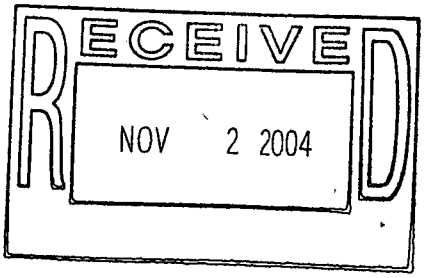
QUARTERLY STATUS REPORT

ROCKY FLATS CLEANUP AGREEMENT IMPLEMENTATION

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

FOURTH QUARTER FISCAL YEAR 2004



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1.0 Introduction

Pursuant to paragraphs 122 and 263 of the Rocky Flats Cleanup Agreement (RFCA or Agreement), this quarterly status report presents the progress toward implementation of activities covered under the Agreement. The RFCA is a legally binding agreement between the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE) to accomplish required cleanup of radionuclide and hazardous substance contamination at and from the Rocky Flats Environmental Technology Site (RFETS). For the purposes of this report, the term, the Site, refers to both DOE and the Kaiser-Hill Company, L.L.C. (Kaiser-Hill).

This report describes activities that occurred from July 2004 through September 2004 (referred to as the fourth quarter of fiscal year [FY] 04). The sections of this report are organized into the following topics: (1) Introduction; (2) Site-wide Activities Implementing RFCA and Supporting RFETS Closure; (3) RFETS Closure Projects; (4) Water Management; and (5) List of Approved Decision Documents.

2.0 Site-wide Activities Implementing RFCA and Supporting RFETS Closure

2.1 Integrated Monitoring Plan Update

During the fourth quarter of FY04, the Integrated Monitoring Plan (IMP) Working Group focused on development of monitoring systems that would be required to perform long-term monitoring of RFETS. To accomplish this transition in an efficient manner, systems that will remain after Kaiser-Hill completes its work are being identified. Also, data quality objectives (DQOs) are being revised to better reflect the appropriate use of the data, and text discussions are being revised to reflect the changes that will take place during FY05.

A number of changes are being planned. For surface water and air monitoring, the IMP will indicate that most of the existing systems will continue in place until late FY05 or early FY06, at which time the phased-out systems will be removed in conjunction with final RFETS land reconfiguration. The exact numbers of monitors that will remain and their exact locations have yet to be determined. Groundwater monitoring systems will be removed throughout the year, with the goal of achieving the interim long-term monitoring configuration at the time Kaiser-Hill has completed the accelerated actions.

The most significant change in the groundwater monitoring approach is to classify the wells in terms of their functional locations with respect to the plume pathways and impacts to surface water rather than in terms of specific functions for the use of data from the well. This approach causes considerable rewriting of the groundwater section of the IMP, restatement of many of the DQOs, and revamping of many maps. The result is a general clarification of how the groundwater data will be used, simplification of

discussions of the groundwater monitoring network, and better focus on long-term monitoring requirements and commitments.

3.0 RFETS Closure Projects

RFETS closure activities conducted during the fourth quarter of FY04 included: (1) Industrial Area Operable Unit, Building (B) 771; (2) Industrial Area Operable Unit, B776/777; (3) Industrial Area Operable Unit, B371/374; (4) Industrial Area Operable Unit, B707; and (5) Remediation, Industrial & Site Services Project (RISS).

3.1 Industrial Area Operable Unit, B771 Closure Project

The B771 Closure Project Decommissioning Operations Plan (DOP) was approved by CDPHE on January 11, 1999. As of September 30, 2004, seven modifications to the DOP have been approved. During the fourth quarter of FY04, the B771 Closure Project Team conducted the following activities:

1. Completed demolition of Buildings 770, 728, 775, 715 and 716.
2. Completed final survey and placement of protective fill in B771.
3. Initiated demolition of B771. As of September 30, 2004, approximately 65% of demolition activities are complete.
4. Completed backfill and topsoil placement in the former B774 area.

Activities planned for the first quarter of FY05 include completion of demolition, backfill, site restoration and demobilization.

3.2 Industrial Area Operable Unit, B776/777 Closure Project

The B776/777 Closure Project DOP was approved by CDPHE on November 5, 1999. As of September 30, 2004, ten minor modifications and one major modification to the DOP have been approved. The Demolition Plan was a major modification; it was approved on July 1, 2003. During the fourth quarter of FY04, the B776/777 Closure Project Team conducted the following activities:

1. Completed decontamination, final surveys and encapsulation in Areas I, II and III (north, east and central portions of B777).
2. Initiated decontamination of Area V (center portion of B776).
3. Completed the removal of highly contaminated walls and floors from the Size Reduction Vault.
4. Completed asbestos abatement of the Main filter plenum (except filters).
5. Completed the demolition of B701 and B710.
6. Initiated demolition of the B730 under-ground storage tank north of B776.

There are a total of 84 work sets in the B776/777 Project; 80 sets have been completed to date.

Activities planned for the first quarter of FY05 include:

1. Complete decontamination and encapsulation of the second floor.
2. Complete remaining asbestos abatement in B776/777.
3. Complete decontamination of Areas IV, V, and VI.
4. Perform final surveys in Areas IV and V.
5. Encapsulate area V.

3.3 Industrial Area Operable Unit, B371/374 Closure Project

The B371/374 Closure Project DOP was approved by CDPHE on March 29, 2001. As of September 30, 2004, four field modifications to the DOP have been approved. During the fourth quarter of FY04, the B371/374 Closure Project Team conducted the following activities:

1. Continued dismantlement activities in the B371 canyons. To date 11 of 12 of the highly contaminated rooms have been dismantled and stabilized. Dry decontamination is complete in four canyons and underway in 5 more canyons.
2. Continued dismantlement in the Central Storage Vault. To date, both stacker/retriever vehicles and 480 of 1,428 storage racks have been disassembled and packaged.
3. Removed 19 of 24 of the largest tanks from B374 through openings in the roof and south side. The largest three of these tanks weigh 41,000 pounds each and are 18 feet in diameter. All are being shipped whole as low-level waste to Envirocare.
4. The project declared B371 criticality incredible and B374 operationally clean.
5. Completed six sets (17, 22, 29, 41, 50, and 58).

