Revised 08/05

CORRES. CONTROL
INCOMING LTR NO.

0041 00 RF 05

DUE DATE

ACTION

DIST.	LTR	ENC
BERARDINI, J.H.	X	
BOGNAR, E.S.	X	
BROOKS, L.	X	
CARPENTER, M.	X	
CROCKETT, G. A.	X	
DECK, C. A.	X	
DEGENHART, K. R.	X	
FERRERA, D. W.	X	
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	
LONG, J. W.		
NESTA, S.	X	
SHELTON, D. C.	X	
TUOR, N. R.	X	
[illegible]O, D.	X	
[illegible]IELT, K.	X	
[illegible]I, C.	X	
Rothrock, M	X	

COR. CONTROL	X	
ADMIN. RECORD	X	

Reviewed for Addressee
Corres. Control RFP

8/10/05 DC
Date By

Ltr. #

DOE ORDER #
5400.1

RECEIVED
2005 AUG 10 A 7:41
CORRESPONDENCE CONTROL

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director
Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado
http://www.cdphe.state.co.us

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

August 4, 2005

Mr. John Rampe
Director, Project Management Division
U.S. Department of Energy, Rocky Flats Project Office
12101 Airport Way, Unit A
Broomfield, CO 80021-2583

RE: Closeout Report for Buildings 460 & 462

Dear Mr. Rampe:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division has reviewed your letter, and the Closeout Report for Buildings 460 and 462, dated July 27, 2005. Thank you for providing this Closeout Report for these Type 1 Facilities.

It is our understanding that the asbestos flashing was determined not to be asbestos material as previously discussed in the RLCR/PDSR for B460, and that the asbestos containing floor tile remains on the slab.

As addressed in our RLCR concurrence letter for B460 dated May 18, 2005, we requested that a PE Certification be submitted for closure of the RCRA Unit. This condition has been satisfied as stated in our letter dated August 2, 2005.

It is also our understanding that the B462 slab was completely removed.

If you have any questions regarding this correspondence please contact me at (303) 692-3328, or Harlen Ainscough at (303) 692-3337.

Sincerely,

David A. Kruchek

David A. Kruchek
Acting Rocky Flats Oversight Unit Leader

cc: Gary Morgan, DOE
Mark Aguilar, EPA
Steve Nesta, KH
Sam Garcia, EPA
Administrative Records – Mountain View
Karen Wiemelt, KH
Dave Shelton, KH
David Abelson, RFCLOG
Carl Spreng, CDPHE

ADMIN RECORD

IA-A-002991

1/34

Revised 05/05

CORRES. CONTROL
INCOMING LTR NO.

02397 RF05

DUE DATE

ACTION

DIST.	LTR	ENC
BERARDINI, J.H.	X	
BOGNAR, E.S.	X	
BROOKS, L.	X	
CARPENTER, M.	X	
CROCKETT, G. A.	X	
DECK, C. A.	X	
DEGENHART, K. R.	X	
FERRERA, D. W.	X	
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	
LONG, J. W.		
NESTA, S.	X	
SHELTON, D. C.	X	
TUOR, N. R.	X	
WP	X	
V C	X	
Z	X	

COR. CONTROL	X	
ADMIN. RECORD	X	

Reviewed for Addressee
Corres. Control RFP

8/8/05 DC
Date By

Ref Ltr. #

DOE ORDER #
5400.1

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
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http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

August 2, 2005

John J. Rampe
Director, Project Management Division
U.S. Department of Energy, Rocky Flats Project Office
12101 Airport Way, Unit A
Broomfield, Colorado 80021-2583

Mr. Stephen Nesta
Environmental Manager
Kaiser-Hill Company, RISS
Rocky Flats Environmental Technology Site
12101 Airport Way, Unit B
Broomfield, Colorado 80021-2583

RE: Closure Summary Report for RCRA Unit 460.1

Dear Mr. Rampe and Mr. Nesta:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the "Division") has received the subject report dated May 5, 2005. The Division agrees that closure activities under Part X-Closure of the Site's State RCRA Permit, specifically permit number CO-04-06-23-01, effective July 23, 2004 were applicable. Further that the activities described in the Unit's Closure Description Document (CDD), approved by the Division on February 4, 2005, have been completed.

