WELL
B217389	+	ABANDONED HOLE
BH4987	⬡	BOREHOLE

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-1

PHASE I REMEDIAL INVESTIGATION
MONITOR WELL AND
BOREHOLE LOCATIONS

April 1990

RF600Q.MB-032390

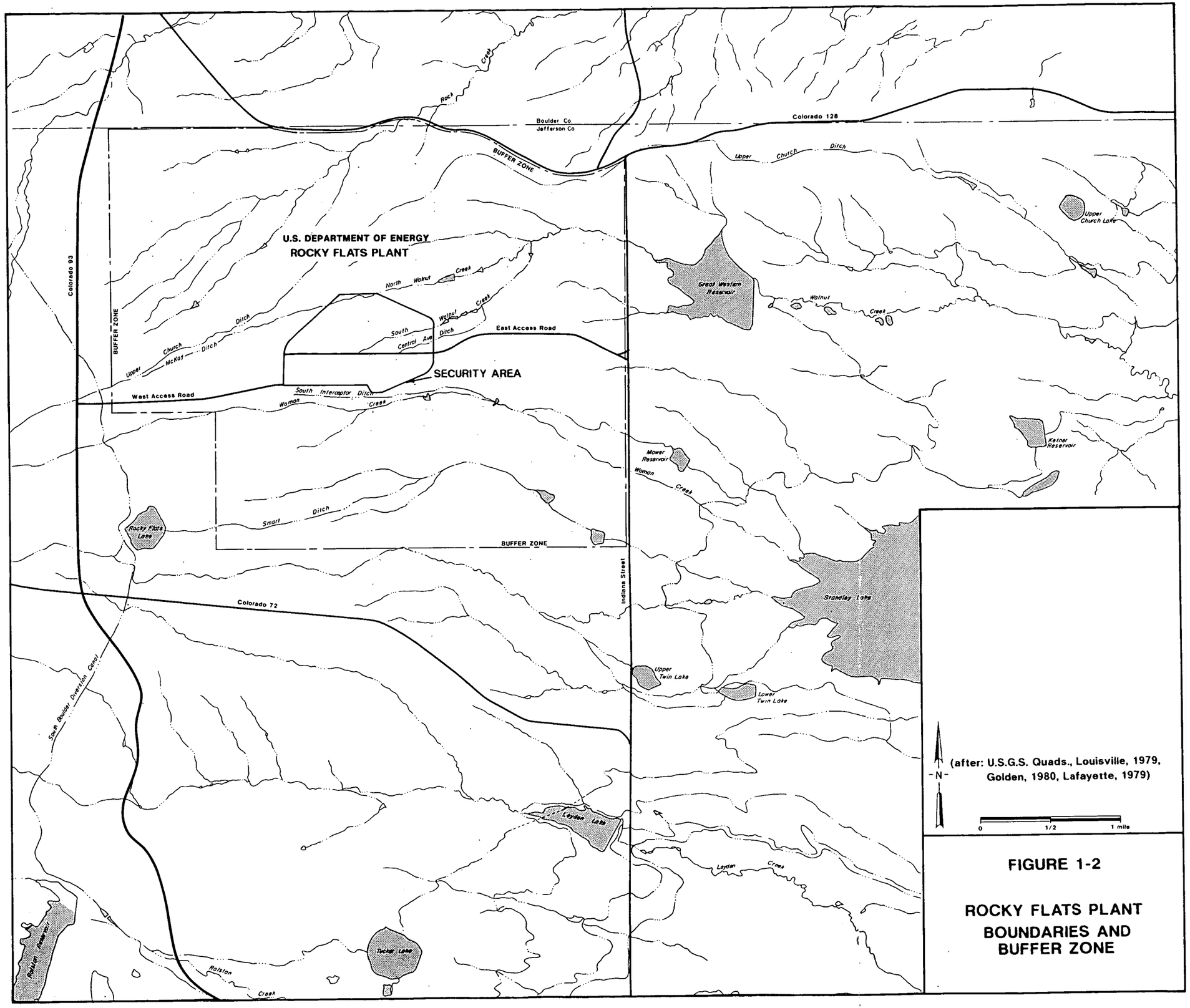
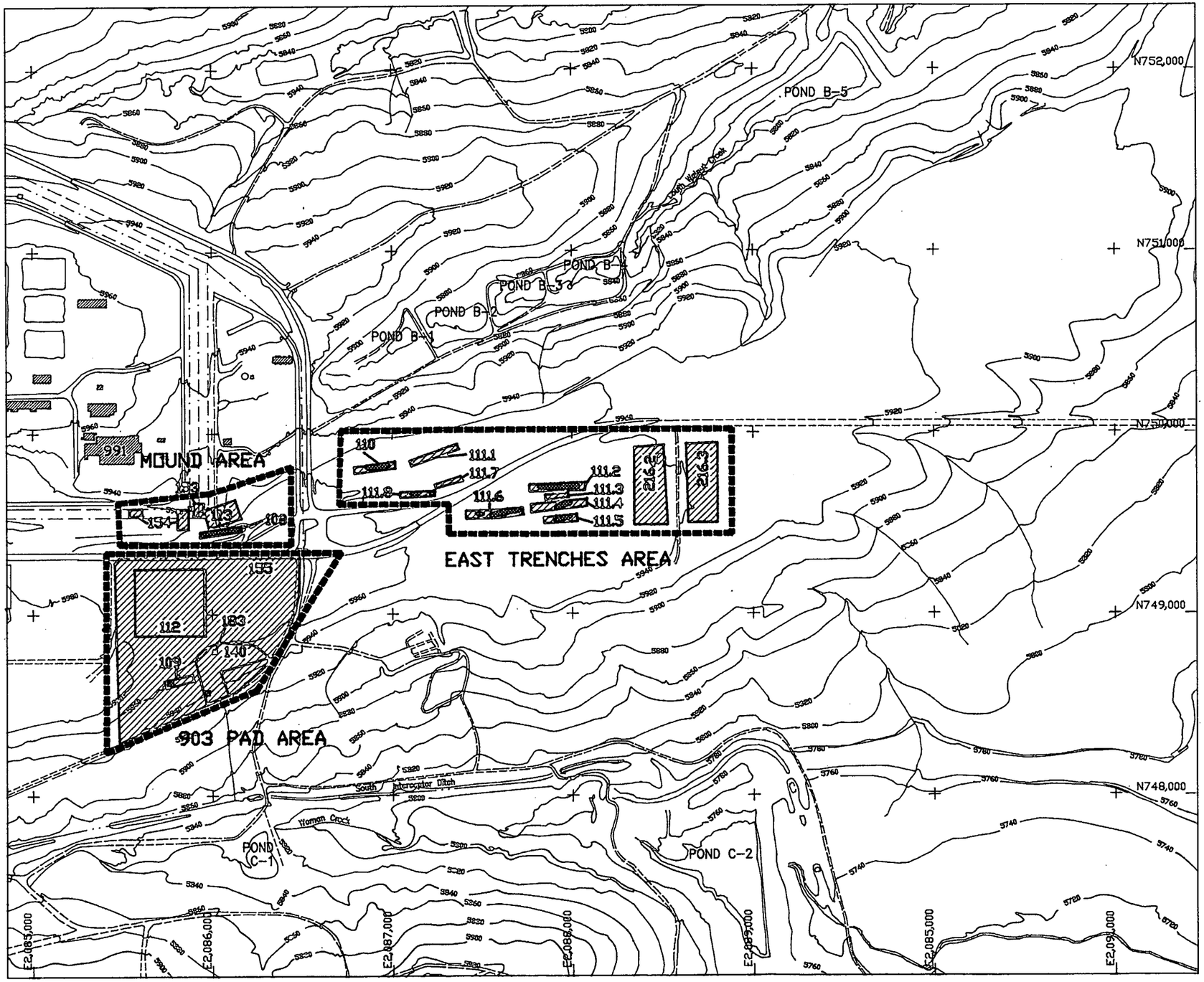