There are a total of 45 dismantlement work sets in the B371/374 Project; 38 have been completed to date. The B371/374 Closure Project Team has removed 420 of 428 glovebox equivalents and 338 of 375 tanks.

Activities planned for the first quarter of FY05 include the continued strip-out of the seven remaining sets. Structural decontamination and trades dismantlement activities will continue with a goal of completing the final survey of B374 in preparation for January 2005 demolition.

3.4 Industrial Area Operable Unit, B707 Closure Project

The B707 Closure Project DOP was approved by CDPHE on January 18, 2001. As of September 30, 2004, two minor modifications to the DOP have been approved. Activities conducted during the fourth quarter of FY04 include the completion of the following sets:

1. Set K-4 Stripout, decontamination and removal of the X-Y Retriever.
2. Second Floor Set 9: Removal of contaminated components associated with Dry Air System #2.

3. Second Floor Set 10: Removal of contaminated components associated with Dry Air System #3.
4. Second Floor Set 18: Utility Control Room and removal of electrical components < 8 feet.
5. Second Floor Set 20: Removal of contaminated items above 8 feet from floor level.
6. Set T-3: Removal of External Tanks TK11 and TK16.
7. Set U-2: Isolation and Demolition of B718.
8. Set X-2: Isolation and Demolition of the B711/B711A Cooling Tower.
9. Set Y-1: Stripout of electrical and mechanical components from B718.
10. Set Y-6: Stripout of remaining B778 mechanical and electrical components.

There are a total of 99 work sets in the B707 Project; 91 sets have been completed as of September 30, 2004. All 377 gloveboxes have been removed and all asbestos has been removed from B707.

Activities planned for the first quarter of FY05 include the completion of mechanical decontamination, final surveys and initiation of demolition mobilization activities.

3.5 Remediation, Industrial & Site Services Project

RISS activities supporting RFETS closure during the fourth quarter of FY04 include decontamination and decommissioning (D&D) as well as environmental restoration (ER).

3.5.1 Decontamination and Decommissioning

During the fourth quarter of FY04, the following activities were completed:

1. Demolished 35 facilities/structures including Buildings 115, 121, 122, 562, 701, 705, 750, 881, T891C, and 903A/B.
2. Completed the systematic shut down of potable water (except B060) and sanitary system systems.
3. Excavated and removed the fuel tanks at B443 (Steam Plant).
4. Continued the B444 complex decommissioning on schedule.
5. Completed removal of exterior transite on B447.
6. Completed the Pre-Demolition Survey Report for B447 and B451 Plenum.
7. Completed demolition preparations in B448.
8. Completed approximately 98% of the backfilling of B881 utilizing the 980 rubble pile and 371 borrow area.
9. Completed final survey of B883 (G2) Annex area and obtained CDPHE approval of the demolition method.
10. Completed decontamination of B883 (G6) C-side.
11. Completed dismantlement of ERIE press and the decontamination of the LOWERY press pits in B883.
12. Removed all TRU waste from B559.
13. Completed the B559 overhead strip out of several areas including rooms 102 and 103.
14. Completed asbestos abatement in B562; abatement is in process in the cold area of B561.

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15. Initiated pre-demolition survey sampling in B559.
16. Removed 3,382 feet of RFETS steam lines (18,850 feet of 20,150 feet.) with the remainder on buildings or under power lines.
17. Completed the installation of portable comfort stations and showers.
18. Removed approximately 38% of all RFETS asphalt.

The FY04 RISS project scope identified a total of 50 facilities/structures for demolition. Actual demolitions for FY04 totaled 162 facilities/structures. While all planned FY04 Aqueous Waste Treatment Systems (AWTS) shipments were completed by the end of the third quarter of FY04, an additional 46,000 gallons were shipped during the fourth quarter of FY04.

Demolition of Buildings 447, 448, and 451 is planned to commence during the first quarter of FY05.

3.5.2 Environmental Restoration

ER activities implementing RFCA and supporting closure during the fourth quarter of FY04 included: (1) Buffer Zone (BZ) Operable Unit (OU), Group 900-11 (Inner and Outer Lip Area); (2) Industrial Area (IA) OU Individual Hazardous Substance Site (IHSS) Group 400-1; (3) IA OU, IHSS Group 400-2; (4) IA OU, IHSS Group 400-4; (5) IA OU, IHSS Group 400-6; (6) IHSS Group 500-1; (7) IA OU IHSS Group 700-1; (8) IA OU IHSS Group 700-5; (9) IA OU IHSS Group 700-6; (10) IA OU IHSS Group 700-7; (11) IA OU IHSS Group 700-10; (12) IHSS Group 000-5 (Present Landfill) and IHSS Group SW-2 (Original Landfill); and (13) Status of ER Documents.

3.5.2.1 Buffer Zone Operable Unit, Group 900-11 (Inner and Outer Lip Area)

The 903 Lip Area project involved the excavation and off-site disposal of wind-blown contaminated soil. Excavation started in the 903 Lip area on December 10, 2003 and was completed on September 11, 2004.

- The following work activities were completed during the project:
- Excavated 36.5 acres in the 903 Lip area.
- Excavated 49,800 cubic yards (65,800 tons) of soil for disposal.
- Filled 3,452 intermodals with soil and shipped off-site for disposal.
- Filled 588 DRT bags with soil for off-site disposal.
- IHSS 140 was successfully remediated for radiological contamination and no nickel carbonyl was found in the area.