Specifically, we accept the Closure Summary Report, which address the secondary containment pans and rollers in the five cargo containers previously located east of Building 460. We also accept the professional engineer certification, submitted in conjunction with an administrative closure, for the floor of the B460 Highbay.

If you have any questions concerning this correspondence, please contact me at 303-692-3328 or Harlen Ainscough at (303) 692-3337.

Sincerely,

David A. Kruchek

David A. Kruchek
Acting Rocky Flats Oversight Unit Leader

cc: M. Aguilar, USEPA Region VIII
D. Miller, AGO
Administrative Record, Mountain View
S. Garcia, City of Broomfield
Gary Morgan, DOE

C:\Documents and Settings\Hainscou\My Documents\RFETS\Unit Closures-Closure pLan\B460, Unit 460.1, Closure Summ Rpt acceptance.doc

Revised 05/05

CORRES. CONTROL
INCOMING LTR NO.

0027-05RF05

DUE DATE

ACTION

RECEIVED
2005 MAY 24 P 3:07

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director
Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado
http://www.cdphe.state.co.us

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

DIST.	LTR	ENC
BERARDINI, J.H.	X	
BOGNAR, E.S.	X	
BROOKS, L.	X	
CARPENTER, M.	X	
CIUCCI, J.A.		
CROCKETT, G. A.	X	
DECK, C. A.	X	
DEGENHART, K. R.	X	
DEL VECCHIO, D.		
FERRERA, D. W.	X	
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	
LONG, J. W.		
NESTA, S.	X	
SHELTON, D. C.	X	
SPEARS, M. S.	X	
TUOR, N. R.	X	
WARD, D.	X	
[illegible]EMELT, K.	X	
[illegible], C.	X	
Sons, D	X	
Swartz, JM	X	
COR. CONTROL	X	
ADMIN. RECORD	X	
PATS/130		

Reviewed for Addressee
Corres. Control RFP

5/24/05 LC
Date By

Ref. Ltr. #

DOE ORDER #
5400.1

May 18, 2005

Mr. Joe Legare
Director, Project Management Division
U.S. Department of Energy, Rocky Flats Project Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

RE: Reconnaissance Level Characterization Report (RLCR) for Building 460 – Concurrence

Dear Mr. Legare:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division has reviewed the RLCR for Building 460; Revision 0 dated April 20, 2005. We received this RLCR and your letter on May 05, 2005. We provided comments and have received revisions to this RLCR. Based on the information contained in the RLCR, as revised, we are hereby concurring that Building 460 is a Type 1 Facility.

As stated in this report, all of the RCRA Units have been properly closed, and the appropriate PE Certification will be submitted with the Closeout Report for B460. It is also stated that most of the slab and pits will remain in place, which needs to be properly identified in the Closeout Report along with the location and condition of all remaining infrastructure (storm drain lines, sewer lines, process waste lines, etc). This would include the location of all remaining ACM floor tile, if not removed.

All issues, such as the appropriate protection of the ACM tile during demolition, should be discussed and resolved utilizing the consultative process.