FIGURE 1-2

ROCKY FLATS PLANT BOUNDARIES AND BUFFER ZONE



EXPLANATION

216.2 — SOLID WASTE MANAGEMENT UNIT (SWMU) AND SWMU DESIGNATION

LOCATION OF BARRELS DETERMINED BY VISUAL INSPECTION OR MAGNETOMETER SURVEY

REMEDIAL INVESTIGATION AREAS

-N-

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

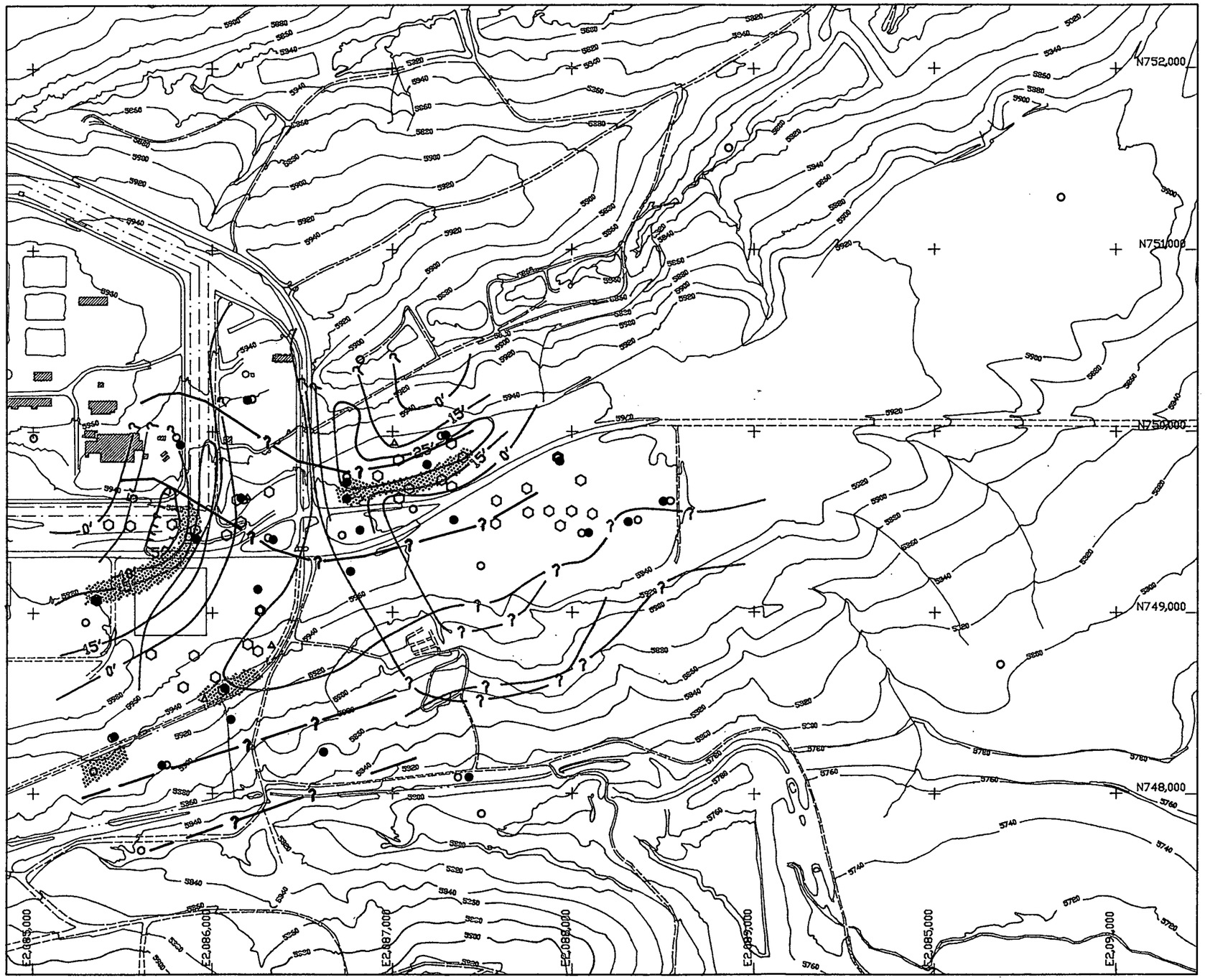
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 1-5