The Final Interim Measure/Interim Remedial Action for IHSS Group 900-11 903 Pad Lip Area was approved by EPA on September 20, 2004.

3.5.2.2 Industrial Area Operable Unit, IHSS Group 400-1 (Under Building Contamination [UBC] 439 – Radiological Survey)

IHSS Group 400-1 contains UBC 439, which is approximately 100 by 50 feet. Building 439 is a sheet metal structure built on an at-grade concrete slab. The structure was a maintenance building, and was later used for property utilization and disposal operations. Building 439 was used to receive, process, and ship surplus equipment and materials released by Site custodians, and housed small portable counters to monitor alpha, beta, and gamma radiation. Sources were controlled through Site accountability procedures. Smear samples collected throughout RFETS were brought to B439 for counting. The building is currently being used as the break area for B440 operations personnel. There are no process lines or foundation drains under the building. There is one floor drain that is tied to the sanitary sewer system. The sewer line exits the building near the northwestern corner.

Accelerated action soil samples were analyzed for radionuclides, metals, and volatile organic compounds (VOCs) from five locations within the footprint of B439. The floor of B439 was cored and samples were collected from beneath the building slab. All analytical results were less than the wildlife refuge worker action levels (WRW ALs); therefore, remediation was not required. IHSS Group 400-1 was approved by CDPHE as a no further accelerated action (NFAA) site on August 23, 2004. The building is waiting for demolition.

3.5.2.3 Industrial Area Operable Unit, IHSS Group 400-2 (UBC 440 – Modification Center)

IHSS Group 400-2 consists of UBC 440, the former Modification Center. Building 440 is one of the newer facilities at RFETS and is used to stage waste drums and standard waste boxes for packaging into transuranic packaging transporter containers for shipment to off-site disposal facilities. Floor drains connected to the sanitary sewer are present in restroom/shower areas and a janitorial closet. No floor drains or sumps are present within the operations area of the building. Additionally, concrete berms constructed on the floor surface are placed throughout the building at garage doors and entry/exit areas as secondary containment in the event of a spill or leak from temporarily stored containers.

Accelerated action characterization sampling was conducted in August 2004 and consisted of 20 locations (12 statistical locations and 8 biased locations). Analytical results indicate arsenic is present in one subsurface sample (0.5 to 2.5 feet deep) collected at IHSS Group 400-2 at a concentration greater than the WRW AL. No other contaminants were detected at levels greater than the WRW ALs. IHSS Group 400-2 was approved by CDPHE as a NFAA site on September 27, 2004.

3.5.2.4 Industrial Area Operable Unit, IHSS Group 400-4 (Potential Area of Concern [PAC] 400-803 – Miscellaneous Dumping, Building 460 Storm Drain and PAC 400-804 – Road North of Building 460)

IHSS Group 400-4 is comprised of two PACs. PAC 400-803 consisted of a reported release to the storm drain west of B446. A roofing contractor at B444 had reportedly dumped miscellaneous materials into the storm drain, which consisted of silver paint, aluminum paint, and possibly other materials including oil. The material flowed along a historic open ditch south of Cottonwood Avenue to a point south of the former fuel oil storage tanks, passed beneath the street, and ran northeastward to the extent of Seventh Avenue. PAC 400-804 consisted of a reported release of four ingots, which fell from a truck, damaging the road north of B446. After removal of the ingots, the area was dry-vacuumed. Photographs were taken of the release area.

Accelerated action sampling activities began in May 2004. Based on the historical photographs, two surface soil sampling locations targeted the ingot release to the road north of B446, and were analyzed for radionuclides. Analytical results for these two sampling locations showed low concentrations of radionuclides above the background means plus two standard deviations, but not above WRW ALs. Six sampling locations were used to characterize the reported release to the storm drain west of B446, and were analyzed for metals, radionuclides, and semi-volatile organic compounds (SVOCs). One location was placed within the drain to target the point-of-entry to the drain system. The other five locations were placed along the ditch, associated outfalls, and culverts based on RFETS conditions at the time of sample collection. Benzo(a)pyrene was detected above the WRW AL at one surface soil sampling location, but was less than three times the AL. Benzo(a)pyrene and dibenz(a,h)anthracene were detected above the WRW ALs at one subsurface sampling location. All other constituents were well below the associated WRW ALs. No action was taken to remove the soil with the elevated benzo(a)pyrene and dibenz(a,h)anthracene concentrations because these contaminants of concern (COCs) were not located in an area prone to landslides or erosion. Additionally, these COCs were not detected in surface water or groundwater monitoring stations near IHSS Group 400-4. These exceedances appear to be due to asphaltic materials which have been mixed into the soils throughout the area. IHSS Group 400-4 was approved by CDPHE as an NFAA site on August 23, 2004.

3.5.2.5 Industrial Area Operable Unit, IHSS Group 400-6 (IHSS 400-157.2 – Radioactive Site South Area)

The Radioactive Site South Area (IHSS 157.2) includes the paved and unpaved areas surrounding B444, which is located within the IA on the south side of Cottonwood Avenue. Other structures in the vicinity include Buildings 445, 447, 448, 450, 451, and 439. Materials handled at B444, a non-nuclear manufacturing facility, included beryllium and depleted uranium. Portions of the area surrounding B444 were used for metal storage, ingot storage, and uranium machine tool storage. Solvents, lubricants, and metals associated with B444 operations may have been released in the area.