If you have any questions regarding this correspondence please contact me at (303) 692-3367, Harlen Ainscough at (303) 692-3337, or David Kruchek at (303) 692-3328.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

cc: Gary Morgan, DOE
Mark Aguilar, EPA
Sam Garcia, EPA
Duane Parsons, KH
J. Mike Swartz, KH
Dave Shelton, KH
Steve Nesta, KH
Administrative Records Building T130G

d 05/05

CORRES. CONTROL
INCOMING LTR NO.
00250 RF05
DUE DATE
ACTION

RECEIVED
2005 MAY -5 P 1:07
ADMIN RECORD CONTROL

Department of Energy
ROCKY FLATS PROJECT OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

MAY 0 3 2005

05-DOE-00247

DIST.	LTR	ENC
BERARDINI, J.H.	X	X
BOGNAR, E.S.	X	X
BROOKS, L.	X	X
CARPENTER, M.	X	X
CIUCCI, J.A.		
CROCKETT, G. A.	X	X
DECK, C. A.	X	X
DEGENHART, K. R.	X	X
DEL VECCHIO, D.		
FERRERA, D. W.	X	X
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	X
LONG, J. W.		
NESTA, S.	X	X
SHELTON, D. C.	X	X
SPEARS, M. S.	X	X
TUOR, N. R.	X	X
WARD, D.	X	X
WIEMELT, K.	X	X
M, C.	X	X
Freiboth, C	X	X

Mr. Steven H. Gunderson
Rocky Flats Cleanup Agreement Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Dear Mr. Gunderson:

Please find enclosed the Reconnaissance Level Characterization Report (RLCR) for Building 460; reference DWF-028-05. This report characterizes the physical, chemical and radiological hazards associated with this facility, summarizes the characterization activities, defines the Data Quality Objectives developed for this characterization, and presents the data quality assessment, verification and validation of the results.

This building is characterized as a Rocky Flats Cleanup Agreement Type 1 Facility pursuant to the Rocky Flats Environmental Technology Site Decommissioning Program Plan (DDP; K-H, 1999) based upon the RLCR, and is acceptable for demolition.

Questions can be directed to Gary Morgan, Rocky Flats Project Office at (303) 966-6003.

Sincerely,

Joseph A. Legare, Director
RFPO Project Management

COR. CONTROL	X	X
ADMIN. RECORD	X	X
PATS		

Reviewed for Addressee
Corres. Control RFP
5/5/05 AC
Date By

Ref. Ltr. # 05RF003609

DOE ORDER # 5400.1

Enclosure

cc w/o Encl.:
F. Lockhart, OOM, RFPO
D. McCranie, HQCPM, RFPO
G. Morgan, RFPM, RFPO
S. Nesta, K-H RISS Env
C. Freiboth, K-H RISS D&D
K. Wiemelt, K-H RISS D&D
M. Aguilar, USEPA
D. Abelson, RFCLOG

cc w/Encl.:
Administrative Record

Rocky Flats Environmental Technology Site

TYPE 1
RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

BUILDING 460 CLOSURE PROJECT

April 20, 2005

REVISION 0

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Building 460. Because this facility was an anticipated Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facility (i.e.; floors, walls, ceilings and roofs). Environmental media beneath and surrounding the facility was not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building 460. The location of this facility is shown in Attachment A, *Facility Location Map*. This facility no longer supports the RFETS mission and needs to be removed to reduce Site infrastructure, risks and/or operating costs.

Before the facility can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific *Historical Site Assessment Report for the Area 5 - Group 7 Facilities*, Dated October 2002, Revision 0.

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. A RLC is performed before building demolition to define the pre-demolition radiological and chemical conditions of a facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. RLC results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of Building 460. Environmental media beneath and surrounding the facility is not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP.) Refer to section 2.0 of MAN-127-PDSP for these DQOs.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, Building 460 was an anticipated Type 1 facility. However, the High Bay area was on the List of Known Beryllium Areas. Therefore, random and biased beryllium sampling was performed in the High Bay areas accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999.* Biased sampling was performed in the Building 460 office areas. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition. All 125 random and biased beryllium swipe sample results were less than 0.1 $\mu g/100cm^2$. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps.*

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on a review of the HSAR and a facility walk-down, Building 460 contained a small organic coatings laboratory and a silver recovery operation, as well as, a machine shop. Two samples and one duplicate were taken in room 141 where the tanks were located that stored and processed chromium. Because chromium was the only chemical stored in these tanks, only sampling and analysis for RCRA Metals was performed. On this basis, no VOC and SVOC sampling was performed as part of this RLC.