REMEDIAL INVESTIGATION AREAS AND SOLID WASTE MANAGEMENT UNITS

April 1990

RF600A.MB-032390



EXPLANATION

- ● BEDROCK MONITOR WELL
- ○ ALLUVIAL MONITOR WELL
- △ PRE-1986 MONITOR WELL
- ⬡ BOREHOLE

SUBCROPPING ARAPAHOE SANDSTONE

10' ISOPACH OF ARAPAHOE SANDSTONE #1

EXTENT OF ARAPAHOE SANDSTONE #3

EXTENT OF ARAPAHOE SANDSTONE #4

DASHED WHERE APPROXIMATELY LOCATED, QUERIED WHERE INFERRED

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

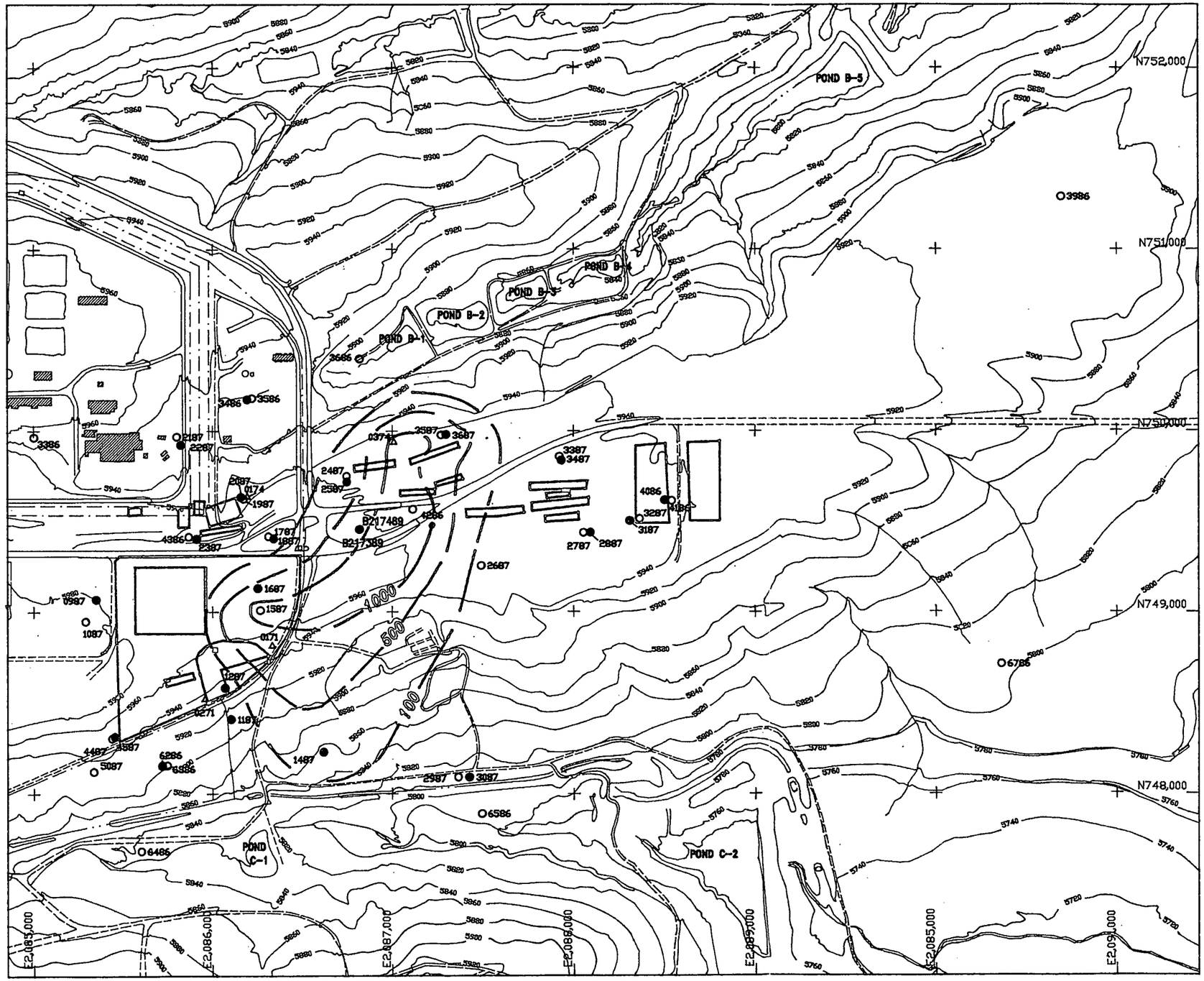
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-4

ESTIMATED EXTENT OF UPPERMOST ARAPAHOE SANDSTONES

April 1990

RF600U.PJ-040990



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU)

