

**CLOSEOUT REPORT
FOR IHSS GROUP 000-1
SOLAR EVAPORATION PONDS
AREA OF CONCERN**

July 2003

1/15

IA-A-003004

**CLOSEOUT REPORT
FOR IHSS GROUP 000-1
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AREA OF CONCERN**

**Approval received from the Colorado Department of Public Health and Environment
July 25, 2003**

Approval letter contained in the Administrative Record.

July 2003

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ENCLOSURE

Compact Disk, Data Set for IHSS Group 000-1 AOC

ACRONYMS

AL	action level
AOC	Area of Concern
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
DOE	U.S. Department of Energy
DQA	data quality assessment
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation
ft	feet
HEPA	high-efficiency particulate absorption
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
ICP	inductively coupled plasma
IDC	Item Description Code
IHSS	Individual Hazardous Substance Site
ITS	Interceptor Trench System
K-H	Kaiser-Hill Company L.L.C.
LCS	laboratory control sample
LLW	low-level waste
LLMW	low-level mixed waste
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
MST	Modular Storage Tanks
NFAA	No Further Accelerated Action
NLR	No Longer Representative
NPWL	New Process Waste Lines
OPWL	Original Process Waste Lines
PAC	Potential Area of Concern
PAM	Proposed Action Memorandum
PARCCS	precision, accuracy, representativeness, completeness, comparability and sensitivity
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
ppb	parts per billion
ppm	parts per million
QC	quality control
RADMS	Remedial Action Decision Management System
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RL	reporting limit
RPD	Relative Percent Difference
RSOP	RFCA Standard Operating Protocol

SAP	Sampling and Analysis Plan
SEP	Solar Evaporation Ponds
Site	Rocky Flats Environmental Technology Site
SOR	sum of ratio
SVOC	semivolatile organic compound
ug/kg	micrograms per kilogram
ug/l	micrograms per liter
VOC	volatile organic compound
V&V	verification and validation
WRW	wildlife refuge worker
XRF	x-ray fluorescence

EXECUTIVE SUMMARY

This closeout report summarizes accelerated action activities conducted at the Individual Hazardous Substance Site (IHSS) Group 000-1 Solar Evaporation Ponds Area of Concern (AOC), which is located at the Rocky Flats Environmental Technology Site (RFETS). Activities were planned and executed in accordance with the Industrial Area Sampling and Analysis Plan (IASAP), the IASAP Addendum #IA-02-07, and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol for Routine Remediation (ER RSOP). Notification of the planned characterization and removal activities was provided in ER RSOP Notification #02-08.

Activities performed under this Notification were conducted between August 6 and November 20, 2002, and involved the removal of all concrete slabs, all above-ground process waste lines, some below-ground process waste lines, a valve pit, miscellaneous valve components, all sumps and pumps, and contaminated soil (hot spots). There were only minor deviations from the Notification. Some below-ground waste lines and drain lines remain, however, all of these lines have been disrupted (plugged). Activities did not include the ponds themselves. Activities associated with the ponds (i.e., best management practices) were conducted under a separate decision document, the Proposed Action Memorandum (PAM) for the Solar Evaporation Ponds, and involved pushing in the berms and adding fill to create a gentle grade to the south. The AOC will be seeded in the near future.

The action also involved characterization, including characterization of Potential Area of Concern 900-1310 and excavations where contaminated materials were removed. Analytical results indicate that all remaining soil concentrations were below RFCA Tier II Action Levels, except for one beryllium concentration and 16 arsenic concentrations. All exceedances were significantly below the RFCA Tier I ALs. Eight arsenic concentrations and one manganese concentration exceeded the proposed Wildlife Refuge Worker (WRW) ALs. There were no exceedance of the proposed Ecological Receptor ALs. Confirmation sampling, conducted after the hot spots were removed, indicate that all soil concentrations were below RFCA Tier II Action Levels, except for one beryllium concentration, which was slightly above the RFCA Tier II Action Level. All concentrations were also below the proposed WRW and Ecological Receptor ALs. Results of the data quality assessment conducted confirmed that the data collected and used are adequate for decision-making.

Removal activities were consistent with and contributed to the ER RSOP overall long-term remedial action objectives for RFETS soil. The removal of slabs, the valve pit, valve components, sumps, and hot spots, and the removal or disruption of process waste lines contributed to the protection of human health and the environment because potential sources of contamination were removed or isolated. These actions also minimized the need for long-term maintenance and institutional or engineering controls because potential sources of contamination were removed or isolated. In addition, best management practices were used during the accelerated action to prevent the spread of contamination during the accelerated action (e.g., erosion and dust controls).