The analytical (RIN#05Z0992) for the core samples reported Total Concentration for lead greater than 100 mg/kg in two of the samples taken from in front of the tanks. This would indicate the potential for lead to be above the regulatory limit of 5 ppm. However, the sample taken from behind the tank did not have this level of lead concentration. The only difference between the sample locations was the type of paint covering the floor. Therefore, two confirmatory samples (RIN#05Z1155) of the paint in front of the tank were taken. The analysis confirmed that the paint is lead-based. However, Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal,* states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) waste, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal. Because there were no high contamination areas in Building 460, this paint may be disposed of as non-hazardous (solid) waste. Consequently, additional sampling for lead in paint in Building 460 is not required.

RCRA permitted units 39.03 and 40.08-40.15, were closed in accordance with the RCRA Closure Plan for the B460 Process Waste System (10/19/95), and the Closure Certification was signed on 9/16/96 (96-DOE-05751). The remaining portion of RCRA unit 374.3 in B460 was closed under the CDD for the 400 Area Valve Vaults. The Closure Summary Report was submitted on 6/23/03 (03-RF-00967). The RCRA permitted storage Unit 460.1, in the highbay of B460, was closed in accordance with Part X.D.1.a. – Clean Closure Option #1: Unit Review and Inspection. A PE Certification will be submitted with the Closure Summary Report. RLC laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps.*

RECEIVED

2005 AUG -2 A 11:31

CORRESPONDENCE CONTROL

vised 05/05

CORRES. CONTROL
INCOMING LTR NO.

2039LRF05

DUE DATE

ACTION

Department of Energy

ROCKY FLATS PROJECT OFFICE
12101 AIRPORT WAY, UNIT A
BROOMFIELD, COLORADO 80021-2583

JUL 27 2005

05-DOE-00478

DIST.	LTR	ENC
ERARDINI, J.H.	X	X
OGNAR, E.S.	X	X
ROOKS, L.	X	X
ARPENTER, M.	X	X
CIUCCI, J.A.		
ROCKETT, G. A.	X	X
ECK, C. A.	X	X
EGENHART, K. R.	X	X
DEL VECCHIO, D.		
ERRERA, D. W.	X	X
IACOMINI, J. J.		
ILPIN, H.		
NDSAY, D. C.	X	X
ONG, J. W.		
ESTA, S.	X	X
HELTON, D. C.	X	X
JOR, N. R.	X	X
ARD, D.	X	X
IEME	X	X
AHM	X	X
reiboth, C	X	X
OR. CONTROL	X	X
DMIN. RECORD	X	X

Reviewed for Addressee
Corres. Control RFP

2/05 [initials]
Date By

Ref. Ltr. #
05RF00686

DOE ORDER #
5400.1

Mr. Carl Spreng
Rocky Flats Cleanup Agreement Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Dear Mr. Spreng:

Please find enclosed a completed Rocky Flats Cleanup Agreement Type 1 Building Disposition Closeout Report provided for your information for Building 460 and Building 462.

Questions may be directed to Gary Morgan, Rocky Flats Project Office, at (303) 966-6003.

Sincerely,

John J. Rampe, Director
Rocky Flats Closure Project Management

Enclosure

cc w/o Encl.:
F. Lockhart, OOM, RFPO
G. Morgan, PS, RFPO
D. McCranie, HQCPM, RFPO
S. Nesta, K-H RISS Env
C. Freiboth, K-H RISS D&D
K. Wiemelt, K-H RISS D&D
D. Kruchek, CDPHE
M. Aguilar, USEPA
D. Abelson, RFCLOG

cc w/Encl.:
Administrative Record

KAISER•HILL
COMPANY

July 19, 2005 05-RF-00686

Gary Morgan, Director
Project Support
DOE, RFPO

TRANSMITTAL OF CLOSE OUT REPORT FOR BUILDING 460 (INCLUDING B462)
DWF-065-05

Attached is the Closeout Report for the Type 1 facility Building 460 (including B462). Please note that a copy of the report has been submitted to the CERCLA AR by the Kaiser-Hill RISS project.