500 — LINE OF EQUAL CCl_4 CONCENTRATION ($\mu g/l$) DASHED WHERE APPROXIMATELY LOCATED

NOTE: DATA VALUES SHOWN ON TABLE 2-10

B217489 ● BEDROCK MONITOR WELL

B213789 ○ ALLUVIAL MONITOR WELL

0382 △ PRE-1986 MONITOR WELL

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

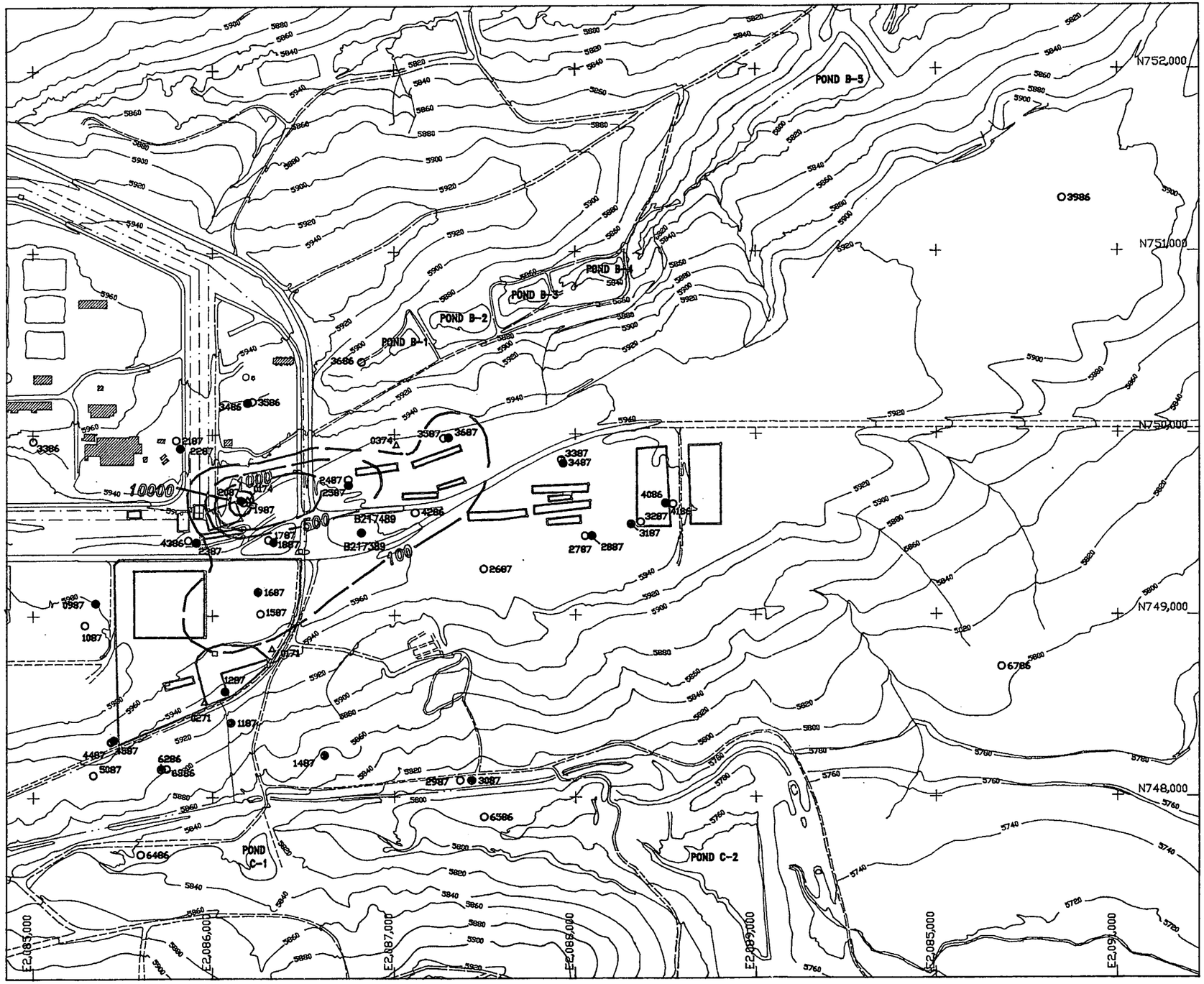
OPERABLE UNIT NO.2
RI/FS WORK PLAN

FIGURE 2-8

CARBON TETRACHLORIDE ISOPLETHS FOR THE UNCONFINED GROUND-WATER FLOW SYSTEM
Second Quarter 1989

April 1990

RF5000.PJ-032690



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU) AND SWMU DESIGNATION

500 — LINE OF EQUAL PCE CONCENTRATION (µg/l) DASHED WHERE APPROXIMATELY LOCATED

NOTE: DATA VALUES SHOWN ON TABLE 2-10

B217489 ● BEDROCK MONITOR WELL

B213789 ○ ALLUVIAL MONITOR WELL

0382 △ PRE-1986 MONITOR WELL

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

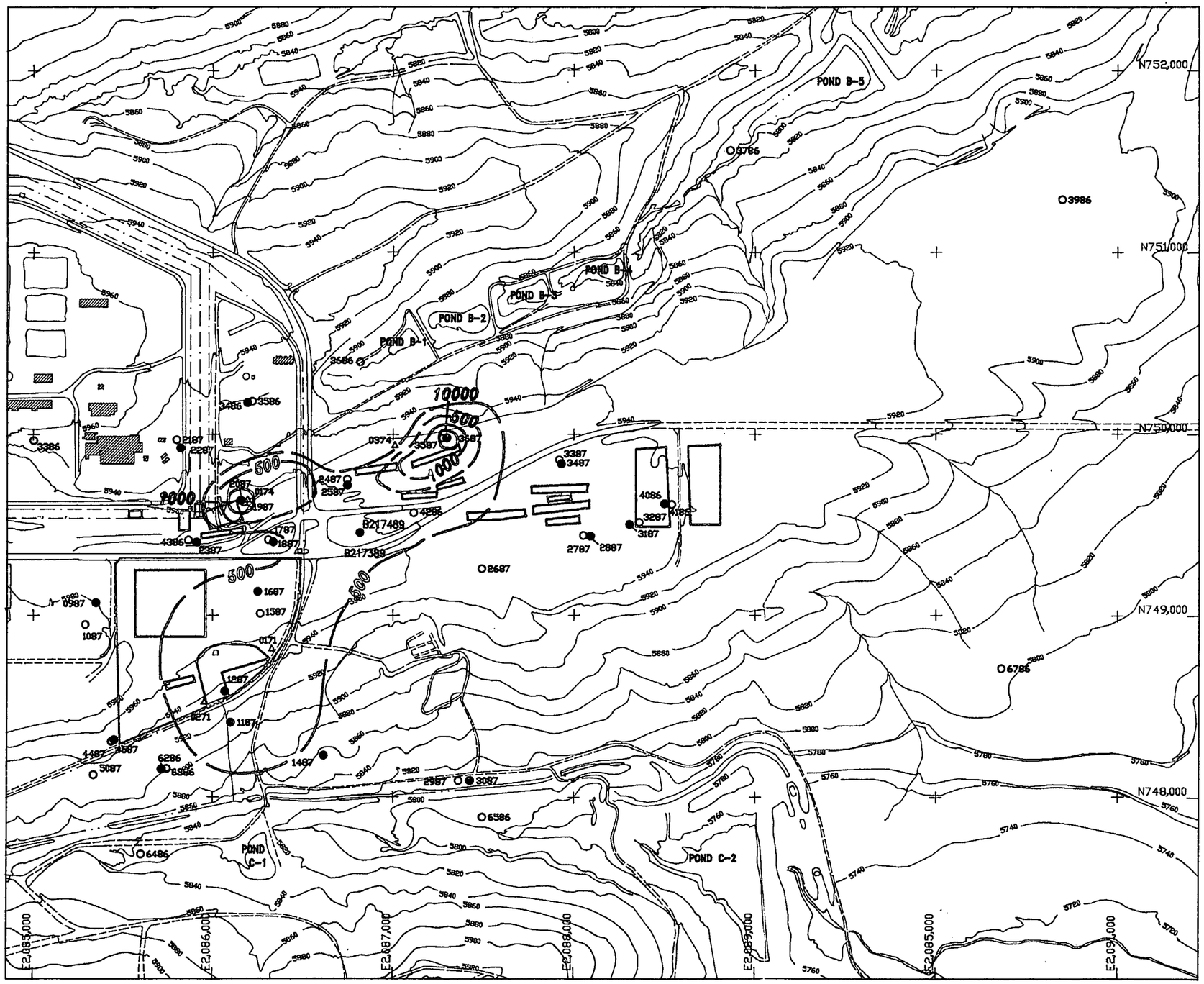
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-9