Accelerated action sampling at IHSS Group 400-6 occurred principally during May, June, and July 2004. During this time the interior of B444 was being demolished. Soil samples were analyzed for radionuclides, metals, VOCs, SVOCs, polychlorinated biphenyls (PCBs), pesticides, and cyanide. Five accelerated action soil sampling results for the area exceeded WRW AL. These included three detections of arsenic, and one detection each of benzo(a)pyrene and dibenz(a,h)anthracene. All of the exceedances were in subsurface soil samples collected from a depth of 0.5 to 2.5 feet, and all were at isolated locations. IHSS Group 400-6 was approved by CDPHE as an NFAA site on September 29, 2004.

3.5.2.6 Industrial Area Operable Unit, IHSS Group 500-1 (IHSS 300-186 – Valve Vaults 11, 12, 13; IHSS 500-197 – Scrap Metal Storage Site; and IHSS 500-117.1 – North Site Chemical Storage)

IHSS Group 500-1 consists of three IHSSs (300-186, 500-117.1 and 500-197). IHSS 300-186 consists of three valve vaults (11, 12, and 13) located in-line along the process waste line south of B374 and west of B552. The process waste lines are double-contained and equipped with leak-detection sensors. However, several incidents have occurred in one or more of the valve vaults resulting in the release of process waste to the environment. IHSS 500-117.1 consists of an area northeast of B551 that was used as a general warehouse storage yard prior to September 1959 until the early 1970s. Monitoring of the aluminum scrap pile indicated the presence of radioactive materials, including uranium. Surface soil samples collected during the OU13 Phase I Resource Conservation and Recovery Act Facility Investigation/Remedial Investigation indicated that plutonium-239/240, copper, mercury, lead, selenium, silver and zinc were present above background levels. Various VOCs were also detected in soil gas samples. IHSS 500-197 consists of trenches used to bury scrap metal, mostly associated with the original plant construction program, during the late 1950s and/or early 1960s. In addition, there is a slight possibility that transformers containing PCBs were disposed of at this site. In 1981, excavation for the construction of the Perimeter Security Zone unearthed the scrap metal burial sites. Site personnel remediated the site by excavating the trenches and removing all of the buried material.

The accelerated action characterization, conducted during October and November, 2003, and March through July, 2004, included 171 sampling locations and 454 samples. Samples were analyzed for radionuclides, metals, VOCs, PCBs, and dioxin and furan congeners. All contaminant concentrations were less than the WRW ALs, except for one subsurface arsenic concentration. The elevated concentration was 25.9 milligrams per kilogram (mg/kg); the WRW AL for arsenic is 22.2 mg/kg. IHSS Group 500-1 was approved by CDPHE as a NFAA site on September 29, 2004.

3.5.2.7 Industrial Area Operable Unit IHSS Group 700-1 (PAC 700-1115 – Identification of Diesel Fuel in Subsurface Soil)

PAC 700-1115, located on the east side of B708, was identified as a subsurface diesel fuel spill of unknown origin. During excavation activities near the northeastern corner of B708, diesel fuel was observed in the soil within the excavation trench. Samples were

collected from the trench at that time, and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), as well as total recoverable petroleum hydrocarbons (TRPH). Work on the excavation activities continued after it was determined that BTEX and TRPH were below the applicable limits.

Accelerated sampling activities began in July 2004. Sampling analysis included only VOCs, targeting the diesel fuel. Samples were collected from five locations, at the following intervals: surface from 0.0 to 0.5 feet below ground surface (bgs); and subsurface from 0.5 to 2.5 feet bgs, and 2.5 to 4.5 feet bgs. No VOCs were detected in any of the surface or subsurface samples collected from the five sampling locations. IHSS Group 700-1 was approved by CDPHE as a NFAA site on September 14, 2004.

3.5.2.8 Industrial Area Operable Unit IHSS Group 700-5 (UBC 770 – Waste Storage Facility)

IHSS Group 700-5 is located north of B771 and B774. The IHSS Group encompasses approximately 3,168 square feet. Building 770 is a metal, prefabricated, modular building constructed in 1965 on a concrete foundation. The building is currently used to store tools, materials, and supplies for B771 decommissioning operations. Historically, B770 was used for equipment storage and also as a facility for equipment assembly prior to equipment installation inside other RFETS buildings. Building 770 was also used to store radioactive waste. Several releases from waste containers occurred, which resulted in contamination inside and outside the building. No characterization of soil beneath the B770 foundation slab had been conducted prior to the accelerated action characterization.

The accelerated action characterization, conducted during May and June, 2004, included eight sampling locations under and around the B770 slab. Samples were analyzed for radionuclides, metals, VOCs, and PCBs. All contaminant concentrations were less than the WRW ALs, except for the surface and subsurface Aroclor 1254 concentrations at one sampling location. The surface soil concentration is 43,000 micrograms per kilogram (ug/kg), and the subsurface soil concentration was 20,000 ug/kg. The WRW AL for Aroclor 1254 is 12,400 ug/kg. This location will be remediated under the IHSS Group 700-11 project. After remediation is conducted, confirmation sampling will be conducted in accordance with the IASAP. IHSS Group 700-5 was approved by CDPHE as a NFAA site on September 7, 2004.

3.5.2.9 Industrial Area Operable Unit IHSS Group 700-6 (IHSS 700-137 – Buildings 712/713 Cooling Tower Blowdown and IHSS 700-139.1(S) – Caustic/Acid Spills Hydroxide Tank Area)

IHSS 700-6, which includes IHSS 700-137, Buildings 712/713 Cooling Tower Blowdown, and IHSS 700-139.1 (S) Caustic/Acid Spills Hydroxide Tank Area, is located in the IA.

IHSS 700-137 is associated with two cooling towers: B712 and B713. The two cooling towers serviced B776/777, and were situated next to each other in an area located

between Buildings 774 and 777. Building 712 was constructed in 1962 to service B776/777 and B713 was constructed in 1966 to provide additional capacity. Underground laundry and process waste lines were present in the area where B713 was constructed. Original Process Waste Lines (OPWL) associated with IHSS 137 have been left in place and grouted (P-28, P-29, P-34.1, P-36, P-37, P-41, P-61) or removed (all others). Buildings 702 and 703 were pump houses for B712 and B713, respectively. The cooling tower sump is located between B712 and B702.