Please contact Steve Nesta x6386 with questions or concerns.

Dennis W. Ferrera

Dennis W. Ferrera
Vice President and Project Manager
Remediation, Industrial D&D, and Site Services

Attachment:
As Stated

SMN:pvt

Orig. and 1 cc – Gary Morgan

cc:
John Rampe
Deanna McCranie

Kaiser-Hill Company, L.L.C.
Rocky Flats Environmental Technology Site, 10808 Highway 93, Unit B, T130F, Golden, CO 80403-8200 ♦ (303) 966-6386

Type 1 Facility Closeout Report

Section A. Facility Data	
Facility No.	B460 (including B462)
Facility Descriptor:	B460-212,980 sqft office and waste storage building; B462-590 sqft cooling tower
Project:	RISS/B460 Closure Project
Date of Demolition:	6/1/2005
Additional Information:	
(Must include information on environmental releases and conditions of site at turnover to Environmental Restoration)	

Section B. Final Characterization Data	
Reconnaissance Level Characterization Report *(concurrence received)*	Reconnaissance Level Characterization Report, Type 1. Concurrence Steven H. Gunderson to Joe Legare, May 18, 2005
In-process Characterization	NA
Pre-Demolition Survey Report *(approval received)*	NA
Post-Demolition Survey Report *(as necessary)*	NA

Section C. Waste Data *(complete categories as appropriate)*	
Sanitary Disposal (Building Strip Out)	
Disposal Site:	BFI Foothills Landfill
Waste Volume (yd^3):	1710
Waste Weight (tons):	177.34
Additional Information:	No asbestos loads were associated with the strip-out/demolition of B460
Sanitary Disposal (Building Demolition)	
Disposal Site:	BFI Foothills Landfill
Waste Volume (yd^3):	39100
Waste Weight (tons):	8649.1
Additional Information:	Includes Demolition of B462 Cooling Tower
Hazardous Disposal	Kettleman Hills Facility, Kettleman City, CA or Bethlehem Apparatus Co, Hellertown, PA
Disposal Site:	Minor amounts
Waste Volume (yd^3):	Electronic circuit boards, thermostats, exit signs, fluorescent bulbs, and any other RCRA hazardous components were removed ant taken to the RFCA temporary unit for combination with like waste streams for proper disposal
Additional Information:	
TSCA Waste Disposal	
Disposal Site:	BFI Foothills Landfill
Waste Volume (yd^3):	Minor amounts
Additional Information:	Fluorescent ballasts, including non-leaking PCB ballasts, remained in the building and were disposed of with the building demolition debris.
Asbestos Waste Disposal	
Disposal Site:	N/A
Waste Volume (yd^3):	
Additional Information:	No asbestos loads were associated with the strip-out/demolition of B460
Low-Level Waste Disposal	
Disposal Site:	N/A
Waste Volume (yd^3):	
Additional Information:	
Low-Level Mixed Waste Disposal	
Disposal Site:	N/A
Waste Volume (yd^3):	

Type 1 Facility Closeout Report

Additional Information:	
Recycled Material	
Recycle Facility:	N/A
Waste Volume (yd^3):	
Additional Information:	
Property Disposition	
Receiver Locations ***(major items only)*****:**	N/A
Volume (yd^3):	
Weight (tons):	
Additional Information:	

Section D. Approvals

Kaiser-Hill Project Manager — J.M. Swaroop — Name/Signature — 7.18.05 — Date

Instructions for Completion of Type 1 Facility Closeout Report

B460

B460 was a 212,980 square foot, two-story structure built in 1984, the structure was a prefabricated building constructed on a concrete foundation. Exterior walls were constructed of insulated metal panels attached to a steel frame. The ceiling was constructed of metal decking with built-up roofing.