TETRACHLOROETHENE ISOPLETHS FOR THE UNCONFINED GROUND-WATER FLOW SYSTEM
Second Quarter 1989

April 1990

RF600F.PJ-032690



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU)

500 LINE OF EQUAL TCE CONCENTRATION (µg/l) DASHED WHERE APPROXIMATELY LOCATED

NOTE: DATA VALUES SHOWN ON TABLE 2-10

B217489 ● BEDROCK MONITOR WELL
B213789 ○ ALLUVIAL MONITOR WELL
0382 △ PRE-1986 MONITOR WELL

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

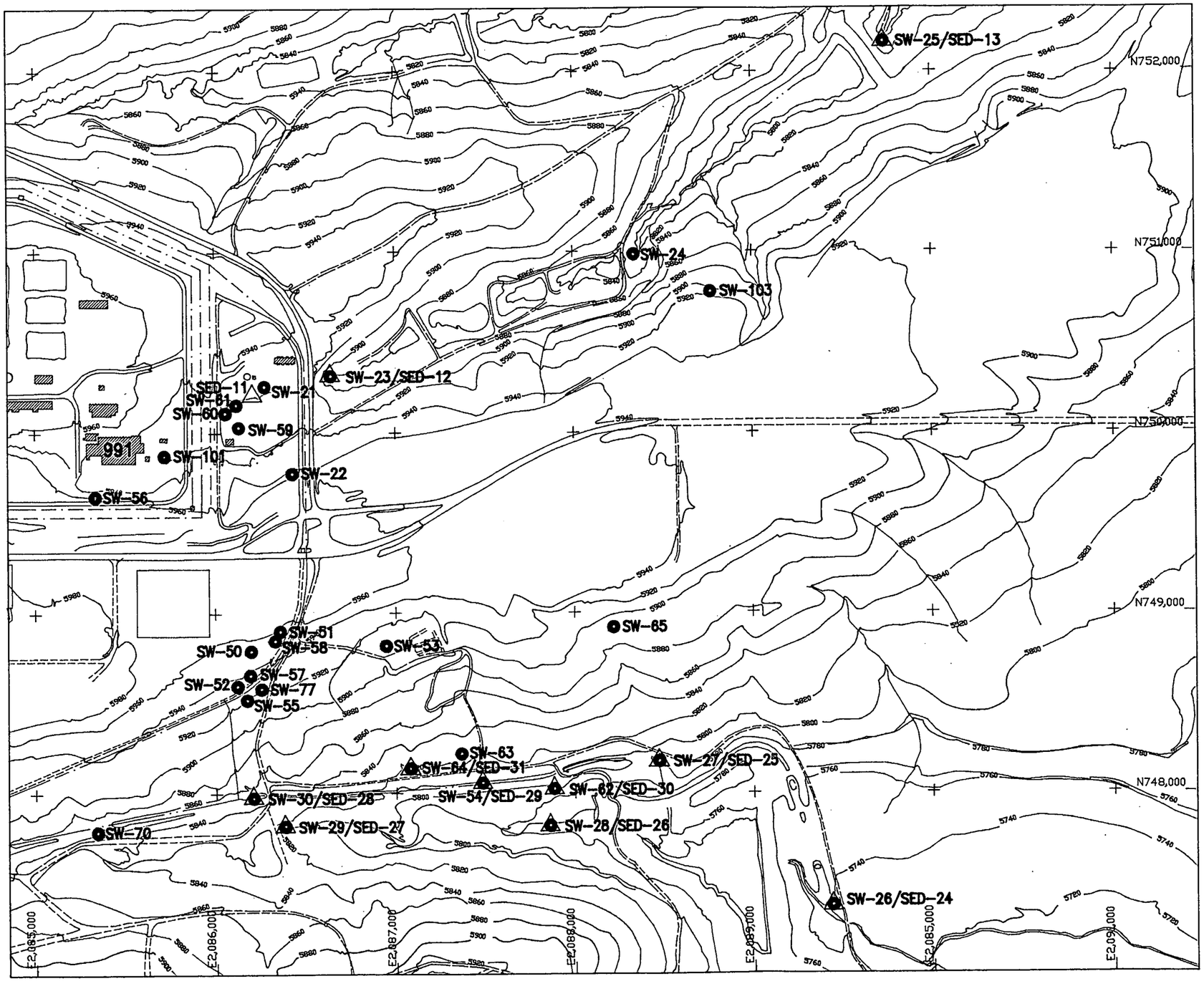
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-10