Accelerated action characterization sampling was started in April 2003. Based on site histories and historical soil sampling date, radionuclides, metals, SVOCs, and VOCs were identified as COCs. Contaminant concentrations in soil greater than WRW ALs at IHSS Group 700-6 were limited to three analytes (arsenic, benzo(a)pyrene, and chromium) and nine sampling locations (six in IHSS 700-137 and three in IHSS 700-139.1(S). The arsenic and chromium WRW AL exceedances occurred in soil collected from IHSS 700-137, and the benzo(a)pyrene exceedances occurred in soil collected from IHSS 700-139.1(S).

Based on application of the hotspot methodology and the results of the subsurface soil risk screen (SSRS), small areas of arsenic-contaminated soil at two sampling locations were removed. The excavations were backfilled with RFETS soil. Analytical results of the confirmation sampling of the excavations indicated metal concentrations, including arsenic, were below WRW ALs except at for one location, where the arsenic concentration of 29 mg/kg was slightly greater than the WRW AL of 22.2 mg/kg.

At IHSS Group 700-6, residual contaminant concentrations greater than WRW ALs are limited to three analytes (arsenic, benzo(a)pyrene, and chromium) and soil at six characterization sampling locations and one confirmation sampling location. Arsenic concentrations greater than the WRW AL remain in surface (0 to 0.5 feet bgs) soil, chromium in subsurface (0.5-0.8 feet bgs) soil, and benzo(a)pyrene in surface (0-0.5 feet bgs) and subsurface (0.5-2.5 feet bgs and 8-8.5 feet bgs) soil. Based on application of the hot spot methodology and SSRS, the contaminated soil at these locations does not require further accelerated action. IHSS Group 700-5 was approved by CDPHE as a NFAA site on September 29, 2004.

3.5.2.10 Industrial Area Operable Unit IHSS Group 700-7 (UBC 779 – Main Plutonium Components Production Facility, IHSS 700-138 – B779 Cooling Tower Blowdown, IHSS 150.6 – Radioactive Site South of B779, IHSS 150.8 Radioactive Site Northeast of B779, PAC 700-1105 – Transformer Leak – 779-1/779-2 and portions of IHSS 121 – Tanks 19, 20, and 38)

IHSS Group 700-7 consists of one UBC Site, several IHSSs, and one PAC, including the following:

- UBC 779, Main Plutonium Components Production Facility;
- IHSSs 700-138, B779 Cooling Tower Blowdown;
- IHSS 700-149.2, Effluent Line, and Portion of IHSS 000-121, OPWL;
- IHSS 700-150.6, Radioactive Site South of B779;
- IHSS 700-150.8, Radioactive Site Northeast of B779;

- Portion of IHSS 000-101, Solar Evaporation Pond; and
- PAC 700-1105, Transformer Leak – 779-1/779-2.

Activities were conducted between September 30, 2003 and August 18, 2004, and included the following:

- Characterization of the 779 UBC Site, IHSSs within the Group, and PAC 700-1105, including soil adjacent to and below the OPWL;
- Removal of the B779 slab and most of the other building structural features, including footer walls (except one), some of the structural upgrades, the top 4 feet of the basement walls, waste trenches and pits, other building slabs, and pavement east and south of the B779 slab;
- Removal of water and waste lines, including OPWL and sanitary lines under the B779 slab, the B782 plenum drain lines, and the B-779 foundation drain line;
- Removal of two diesel underground storage tanks;
- Removal of three concrete pads, two of which held transformers containing oils with PCBs, and surrounding soil; and
- Removal of other soil in conformance with RFCA requirements, including soil from under the B779 contamination area.

Building components remaining below ground surface include some B779 structural upgrade foundations (intact or lower portions), caissons for the structural upgrade foundations and elevator pits, the lower portion of the B779 basement, the footer wall supporting the basement staircase, the B779 sub-basement, the footer wall on the western side of the B779 slab, and the B782 tunnel/utility corridor and pit. The B779 basement and sub-basement and the B782 tunnel and pit were filled with flowable-fill concrete to prevent area subsidence in the future, prevent groundwater intrusion, and immobilize any fixed contamination in the B779 sub-basement pits.

OPWL outside UBC 779 (P-36, P-37, P-38 and P-42) are also remaining, as well as sections of sanitary lines, water lines, and storm drains. The ends of OPWL were exposed, and were disrupted, drained and grouted under the IHSS Group 000-2 project. All remaining sanitary and cooling water lines in IHSS Group 700-7 have been disrupted, drained and grouted to prevent their operation and the associated collection and movement of groundwater from the IHSS Group. Storm drains within the IHSS Group were not altered, and will be addressed as part of Sitewide storm drain removal.

Elevated plutonium-239/240 and americium-241 activities and PCB concentrations resulted in soil removal and subsequent confirmation sampling. One of the elevated arsenic concentrations was removed during excavation of OPWL. The other elevated arsenic concentration and one of the elevated plutonium activities did not result in soil removal based on the SSRS. Confirmation sampling results indicate that plutonium activities exceed the WRW AL at seven subsurface locations. However, activities are less than 1 nanocurie per gram at a depth greater than 3 feet from the ground surface. Based on RFCA and the SSRS, additional soil removal at these locations is not required. At another location, the plutonium activity also exceeded the WRW AL; however, an

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additional foot of soil was subsequently removed, and the result is no longer representative. Results of the data quality assessment confirmed that the data collected and used were adequate for decision making.