B460 was originally constructed as a manufacturing facility designed to fabricate stainless steel and other non-nuclear parts. B460 housed fabrication operations such as Mechanical Machining, Electrochemical Machining and Grinding, Electro-discharge Machining, and Crush Grinding. A metallurgical laboratory and Hexavalent Chrome Reduction Process were also in the facility.

Non-radioactive process wastes were collected in 4 sump tanks. All tanks were closed in accordance with the "RCRA Closure Plan for B460" (Letter # 96-DOE-05751)

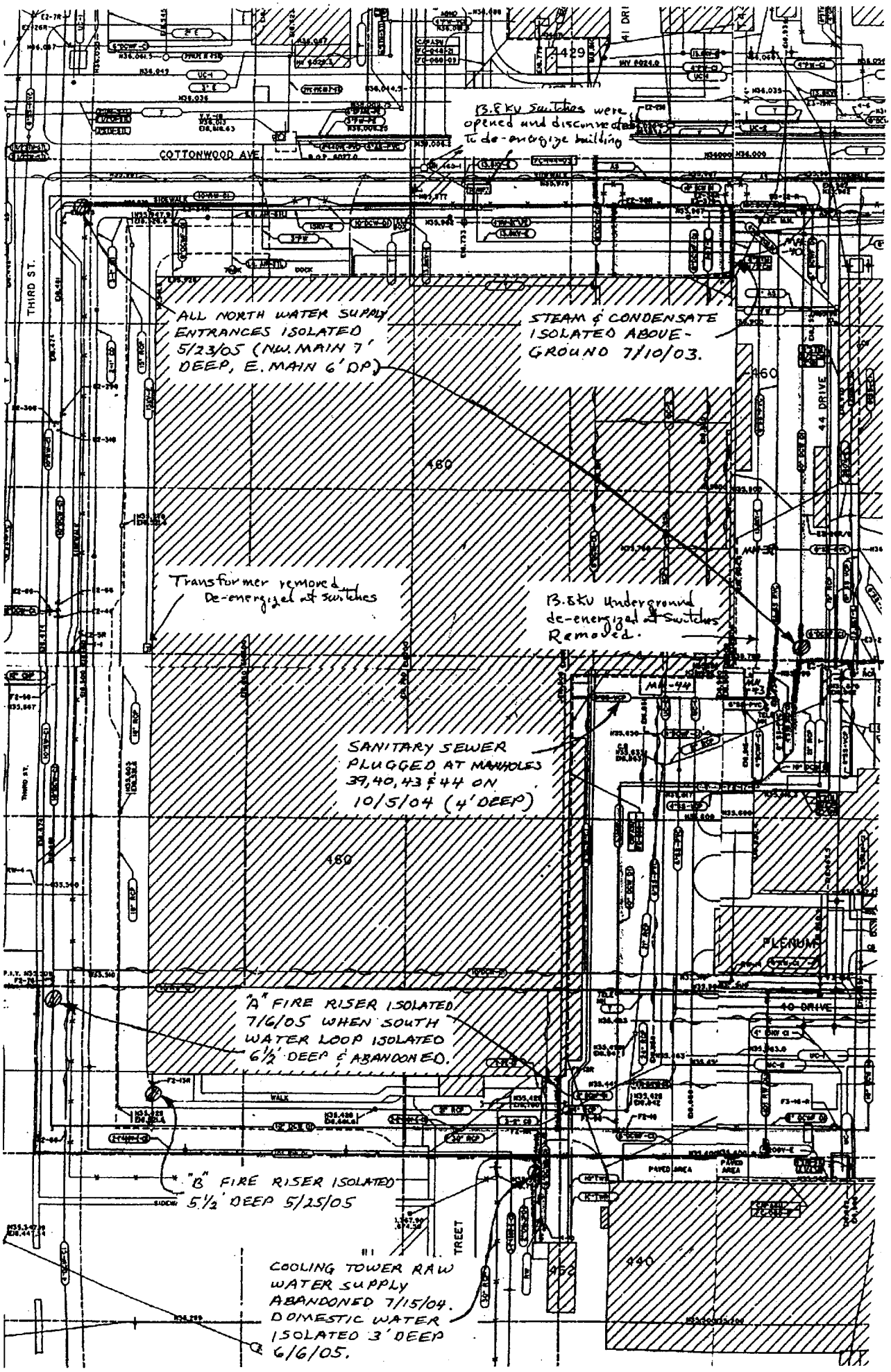
Manufacturing in the facility ended in the mid-1990's, and most of the process equipment was removed. The facility was converted to predominantly administrative offices. In September 2002, the High Bay area was converted to store containerized low-level radioactive, RCRA and TSCA wastes. No repackaging or waste treatment operations were conducted in the facility, and no spills or releases were noted from any of the waste containers. Closure of the Storage Unit was submitted in May 2005 (Letter # 05-00452-057).