TRICHLOROETHENE ISOPLETHS
FOR THE UNCONFINED GROUND-WATER
FLOW SYSTEM
Second Quarter 1989

April 1990

RF600H.PJ-032690



EXPLANATION

SW-102 — SURFACE WATER MONITORING STATION

SED-11 — SEDIMENT SAMPLING STATION

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

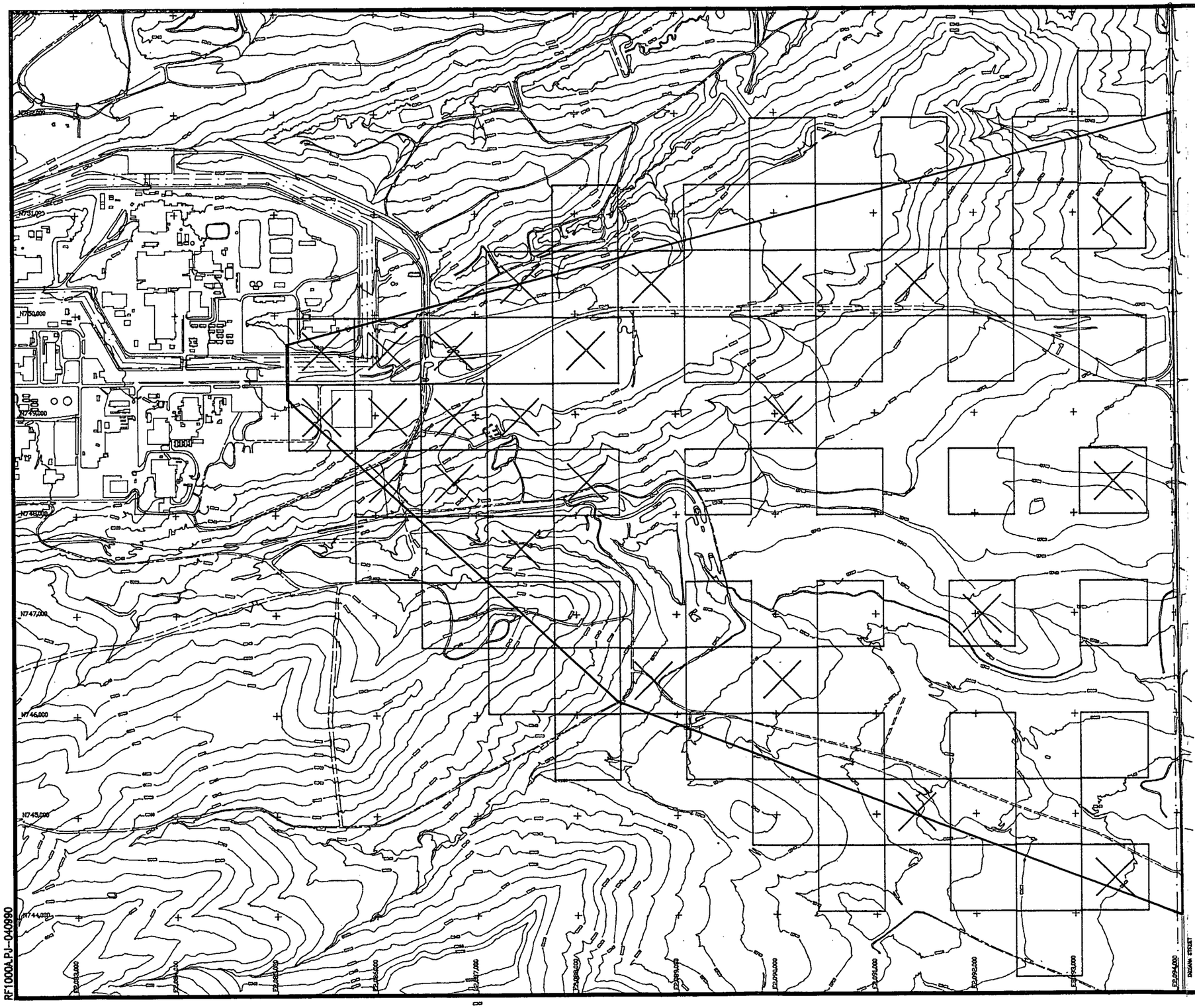
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-11

SURFACE WATER AND SEDIMENT MONITORING STATIONS

April 1990

RF600S.PJ-032690



EXPLANATION

ESTIMATED MAXIMUM EXTENT OF SURFICIAL SOILS CONTAINING TWO dpm/g ACTIVITY BY CDH PROTOCOL

10 ACRE SAMPLING PLOT LOCATIONS

SOIL PROFILE SAMPLING LOCATIONS

N

1" = 1000'

