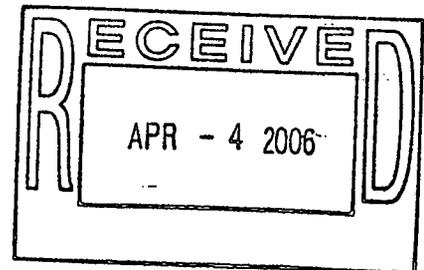


Summary Report for Closure of RCRA Unit 374.3 -  
The 700-800 Area Process Waste Transfer System

U. S Department of Energy  
Rocky Flats Environmental Technology Site  
EPA ID No. CO7890010526



ADMIN RECORD

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## 1.0 PURPOSE

This Summary Report pertains to RCRA closure activities for the 700-800 Area Process Waste Transfer System, part of RCRA Unit 374.3, and is a requirement of Section 1.2 of the Closure Description Document (CDD) for this RCRA Unit (03-RF-00038). It should be noted that the attached map shows a 300-500 area, which is considered part of the 700-800 area addressed in the above CDD. This report contains a description of major closure activities and any deviations from those stated in the CDD and other relevant information.

## 2.0 DESCRIPTION OF MAJOR CLOSURE ACTIVITIES

Closure activities were conducted under IWCP Work Packages:

- T0112205 • T0112373 • T0112455 • T0112537
- T0112538 • T0112539 • T0112544 • T0112693
- T0112694 • T0112695 • T0112760 • T0112792
- T0112878 • T0112879 • T0112960 • T0112961
- T0113000 • T0113001 • T0113002 • T0113042
- T0113127 • T0113152

Due to the majority of the lines, and some of the valve vaults not being able to achieve clean closure, the majority of the system was closed by removal.

The process waste lines that met clean closure had the openings sealed (grouted) at the points where they entered the valve vaults. All valve vault structures that met clean closure and those portions of the vaults that are more than four feet below current grade remain. See attached Contact Records that document consultation with CDPHE, concerning Valve Vaults 2, 3, 8, and 9.

All water generated during the closure activities was managed through the Aqueous Waste Treatment System.

Following is the weight of the **LLMW** that was generated during closure activities:

- 544.62 tons of waste

Following is the weight of the **LLW** that was generated during closure activities.

- 111.56 tons of waste

## 3.0 SUMMARY

The requirements stated in the CDD have been fulfilled. The attached map shows the complete RCRA 374.3 process waste transfer system and the status of the lines and valve vaults (Closure Summary Report for Partial Closure of RCRA Unit 374.3 – 400 Area Process Waste Transfer System [03-RF-00967], submitted 6/26/03).

**CERTIFICATION**

I certify that the closure activities for closure of RCRA Unit 374.3, 700-800 Area Process Waste Transfer System, were conducted consistent with the approved CDD (January 23, 2003, 03-RF-00038), and as stated above.

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9/23/05

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Timothy J. Humiston, PE# 26363

## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

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**Date/Time:** 11/18/04 - 1200  
**Site Contact(s):** Karen Wiemelt  
**Phone:** (303) 966-9883  
**Regulatory Contact:** David Kruchek, CDPHE  
**Phone:** (303) 692-3328  
**Agency:** CDPHE

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**Purpose of Contact:** Valve Vault 08 Demolition

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**Meeting Attendance:** K. L. Wiemelt, KH David Kruchek, CDPHE

### Discussion

On November 18, 2004, David Kruchek/CDPHE and Karen Wiemelt/KH discussed the disposition of Valve Vault (VV) 08. VV 08 is located to the west of Building 707. The vault's dimensions are 13' by 12' by 9'6" deep. There is also a sump that extends 4' below the bottom of the vault. Additionally, the final grade in this area will be approximately 3½ feet higher than current grade.

VV 08 was pressure washed to decontaminate it. Results show that this vault has been RCRA clean closed and has no removable Be contamination. The majority of the valve vault meets radiological unrestricted release criteria for both alpha and beta. However, there are a few elevated levels of alpha activity above the unrestricted release levels for fixed contamination in the sump of the valve vault and 2 NPWL stubs located in the lower 4 feet of the valve vault. The sump also has an elevated level of alpha activity slightly above the unrestricted release levels for removable contamination (32 dpm/100 cm<sup>2</sup> vs. 20 dpm/100 cm<sup>2</sup>).