Building 460 had the following utilities: electrical, plant water, sanitary, plant steam and a fire protection sprinkler system. All utilities were removed or isolated prior to demolition. B460 was originally connected to the Site process waste system, but was isolated during the 1990's, and was remove from B460 to Valve Vault 18 in 2005. The B460 slab and all integral utility stubs will remain in place, but will be greater than three feet below final grade. Holes were bored through the slab on 10-foot centers to allow for groundwater flow. Approximately 70,000 cubic yards of backfill will be used to bring the area to final contour.

B462

B462 was a 590 square foot cooling tower constructed in 1985 to provide cooling water to B460. B462 was a metal structure elevated above a concrete pad by 8 concrete pedestals. The cooling system consisted of both an open loop and a closed loop system interconnected by a heat exchanger..

Building 462 had the following utilities: electrical and plant water. All utilities were removed to 3' below grade or isolated prior to removal. See attached map for locations.


COTTONWOOD AVE.
THIRD ST.
13.8 KV Switches were opened and disconnected to de-energize building
ALL NORTH WATER SUPPLY ENTRANCES ISOLATED 5/23/05 (NW. MAIN 7' DEEP, E. MAIN 6' DP)
STEAM & CONDENSATE ISOLATED ABOVE-GROUND 7/10/03.
Transformer removed De-energized at switches
13.8 KV Underground de-energized at Switches Removed.
SANITARY SEWER PLUGGED AT MANHOLES 39, 40, 43 & 44 ON 10/5/04 (4' DEEP)
"A" FIRE RISER ISOLATED 7/6/05 WHEN SOUTH WATER LOOP ISOLATED 6½' DEEP & ABANDONED.
"B" FIRE RISER ISOLATED 5½' DEEP 5/25/05
COOLING TOWER RAW WATER SUPPLY ABANDONED 7/15/04. DOMESTIC WATER ISOLATED 3' DEEP 6/16/05.
460
480
440
44 DRIVE
40 DRIVE
PLENUM
MH-44
MH-43
TREET

Revised 05/05

CORRES. CONTROL
INCOMING LTR NO.