Clean fill was brought to the project site and used to backfill excavations and smooth out the surface to prevent any large-scale ponding of precipitation. Additional fill will be brought in to bring the area to final grade as part of the Sitewide land reconfiguration, which will occur after the IHSS Group 700-3 accelerated action project is completed (by the end of the third quarter of FY05). IHSS Group 700-7 was approved by CDPHE as a NFAA Site on October 4, 2004.

3.5.2.11 Industrial Area Operable Unit IHSS Group 700-10 (PAC 700-1101 Laundry Tank Overflow – Building 732)

IHSS Group 700-10 (PAC 700-1101) consists of B732. Building 732 consists of two parts, including a reinforced-concrete stairwell approximately 7 by 17.6 feet in area and 8 feet high. The stairwell descends to the south and then opens to the east into an underground, reinforced-concrete room 14 by 27.7 feet in extent. In the past under normal operations, laundry water and water from floor drains in B778 were pumped to B732, filtered, and then passed on to Valve Vault 9, eventually reaching B374 for treatment. Water collected in the B-32 sump was pumped back to a secondary containment sump in B778. Within the room are a 1,000-gallon fiberglass holding tank (T-4), two pumps, two banks of particulate filters, and a sump in the southeastern corner. At the time of construction, the walls of B732 were waterproofed on the inside and outside. In the early 1990s additional sealant was applied to all exterior-wall, ceiling, and floor joints. In June 1979 laundry wastewater in Tank T-4 overflowed onto the room floor because of malfunctioning pumps that normally send the wastewater through the filters.

Soil samples were analyzed for radionuclides and VOCs from four sampling locations around the down gradient sides (south and east) outside of the underground part of B732. A sample of incidental water was collected from the sump inside the building and analyzed for radionuclides, metals, and VOCs. None of the soil analyses exceeded WRW ALs. None of the water analyses exceeded Tier II ALs. Remediation was not required. IHSS Group 700-10 was approved by CDPHE as a NFAA site on September 21, 2004. The building is waiting for demolition.

3.5.2.12 Group 000-5 (Present Landfill) and Group SW-2 (Original Landfill)

Group 000-5 (Present Landfill)
This project involves completion of the Interim Measure/Interim Remedial Action (IM/IRA) decision document and the design and construction of a Resource Conservation and Recovery Act compliant cover at the Present Landfill. The IM/IRA underwent formal public review during the fourth quarter of FY02 and has been revised, based upon consideration of comments and continuing RFCA Party consultation. A modified, proposed final IM/IRA was released for an additional 45-day public comment period

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starting on September 23, 2003. Comments on the revised IM/IRA have been received and incorporated, and a final IM/IRA was approved on August 23, 2004. Cover construction activities are underway with a anticipated completion in second quarter of FY05.

Group SW-2 (Original Landfill)
The pre-decisional draft IM/IRA was available for agency and informal stakeholder review in the second quarter of FY04. A revised IM/IRA is anticipated to be available for formal public comment during the first quarter of FY05. Field activities related to the design of the proposed action began in the third quarter of FY04. Construction of the proposed action is scheduled for FY05 after the approval of the IM/IRA.

3.5.2.13 Status of ER Documents

Table 1 lists the status of ER Documents from July 1, 2004 through September 30, 2004.

Table 1. Status of ER Documents

IHSS Groups	Status	Date to Agencies	Approval Date
Closeout Reports			
700-6 (IHSS 700-137 – Buildings 712/713 Cooling Tower Blowdown and IHSS 700-139.1(S) – Caustic/Acid Spills Hydroxide Tank Area	Received Approval	9/13/04	9/29/04
700-7 (UBC 779 – Main Plutonium Components Production Facility, IHSS 700-138 – Building 779 Cooling Tower Blowdown, IHSS 150.6 – Radioactive Site South of Building 779, IHSS 150.8 Radioactive Site Northeast of Building 779, PAC 700-1105 – Transformer Leak – 779-1/779-2 and portions of IHSS 121 – Tanks 19, 20, and 38)	Received Approval	6/16/04	10/4/04
Data Summary Reports			
400-1 (UBC 439 – Radiological Survey)	Received Approval	8/4/04	8/23/04
400-2 (UCB 440 – Modification Center)	Received Approval	9/22/04	9/27/04
400-4 (PAC 400-803 – Miscellaneous Dumping, Building 460 Storm Drain and PAC 400-804 – Road North of Building 460)	Received Approval	8/10/04	8/23/04
400-6 (IHSS 400-157.2 – Radioactive Site South Area)	Received Approval	9/22/04	9/29/04
500-1 (IHSS 300-186 – Valve Vaults 11, 12, 13; IHSS 500-197 – Scrap Metal Storage Site; and IHSS 500-117.1 – North Site Chemical Storage)	Received Approval	9/16/04	9/29/04
700-1 (PAC 700-1115 – Identification of Diesel Fuel in Subsurface Soil)	Received Approval	8/12/04	9/14/04
700-5 (UBC 770 – Waste Storage Facility)	Received Approval	8/5/04	9/7/04

Table 1. Status of ER Documents (continued)

IHSS Groups	Status	Date to Agencies	Approval Date

700-10 (PAC 700-1101 Laundry Tank Overflow – Building 732)	Received Approval	9/2/04	9/21/04
NFAA Summaries			
IHSS 143.	Received Approval	6/2/04	9/7/04
Sampling and Analysis Plan Addenda			
None			
ER RFCA Standard Operating Protocol Notification			
04-04 – 700-3 (UBC 776/777)	Received Approval	6/295/04	7/9/04
04-10 – 700-11 (Bowman's Pond and Steam Condensate Tanks)	Received Approval	6/14/04	7/9/04
04-11 – NE-1 (B-Ponds)	Submitted to agency for review	9/22/04	
04-20 – 600-4 (Radioactive Site B444 Parking Lot)	Received Approval	9/1/04	9/22/04
OTHER			
Present Landfill IM/IRA	Received Approval	8/04	9/23/04
IHSS Group 900-11 903 Lip Area IM/IRA	Received Approval	8/26/04	9/20/04
Comprehensive Risk Assessment Work Plan and Methodology	Received Approval	8/31/04	9/28/04
IA/BZSAP Modification 1	Received Approval	6/10/04	8/25/04
ER RSOP Modification 2	Received Approval	6/10/04	8/24/04

4.0 Water Management

Water management activities during the fourth quarter of FY04 included: (1) Watershed Improvements; (2) Surface Water Management; (3) Surface Water Monitoring; and (4) Groundwater Monitoring.