Conservative calculations were done to determine the levels of radiological contamination that would be left in the ground if the valve vault were left in place. The estimated levels of remaining radiological material that would be left are as follows:

- 1.21 pCi/g Pu-239
- 0.27 pCi/g Pu-240
- 1.36 pCi/g Am-241
- 0.05 pCi/g U-234
- 0.05 pCi/g U-235
- 1.43 pCi/g U-238

The calculations show that the residual contamination left is well below Wildlife Refuge Worker Action Levels.

Based on the approach agreed to for VV 09, VV 08 will be flow-filled to the **top** of the valve , vault. None of the valve vault will be removed since approximately 3½ feet of fill will be added to this area to achieve final configuration. The flow fill will be Several feet higher than any level of contamination above the unrestricted release criteria. Associated NPWL outside the valve vault that have not been RCRA clean closed will be removed. However, the NPWL stubs that penetrate the valve vault wall with the elevated readings will remain in place. Additionally, the Closeout Report will include the estimated amount of transuranic material that is left in place.

**Contact Record Prepared By:** Karen Wiemelt

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**Required Distribution:**

M. Aguilar, USEPA  
S. Bell, DOE  
R. Birk, DOE  
C. Deck, KH  
D. Foss, KH  
S. Garcia, EPA  
C. Gilbreath, KH  
S. Gunderson, CDPHE

D. Kruchek, CDPHE  
J. Legare, RFFO  
R. Leitner, KH  
J. Mead, KH  
G. Morgan, DOE  
S. Nesta, KH  
K. North, KH  
R. Schassburger, DOE  
D. Shelton, KH

C. Zahm, KH

**Additional Distribution:**

H. Ainscough, CDPHE  
C. J. Freiboth, KH  
G. Carnival, KH  
D. Parsons, KH

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

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Date/Time: 08/10/04 - 1315

Site Contact(s): C. J. Freiboth (KH) - (CJF-077)  
Phone: (303) 966-2823

Regulatory Contact: David Kruchek, CDPHE  
Phone: (303) 692-3328

Agency: CDPHE

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Purpose of Contact: Valve Vault 02 Demolition

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Meeting Attendance: C. J. Freiboth, KH PM                      David Kruchek, CDPHE  
M. D. Flannery, KH                                      H. Linsinbigler, KH  
S. M. Nesta, KH    A. Cameron, KH

### Discussion

On August 10, 2004, at 1315, a walkdown of Valve Vault (VV) 02 was conducted with the State (Kruchek). This vault has been RCRA clean closed, and demolition and removal of the entire vault was required because of residual fixed uranium contamination on the bottom walls of the vault and in the floor sump. The fixed levels on the walls are as high as 19,482 dpm/100 cm<sup>2</sup>, and the sump has 45,000 dpm/100 cm<sup>2</sup> of fixed contamination. There is no removable radiological contamination in the vault.

Demolition activities on the vault were initiated, and included removal of the vault roof and portions of the walls. In order to remove the entire vault, a large excavation around the vault was initiated. The excavation on the outside of the vault continues to fill up with ground water (the water in the excavation has been pumped out three (3) times), due to the proximity of the vault to Building 883, where the footer drain system has been rendered inoperable. In addition, a retaining wall is located above the vault to the east, and in order to excavate around the vault for removal, an even larger excavation would be required. This large of an excavation would take out a significant portion of the retaining wall and could undermine much of the road next to Building 883. A significantly sized excavation creates additional safety concerns due to the sloping requirements. Based on the continued infusion of ground water into the excavation, and because of the size of the vault and required excavation, complete removal of the vault is very difficult.

A proposal was presented to the State (Kruchek), where the debris in the vault would be removed and the bottom portion of the vault would be flow-filled to ensure the fixed contamination is locked in place. Once this has been completed the vault would be removed to the flow-fill, ensuring the two (2) pipe penetrations from the lines from VV-1 are removed, as well as the two (2) lines from Building 883. The excavation around the vault that is filled with water would be pumped one more time and then backfilled.