0' 500' 1000'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

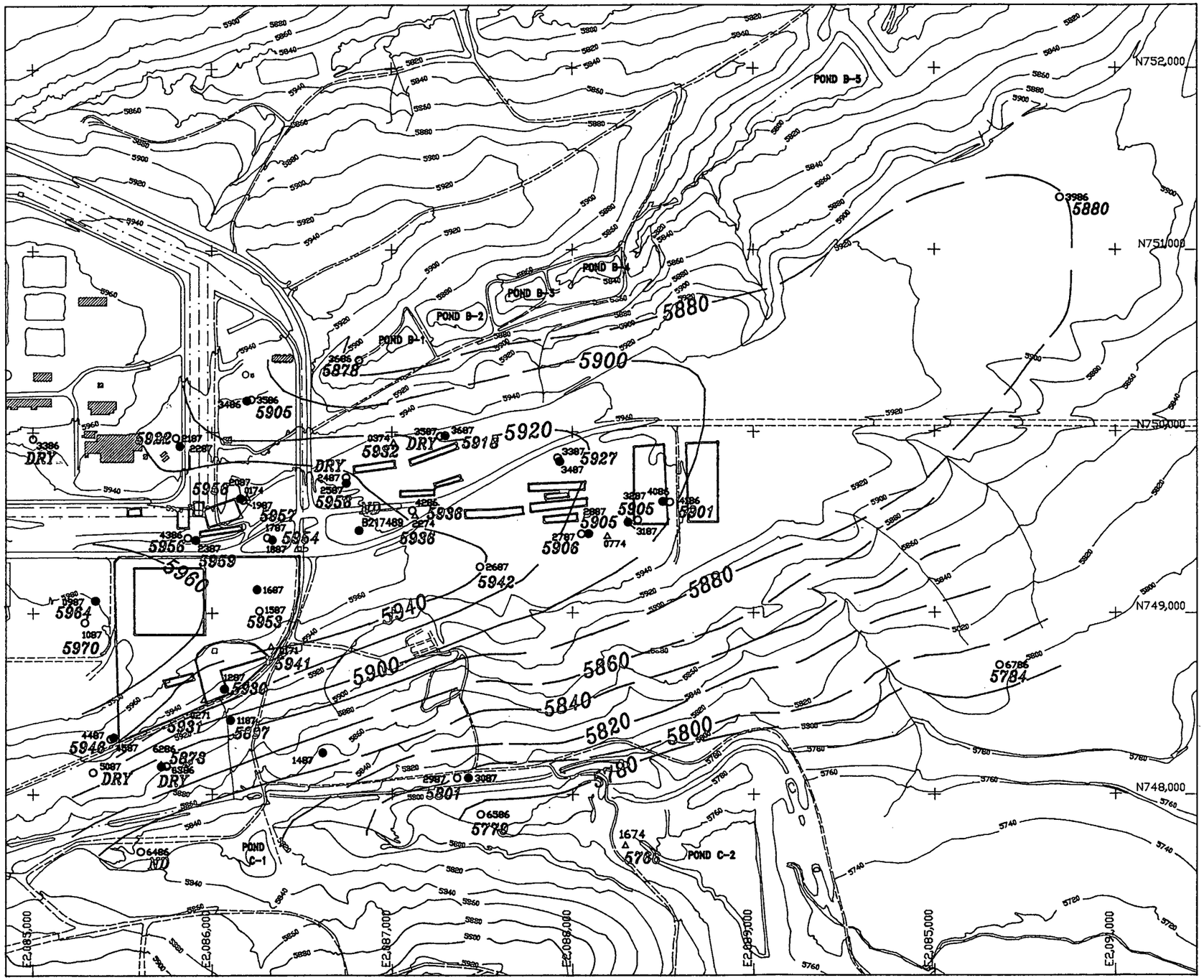
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 5-5

PROPOSED
SURFICIAL SOIL SAMPLING LOCATIONS

April 1990

RF1000A.PJ-040990



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU)

5798 — POTENTIOMETRIC SURFACE ELEVATION (feet above mean sea level)

ALL DATA BASED ON MEASUREMENTS MADE APRIL 4–8, 1988 INCLUSIVE

5860 — LINE OF EQUAL POTENTIOMETRIC SURFACE ELEVATION (feet above mean sea level)—DASHED WHERE APPROXIMATELY LOCATED

ND — NO DATA

B217489 ● BEDROCK MONITOR WELL

B213789 ○ ALLUVIAL MONITOR WELL

0382 △ PRE-1986 MONITOR WELL

N

Scale: 1" = 600'

0' 300' 600'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

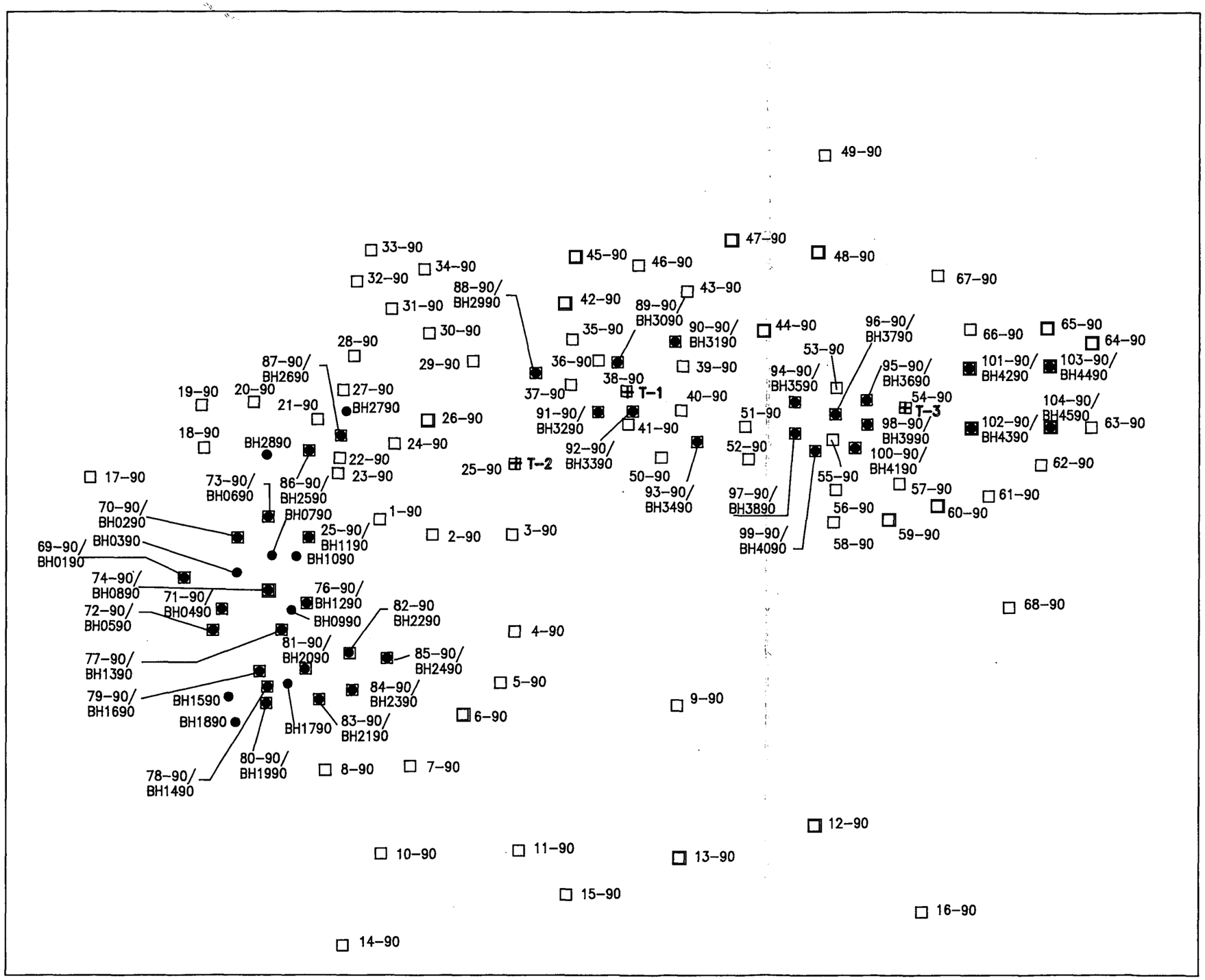
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 2-5