The accelerated action involved three Resource Conservation and Recovery Act (RCRA) Units (# 21, 48 and 374.3). RCRA Units 21 and 48 had been partially closed prior to the accelerated action, and removal of the remaining concrete slabs associated with Building 788, the Clarifier, and the pump transfer station at Building 308A under this accelerated action constitutes final closure of the two RCRA units. No additional documentation will be submitted for the closure of these RCRA units. RCRA Unit 374.3 consists of the New Process Waste Lines, and removal of the aboveground line section from Building 910 to Building 774 constitutes partial closure of the RCRA unit (refer to Section 3.0). Closure of the ponds is addressed in the PAM.

No group-specific, near-term management techniques are required because of environmental conditions. Excavation at the site will continue to be controlled through the Site Soil Disturbance Permit process. Fencing and signs restricting access will be posted to minimize disturbance to newly-revegetated areas. Site access and security controls and the Soil Disturbance Permit process will remain in place pending implementation of long-term controls.

The presence of metals and americium-241 in AOC soils will be analyzed in the Site Wide Comprehensive Risk Assessment, which is part of the RCRA Facility Investigation/Remedial Investigation and Corrective Measures Study/Feasibility Study that will be conducted for the Site. The need for and extent of any, more general, long-term stewardship activities will also be analyzed in the RCRA Facility Investigation/Remedial Investigation and Corrective Measures Study-Feasibility Study and will be proposed as part of the preferred alternative in the Proposed Plan for the Site. Institutional controls and other long-term stewardship requirements for Rocky Flats will ultimately be contained in the Corrective Action Decision/Record of Decision, in any post-closure Colorado Hazardous Waste Act permit that may be required, and in any post-RFCA agreement.

No specific long-term stewardship activities are recommended for the IHSS Group 000-1 AOC beyond the generally applicable Site requirements that may be imposed on this area in the future, which are dependent upon the final remedy selected. Institutional controls that will be used as appropriate for this area include prohibitions on construction of buildings in the IA, restrictions on excavation or other soil disturbance, or prohibitions on groundwater pumping in the area of the IHSS Group 000-1 AOC.

No specific engineered controls are anticipated as a result of the conditions remaining in the IHSS Group 000-1 AOC. Groundwater treatment, via the Solar Pond Plume Treatment System, will continue.

No specific environmental monitoring is anticipated as a result of the conditions remaining in the IHSS Group 000-1 AOC.

This closeout report and associated documentation will be retained as part of the Rocky Flats administrative record file. These specific long-term stewardship recommendations will also be summarized in the Rocky Flats *Long Term Stewardship Strategy*.

Closeout Report for IHSS Group 000-1, Solar Evaporation Ponds Area of Concern

Approval of this Closeout Report constitutes regulatory agency concurrence that this IHSS Group is a No Further Accelerated Action (NFAA) site. This information and NFAA determination will be documented in the FY03 Historical Release Report (HRR).