Contact Record 08/10/04

The State (Kruchek) concurred with the approach that was presented.

Contact Record Prepared By: C. J. Freiboth

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**Required Distribution:**

M. Aguilar, USEPA  
S. Bell, DOE  
R. Birk, DOE  
C. Deck, KH  
D. Foss, KH  
S. Garcia, EPA  
C. Gilbreath, KH  
S. Gunderson, CDPHE

D. Kruchek, CDPHE  
J. Legare, RFFO  
R. Leitner, KH  
J. Mead, KH  
G. Morgan, DOE  
S. Nesta, KH  
K. North, KH  
R. Schassburger, DOE  
D. Shelton, KH

C. Zahm, KH

**Additional Distribution:**

H. Ainscough, CDPHE  
A. Cameron, KH  
C. J. Freiboth, KH  
M. D. Flannery, KH  
H. Linsinbigler, KH

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

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Date/Time: 12/08/04 - 1400

Site Contact(s): Karen Wiemelt  
Phone: (303) 966-9883

Regulatory Contact: David Kruchek, CDPHE  
Phone: (303) 692-3328

Agency: CDPHE

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**Purpose of Contact:** Valve Vault 03 Demolition

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**Meeting Attendance:** K. L. Wiemelt, KH David Kruchek, CDPHE

### Discussion

On December 8, 2004, David Kruchek/CDPHE and Karen Wiemelt/KH discussed the disposition of Valve Vault (VV) 03. VV 03 is located to the northwest of Building 883. The vault's dimensions are 9'9" by 9'9" by 13'6" deep. There is also a sump that extends 4' below the bottom of the vault. Current grade is representative of final grade for this area.

VV 03 was pressure washed to decontaminate it. Results show that this vault has been RCRA clean closed and has no removable Be contamination. The majority of the valve vault meets radiological unrestricted release criteria for both alpha and beta. However, there are a few elevated levels of alpha and beta activity above the unrestricted release levels for fixed contamination in the bottom 6 feet of the valve vault and the sump. All removable levels are below the unrestricted release levels.

Conservative calculations were done to determine the levels of radiological contamination that would be left in the ground if the valve vault were left in place. The estimated levels of remaining radiological material that would be left are as follows:

- 0.71 pCi/g Pu-239
- 0.16 pCi/g Pu-240
- 0.80 pCi/g Am-241
- **0.03 pCi/g U-234**
- 0.12 pCi/g U-235
- 3.45 pCi/g U-238

The calculations show that the residual contamination left is well below Wildlife Refuge Worker Action Levels.

Based on the approach agreed to for VV 09, VV 03 will be back-filled to the top of the valve vault. Six feet of the top of the valve vault has already been removed. Debris from this removal

that is in the bottom of the valve vault will be removed to the extent practicable. Since removable levels meet the unrestricted release levels, the valve vault will be backfilled with dirt. Associated NPWL outside the valve vault that have not been RCRA clean closed will be removed. Additionally, the Closeout Report will include the estimated amount of transuranic material that is left in place.

**Contact Record Prepared By:** Karen Wiemelt

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**Required Distribution:**

M. Aguilar, USEPA  
S. Bell, DOE  
R. Birk, DOE  
C. Deck, KH  
D. Foss, KH  
S. Garcia, EPA  
C. Gilbreath, KH  
S. Gunderson, CDPHE

D. Kruchek, CDPHE  
J. Legare, RFFO  
R. Leitner, KH  
J. Mead, KH  
G. Morgan, DOE  
S. Nesta, KH  
K. North, KH  
R. Schassburger, DOE  
D. Shelton, KH

C. Zahm, KH

**Additional Distribution:**

H. Ainscough, CDPHE  
C. J. Freiboth, KH  
G. Carnival, KH  
D. Parsons, KH

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## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