POTENTIOMETRIC SURFACE OF UNCONFINED GROUND-WATER FLOW SYSTEM

April 1990

RF600R.PJ-032690



□ 77-90	PROPOSED PLUME CHARACTERIZATION ALLUVIAL MONITOR WELL
● BH1590	PROPOSED SOURCE CHARACTERIZATION BOREHOLE
■ 18-90/ BH2990	PROPOSED SOURCE CHARACTERIZATION ALLUVIAL MONITOR WELL AND BOREHOLE
+ T-1	PROPOSED HYDRAULIC TEST LOCATION

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

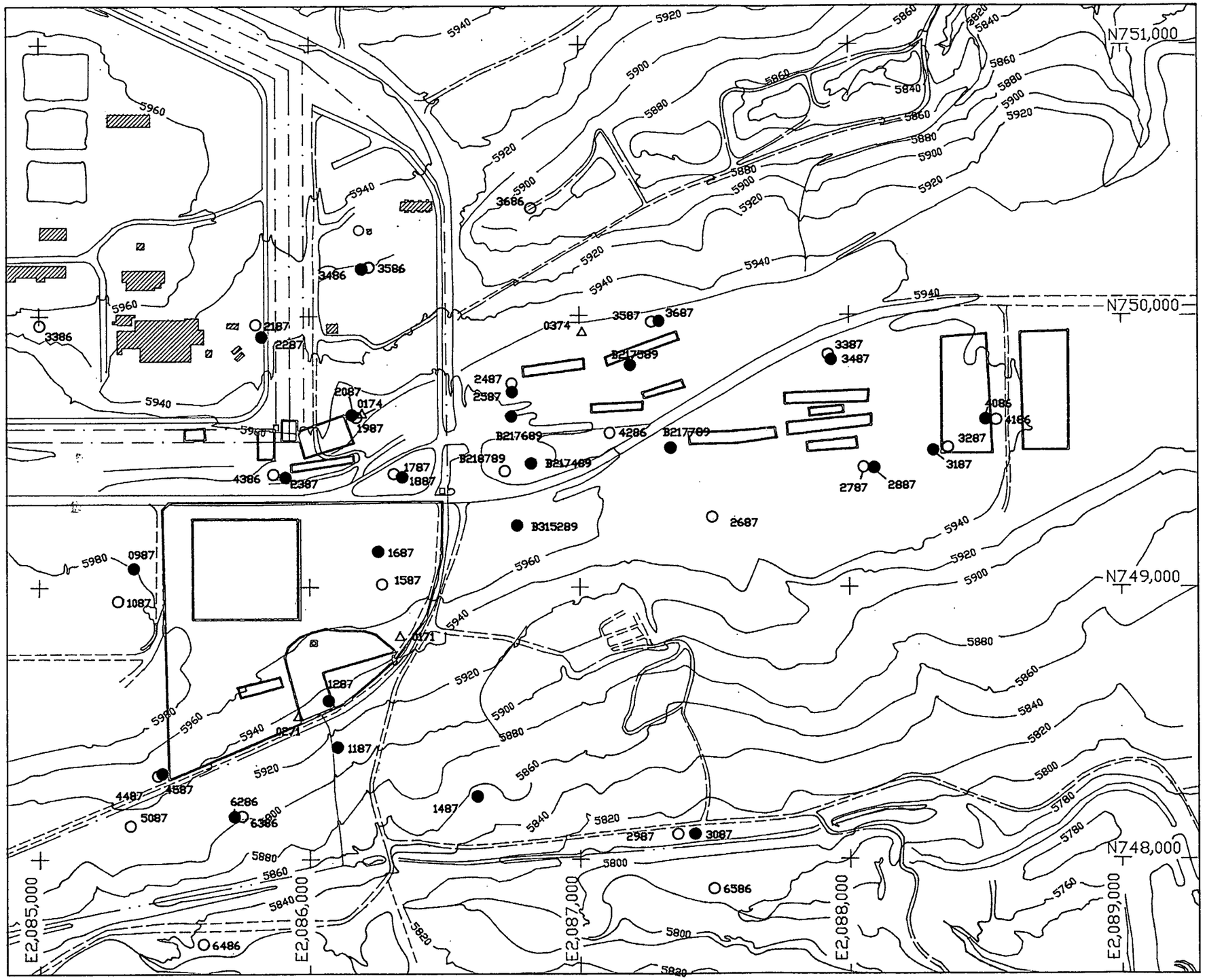
OPERABLE UNIT NO. 2
RI/FS WORK PLAN

FIGURE 5-1

PHASE II REMEDIAL INVESTIGATION
PROPOSED MONITOR WELL AND
BOREHOLE LOCATIONS

April 1990

RF400B.PJ-040990



EXPLANATION

SOLID WASTE MANAGEMENT UNIT (SWMU) AND SWMU DESIGNATION

B217489	●	BEDROCK MONITOR WELL
B213789	○	ALLUVIAL MONITOR WELL
0392	△	PRE-1986 MONITOR WELL

N

Scale: 1" = 400'

0' 200' 400'

CONTOUR INTERVAL = 20'

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

OPERABLE UNIT NO. 2
RI/FS WORK PLAN

PHASE II REMEDIAL INVESTIGATION
MONITOR WELL LOCATIONS

April 1990

RF400C.PJ-032890