1.0 INTRODUCTION

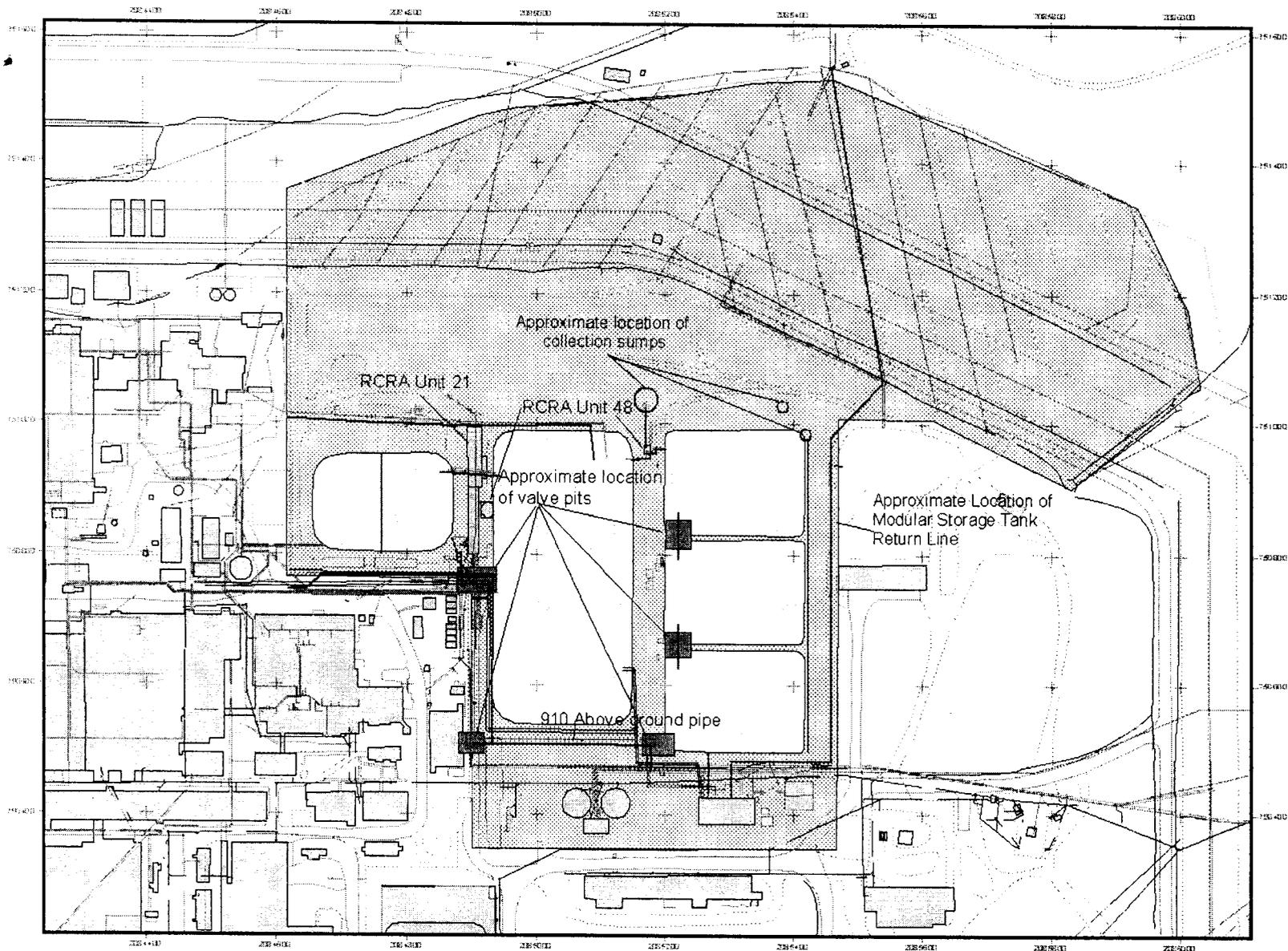
This closeout report summarizes accelerated action activities conducted at the Individual Hazardous Substance Site (IHSS) Group 000-1 Solar Evaporation Ponds Area of Concern (AOC), which is located at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. The IHSS Group 000-1 AOC consists of the following:

- Leak detection drains and collection sumps;
- Remaining concrete slabs associated with the Building 788 Permacon, the Clarifier, and the 308A Pumphouse, which are units regulated under the Resource Conservation and Recovery Act (RCRA) (RCRA Unit 21 includes the Permacon, and RCRA Unit 48 includes the Clarifier and Pumphouse);
- Portions of the Original Process Waste Lines (OPWL) and five valve pits, which are part of IHSS 121;
- Above-ground pipeline from Building 910 to Building 374, which is part of the New Process Waste Lines (NPWL) (NPWL constitutes RCRA Unit 374.3);
- Modular Storage Tanks (MST) return line to Building 910; and
- Interceptor Trench System (ITS) Water Spill area, which constitutes Potential Area of Concern (PAC) 900-1310.

The location of the IHSS Group 000-1 AOC is shown on Figure 1, and the AOC components are shown on Figure 2. The five solar evaporation ponds, including the berms, are not covered by the Notification and this Closeout Report.

Characterization and removal activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001), IASAP Addendum #IA-02-07 (DOE 2002a), and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002b). Notification of the planned characterization and removal activities was provided in ER RSOP Notification #02-08 (DOE 2002c), which was approved by the Colorado Department of Public Health and Environment (CDPHE) on July 30, 2002 (CDPHE 2002).