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**Date/Time:** 10/27/04 - 1000  
**Site Contact(s):** Karen Wiemelt  
**Phone:** (303) 966-9883  
**Regulatory Contact:** David Kruchek, CDPHE  
**Phone:** (303) 692-3328  
**Agency:** CDPHE

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**Purpose of Contact:** Valve Vault 09 Demolition

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**Meeting Attendance:** C. J. Freiboth, KH PM                      David Kruchek, CDPHE  
K. L. Wiemelt, KH    D. Parsons, D&DSC

### Discussion

On October 27, 2004, at 1000, a meeting regarding Valve Vault (VV) 09 was conducted with the State (Kruchek). VV 09 is located at the northwest corner of Building 707. The vault's dimensions are 8' by 12' by 11'8" deep. There is also a sump below the bottom of the vault. Additionally, the final grade in this area will be approximately 5 feet higher than current grade.

VV 09 was pressure washed to decontaminate it. Results show that this vault has been RCRA clean closed and has no removable Be contamination. The majority of the valve vault meets radiological unrestricted release criteria for both alpha and beta. However, there are a few elevated levels of alpha activity above the unrestricted release levels for both removable and fixed contamination in the lower 4 feet and sump of the valve vault,

Conservative calculations were done to determine the levels of radiological contamination that would be left in the ground if the valve vault were left in place. The estimated levels of remaining radiological material that would be left is as follows:

- 1.47 pCi/g Pu-239
- 0.33 pCi/g Pu-240
- 1.65 pCi/g Am-241
- 0.06 pCi/g U-234
- 0.05 pCi/g U-235
- 1.45 pCi/g U-238

The calculations show that the residual contamination left is well below Wildlife Refuge Worker Action Levels.

A proposal was presented to the State (Kruchek) where the vault would be removed to four feet below final grade and the remainder of the valve vault would be flow-filled to ensure the fixed

Contact Record 11/03/04

contamination is locked in place. Associated NPWL that have not been RCRA clean closed will still be removed. It was also proposed to apply this process to other valve vaults that are RCRA clean-closed but have some contamination above the unrestricted release criteria.

The State (Kruchek) concurred with the approach that was presented and also requested that flow fill be added to a minimum of one foot above the highest (in elevation) level of contamination above the unrestricted release criteria. The State also requested that the removable contamination be fixed prior to flow filling the vault. Site representatives agreed to these items (Freiboth, Parsons, Wiemelt). Results for each valve vault that is a candidate for this approach will be presented and documented in a Contact Record. Additionally, the Closeout Report will also include the estimated amount of transuranic material that is left in place.

**Contact Record Prepared By: Karen Wiemelt**

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**Required Distribution:**

M. Aguilar, USEPA

S. Bell, DOE

R. Birk, DOE

C. Deck, KH

D. Foss, KH

S. Garcia, EPA

C. Gilbreath, KH

S. Gunderson, CDPHE

D. Kruchek, CDPHE

J. Legare, RFFO

R. Leitner, KH

J. Mead, KH

G. Morgan, DOE

S. Nesta, KH

K. North, KH

R. Schassburger, DOE

D. Shelton, KH

C. Zahm, KH

**Additional Distribution:**

H. Ainscough, CDPHE

A. Cameron, KH

C. J. Freiboth, KH

G. Carnival, KH

D. Parsons, KH

**IHSS Group 0004  
New Process Waste Lines  
(NPWL) and Valve Vault  
Locations**

**Figure 1**

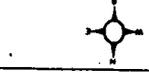
- KEY**
- NPWL - removed (below ground)
  - NPWL - removed (above ground)
  - NPWL - left in place (clean closed)
  - NPWL - left in place (not part of RCRA Unit 374.3)

- Valve Vault - removed
- Valve Vault - partially removed and flow tied
- Valve Vault - partially removed
- Valve Vault - and backfilled

- Buildings/structure
- Demolished structures
- Paved area
- Dirt road

Note: Valve vaults are greatly enlarged from actual scale for readability purposes