4.1 Watershed Improvements

Dam maintenance activities completed during the fourth quarter of FY04 included vegetation removal on and around dams. Data for dam crest monument and inclinometer surveys from the third quarter of FY04 was reviewed and a report generated during the fourth quarter of FY04. Data were found to be unremarkable and not indicative of embankment movement. FY04 inspections of all twelve dams were completed by Wright Water Engineers and an inspection report generated. All dams were found to be in good condition.

Storm water pollution prevention practices (silt fences, straw bales, mats, wattles, recontouring patterns, etc.) were implemented for various RFETS demolition projects to minimize storm water runoff, erosion, and sediment transport into the drainage system. In accordance with the Storm Water Pollution Prevention Plan (SWPPP), the annual Comprehensive Site Compliance Evaluation (CSCE) inspections of all RFETS facilities were concluded. The remaining facilities were completed during the fourth quarter of FY04. All inspections were completed by September 30, 2004. The CSCE report will be issued on October 27, 2004 and will be retained as part of the SWPPP (per the RFETS National Pollutant Discharge Elimination System Permit).

Field inspections of storm water culverts and structures were completed for inclusion in the CSCE. As in previous years, the closure activities have resulted in some existing

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structures being removed, and some new culverts installed due to the addition of temporary roads and new facilities. Where appropriate, storm water culverts are being identified for future removal.

4.2 Surface Water Management

During the fourth quarter of FY04, Kaiser-Hill completed the following pond water transfers and discharges totaling 58.85 Million Gallons (MG), an increase of 257% compared to the fourth quarter of FY03 (22.93 MG).

Pond A-3 activity included two outlet-valve direct discharges to Pond A-4 totaling 13.51 MG. The first discharge of 7.85 MG occurred during the period of June 29 through July 14, 2004. The second discharge of 5.66 MG occurred during the period of August 25 through September 2, 2004.

Pond A-4 activity included one outlet-valve direct discharge to North Walnut Creek (NWC) totaling 11.00 MG. This discharge occurred during the period of August 11 through 23, 2004. Water-quality samples were collected and analyzed, water-quality data met all requirements, and all approvals and notifications were performed prior to the discharge. The City of Broomfield opted to impound this Pond A-4 discharge within Great Western Reservoir.

Pond B-5 activity included two outlet-valve direct discharges to South Walnut Creek (SWC) totaling 24.79 MG. The first discharge of 18.32 MG occurred during the period of July 15 through August 3, 2004. The second discharge of 6.47 MG occurred during the period of September 23 through 30, 2004 and additional discharge volume continued into the first quarter of FY05. Water-quality samples were collected and analyzed, water-quality data met all requirements, and all approvals and notifications were performed prior to the discharge. The City of Broomfield opted to impound this Pond B-5 discharge within Great Western Reservoir.

There were no Pond C-2 discharges during the fourth quarter of FY04.

There were Pond A-1, A-2, B-1, B-2, and Landfill Pond transfers during the fourth quarter of FY04 for a total of 23.06 MG. Pond A-1 was pumped to Pond A-2 from September 2 to 8, 2004 for a total of 0.56 MG. Pond A-2 was pumped to Pond A-3 from September 9 to 29, 2004 for a total of 6.49 MG. Pond B-1 was pumped to Pond B-2 from August 10 to 24, 2004 for a total of 0.256 MG. Pond B-2 was pumped to Pond A-2 from August 30 to September 2, 2004 for a total of 0.50 MG. The East Landfill Pond was pumped to Pond A-1 from August 3 to 12, 2004 for a total of 1.25 MG and to Pond A-2 from August 16 to 24, 2004 for a total of 0.50 MG.

Transfers and discharges from the RFETS ponds during the fourth quarter of FY04 are summarized in Table 2.

Table 2. RFETS Pond Water Transfers and Discharges - Fourth Quarter of FY04

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Dates	Pond Activity	Total MG	Mode
6/29 to 7/14	A-3 to A-4	7.85	Outlet-valve direct discharge
7/15 to 8/3	B-5 to SWC	18.32	Outlet-valve direct discharge
8/3 to 8/12	East Landfill to A-1	1.25	Pump transfer
8/10 to 8/24	B-1 to B-2	0.25	Pump transfer
8/11 to 8/23	A-4 to NWC	11.00	Outlet-valve direct discharge
8/16 to 8/24	East Landfill to A-2	0.50	Pump transfer
8/25 to 9/2	A-3 to A-4	5.66	Outlet-valve direct discharge
8/30 to 9/2	B-2 to A-2	0.50	Pump transfer
9/2 to 9/8	A-1 to A-2	0.56	Pump transfer
9/9 to 9/29	A-2 to A-3	6.49	Pump transfer
9/23 to 9/30	B-5 to SWC	6.47	Outlet-valve direct discharge
	Total for Quarter	**58.85 MG**	

4.3 Surface Water Monitoring

During the fourth quarter of FY04, 115 composite samples were collected by the RFCA automated monitoring network and submitted for analysis. This level of sampling activity is 117% of anticipated (98 samples expected) for the current monitoring network and 74% greater than the average (66 samples) for the same period during the prior seven years of RFCA sampling (4Quarter[Q])FY03: 57 samples, 4QFY02: 56 samples, 4QFY01: 76 samples, 4QFY00: 84 samples, 4QFY99: 75 samples, 4QFY98: 47 samples, and 4QFY97: 69 samples). This increased sampling rate is due to a larger network and higher than average flows for the period.