Figure 2
Solar Evaporation Ponds
Area of Concern



KEY

-  OU4 AOC
-  SEP
-  IHSS
-  Building or other structure
-  OPWL
-  NPWL
-  Storm drain
-  Leak Detection Drain
-  MST Return Line
-  Stream, ditch, or other drainage
-  Paved area
-  Fence
-  Dirt Road

N

Scale = 1:1,700

40 0 40 80 120 160 Feet

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 83

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by



This report contains the information necessary to demonstrate attainment of cleanup objectives and closure of the IHSS Group 000-1 SEP AOC. This information includes:

- Site characterization information
 - Description of site characterization activities, and
 - Site characterization data, including data tables and maps;
- Site accelerated action information
 - Description of the accelerated action, including the rationale for the action and map of the target remediation area,
 - Map of the actual remediation area, including excavation bounds, and dates and durations of specific remedial activities, and
 - Photographs documenting site characterization, remediation, and reclamation activities;
- Confirmation sampling data, including data tables and location maps, as well as a comparison of the confirmation data to applicable cleanup goals;
- Description of RCRA unit closure activities;
- Description of deviations from the ER RSOP,;
- Description of near-term stewardship actions and long-term stewardship recommendations;
- Description of site condition after remediation that includes a map of reporting limits (RLs), RFCA action levels (ALs), and residual contamination above RFCA Tier II ALs;
- Description of waste disposition;
- Description of site reclamation;
- Table of No Longer Representative sample locations where soil has been remediated, which will be used to mark database records so they are not used in the Comprehensive Risk Assessment or other Site analyses; and
- Data quality assessment (DQA), including comparison of confirmation data with project data quality objectives (DQOs).

Approval of this Closeout Report constitutes regulatory agency concurrence that this IHSS Group is a No Further Accelerated Action (NFAA) site. This information and NFAA determination will be documented in the FY03 Historical Release Report (HRR).

5.0 RCRA UNIT CLOSURE

The accelerated action involved RCRA Units 21, 48 and 374.3. RCRA Units 21 and 48 had been partially closed prior to the accelerated action (DOE 2002c). Removal of the remaining concrete slabs associated with Building 788, the Clarifier, and the pump transfer station at Building 308A under this accelerated action constitutes final closure of the two RCRA units. The slabs included the 12' x 12' slab under the Building 788A slab where a transfer pump was stationed (refer to Section 3.0). All slabs were disposed of as LLMW (refer to Section 3.0). RCRA Unit 374.3 consists of the NPWL, and removal of the aboveground line section from Building 910 to Building 774 constitutes partial closure of the RCRA unit (refer to Section 3.0). The SEPs also were interim status units, and their closure is addressed in the SEP PAM (DOE 2002d).

The sampling locations associated with RCRA Unit 21 are located between Pond 207C and Pond 207A, and those associated with RCRA Unit 48 are located between Pond 207A and 207B (North); refer to Table 3 and Figure 4. Sampling results at these locations indicate that all contaminant concentrations were below RFCA Tier II, WRW and Ecological Receptor ALs, except for arsenic concentrations. Arsenic concentrations at CJ47-000, CJ47-001, CJ47-002, CJ47-DR01 and CJ47-DR02 exceeded the Tier II AL, and arsenic concentrations at CJ47-000, CJ47-001, CJ47-002 and CJ47-DR01 exceeded the WRW AL. Concentrations, however, are within the background range observed at RFETS (refer to ER Regulatory Contact Record dated December 17, 2002, included in Appendix B).

	A	B	C	D	E	F	G	H	I	J
	Unit No.	Building	Unit Description	Regulatory Status	Closure Status	Closure Date	Closure Document Approval	SET	Closure document submittal	COPHE approval
1										
23	21	788	Container Storage	INTERIM STATUS - CLOSED per a RFCA decision document	CLOSED BY REMOVAL BY ER Closeout Report for IHSS Group 000-1 Solar Evaporation Ponds Area of Concern July 2003	7/3/04	CDD 2/17/99		CSR 7/2/03	
109	48	788	Pondcrete Solidification Process	INTERIM STATUS - CLOSED per a RFCA decision document	CLOSED: Closeout Report for IHSS Group 000-1 Solar Evaporation Ponds Area of Concern July 2003. CLOSED BY REMOVAL BY ER	7/1/03	CDD 2/17/99			
110	48.01	788	Solar Ponds Clarifier	INTERIM STATUS - CLOSED per 6 CCR 1007 3, Part 265	CLOSED in accordance with "Closure Description Document for RCRA Units 21 and 48". Closure Certification signed 9/23/99	9/26/99			CC 9/23/99	