**DRAFT**



Scale = 1/4,000

State Plane Coordinate Projection  
Datum: NAD 27

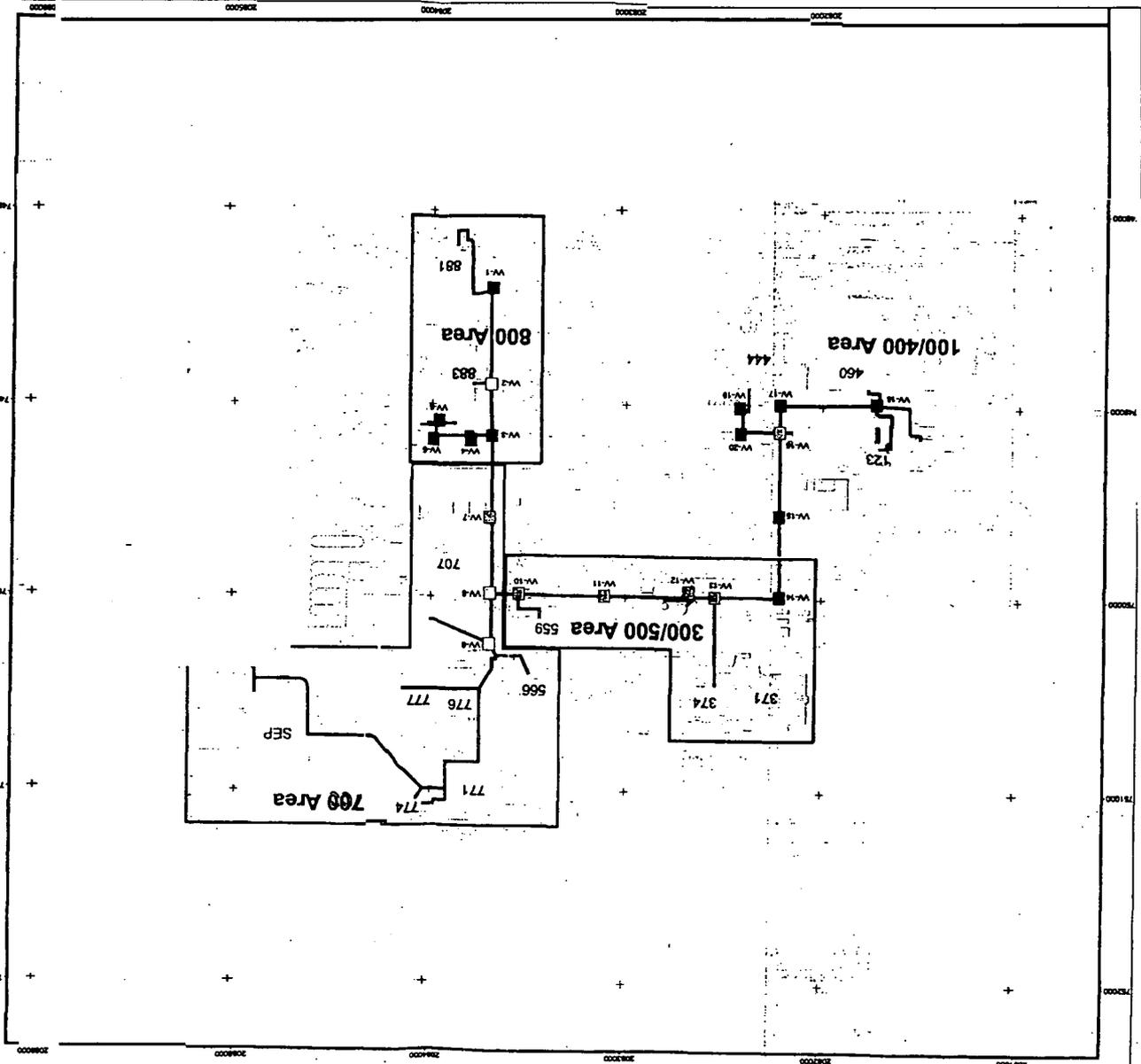
U.S. Department of Energy Site  
Rocky Flats Environmental Technology Site

Prepared by: **ADAMS**  
Date: August 2005



**KAISER-HILL  
COMPANY**

Prepared for: **ADAMS**



N/A