Reportable 30-day average values for plutonium (Pu) were observed POE GS10 for the period from February 20, 2004 through August 4, 2004 using validated data. Reportable 30-day average values for americium (Am) were also observed at Point of Evaluation (POE) GS10 for the periods from February 20 through May 9, May 19 through May 21, and July 27 through August 4, 2004 using validated data. Additional data are being validated. The end of the reportable period will be determined when Kaiser-Hill receives subsequent validated analytical results.

Water flowing through GS10 also passes through the lower B-series ponds (Ponds B-4 and B-5) and South Walnut Creek before leaving RFETS. RFCA Points of Compliance (POCs) GS08 (Pond B-5 outlet) and GS03 (Walnut Creek at Indiana Street) again monitor this water. GS10 analytical results and the reportable 30-day average values were compared with those for pre-discharge samples collected from Pond B-5 prior to the February/March, May, and July/August 2004 B-5 direct discharges and from RFCA POC monitoring stations GS08 and GS03 for those discharges (February 23 – March 22, 2004, May 3 – May 18, 2004, and July 15 – August 3, 2004). Monitoring results from Pond B-5 (all pre-discharge samples), all discharge GS08 composite samples, and all discharge composite samples from POC GS03 met stream standards and were below reporting thresholds for the same period.

Reportable 30-day average values for Pu were observed at POE SW093 for the period from April 11, 2004 through July 23, 2004 using validated data. Reportable 30-day

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average values for Am were also observed for the period from April 23 through May 22, May 29 through July 8, July 13 through July 20, and July 22 through July 23, 2004 using validated data. Additional data are being validated. The end of the reportable period will be determined when Kaiser-Hill receives subsequent validated analytical results.

Water flowing through SW093 also passes through the lower A-series ponds (Ponds A-3 and A-4) and Walnut Creek before leaving RFETS. RFCA POCs GS11 (Pond A-4 outlet) and GS03 (Walnut Creek at Indiana Street) again monitor this water. SW093 analytical results and the reportable 30-day average values were compared with those for pre-discharge samples collected from Pond A-4 prior to the May and August 2004 A-4 direct discharges and from RFCA POC monitoring stations GS11 and GS03 for those discharges (May 17 – May 27 and August 11 – August 23, 2004). Monitoring results from Pond A-4 (all pre-discharge samples), all composite samples from POC GS03, and all composite samples from POC GS11 met stream standards and were below reporting thresholds for the same period.

Reportable 30-day average values for Pu were observed at POE SW027 for the period from June 22, 2004 through July 23, 2004 using validated data. Reportable 30-day average values for Am were also observed for the period from June 27 through July 23, 2004 using validated data. Additional data are being validated. The end of the reportable period will be determined when Kaiser-Hill receives subsequent validated analytical results.

Water flowing through SW027 also passes through Pond C-2 and Woman Creek before leaving RFETS. RFCA POCs GS31 (Pond C-2 outlet) and GS01 (Woman Creek at Indiana Street) again monitor this water. The water monitored at SW027 during the reportable periods is currently being detained in Pond C-2. Pond C-2 is tentatively scheduled for discharge by the end of calendar year 2004.

Kaiser-Hill and DOE are currently producing the source evaluation reports for these locations in response to these reportable values. These source evaluations will be included in the WY03 Automated Surface-Water Monitoring Report, due to be completed by the end of October 2004. A key indicator of the elevated levels has been a significant increase in total suspended solids. Kaiser-Hill has issued a Management Directive (Kaiser-Hill Directive NRT-011-04) enhancing the guidance for implementing comprehensive erosion control measures at RFETS.

A review of all analytical data available for the quarter as of September 30, 2004 showed that the 30-day moving average values for all other POE and POC locations were under the RFCA action levels and standards framework for all monitored analytes.

4.4 Groundwater Monitoring

Highlights from the Second (calendar) Quarter 2004 RFCA Groundwater Monitoring Report were presented at the Quarterly Information Exchange Meeting on September 28, 2004. Other activities completed during the fourth quarter of FY04 included:

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1. Sampled 49 IMP wells and other groundwater monitoring wells. One hundred and thirteen groundwater samples were shipped to off-site laboratories for analysis. Sampling of 14 additional wells was attempted but the wells were dry.
2. The Well Abandonment and Replacement Program abandoned 123 wells and installed 2 new wells (10304 and 11104).
3. The Site met with the IMP groundwater working group on July 19 and 26, 2004; August 9, 24, and 30, 2004; and September 14 and 20, 2004 to discuss statistical trending analysis, the proposed long-term groundwater monitoring network, and the FY05 IMP groundwater DQOs.
4. Completed the draft 2003 Annual RFCA Groundwater Monitoring Report and submitted it to DOE for review. Received DOE comments and have incorporated into the final 2003 Annual RFCA Groundwater Monitoring Report.

5.0 Approved Decision Documents

The following decision documents approved during the fourth quarter of FY04 will be included as an update to RFCA Attachment 12 in accordance with RFCA paragraph 122.

1. The Final Interim Measure/Interim Remedial Action for IHSS Group 900-11 903 Pad Lip Area was approved by EPA on September 20, 2004.
2. The Interim Measure/Interim Remedial Action and Resource Conservation and Recovery Act Closure of the Present Landfill was approved by CDPHE and EPA on August 23, 2004

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