02397 RFOS

DUE DATE

ACTION

DIST.	LTR	ENC
BERARDINI, J.H.	X	
BOGNAR, E.S.	X	
BROOKS, L.	X	
CARPENTER, M.	X	
CROCKETT, G. A.	X	
DECK, C. A.	X	
DEGENHART, K. R.	X	
FERRERA, D. W.	X	
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	
LONG, J. W.		
NESTA, S.	X	
SHELTON, D. C.	X	
TUOR, N. R.	X	
WA	X	
W	X	
ZA	X	

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Reviewed for Addressee
Corres. Control RFP

8/8/05 DC
Date By

Ref. Ltr. #

DOE ORDER #
5400.1

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STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

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Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

August 2, 2005

John J. Rampe
Director, Project Management Division
U.S. Department of Energy, Rocky Flats Project Office
12101 Airport Way, Unit A
Broomfield, Colorado 80021-2583

Mr. Stephen Nesta
Environmental Manager
Kaiser-Hill Company, RISS
Rocky Flats Environmental Technology Site
12101 Airport Way, Unit B
Broomfield, Colorado 80021-2583

RE: Closure Summary Report for RCRA Unit 460.1

Dear Mr. Rampe and Mr. Nesta:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the "Division") has received the subject report dated May 5, 2005. The Division agrees that closure activities under Part X-Closure of the Site's State RCRA Permit, specifically permit number CO-04-06-23-01, effective July 23, 2004 were applicable. Further that the activities described in the Unit's Closure Description Document (CDD), approved by the Division on February 4, 2005, have been completed.

Specifically, we accept the Closure Summary Report, which address the secondary containment pans and rollers in the five cargo containers previously located east of Building 460. We also accept the professional engineer certification, submitted in conjunction with an administrative closure, for the floor of the B460 Highbay.

If you have any questions concerning this correspondence, please contact me at 303-692-3328 or Harlen Ainscough at (303) 692-3337.

Sincerely,

David A. Kruchek
Acting Rocky Flats Oversight Unit Leader

cc: M. Aguilar, USEPA Region VIII
D. Miller, AGO
Administrative Record, Mountain View
S. Garcia, City of Broomfield
Gary Morgan, DOE

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CORRES. CONTROL
OUTGOING LTR. NO.
DOE ORDER # 4700.1
05-RF-00452

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LYLE, J.L.		
MARTINEZ, L. A.		
PIZZUTO, V.M.		
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SPEARS, M.S.		
TUOR, N. R.		
BEAN, C.		
DECK, C.		
FOSS, D.		
FRANCIS, M.		
FREIBOTH, C.		
GEIS, A.		
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HUMISTON, T.		
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LAVORATO, K.		
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CLASSIFICATION:

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AUTHORIZED CLASSIFIER SIGNATURE:

Date:

IN REPLY TO RFP CC NO.:

ACTION ITEM STATUS:
☐ PARTIAL/OPEN
☐ CLOSED

LTR APPROVALS:

OP[illegible] TYPIST INITIALS:
SMN:pvt

RF-4[illegible] (Rev 9/94)

KAISER•HILL COMPANY

May 5, 2005 05-00452-05

Mr. Steve Gunderson
Permitting and Compliance Unit Leader
Federal Facilities Program
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

CLOSURE SUMMARY REPORT FOR CLOSURE OF RCRA CONTAINER STORAGE UNIT 460.1 IN BUILDING 460 – SMN-025-05

Dear Mr. Gunderson:

Pursuant to the *Rocky Flats RCRA Part B Permit, Part X, Closure* (June 1997), Kaiser-Hill Company L.L.C. is submitting the attached Closure Summary Report for this unit.

The summary report contains a description of the major closure activities and a declaration that the requirements of the Closure Description Document (CDD) have been fulfilled. Please note that activities conducted under the CDD only addressed the secondary containment pans and rollers in the five cargoes, the floor of the unit (i.e., the floor of B460 highbay) was administratively closed as agreed to in your response dated February 4, 2005.

If you have any questions, please contact Stephen Nesta of Kaiser-Hill Remediation Industrial D&D, Site Services (RISS) at 303-966-6386.

Stephen M. Nesta 05/05/05

Stephen M. Nesta Date
Environmental Manager, K-H RISS

KLM:

Attachment:
As Stated

cc:
H. Ainscough - CDPHE
J. Legare - DOE, RFFO
G. Morgan - DOE, RFFO

Summary Report for Closure of RCRA Container Storage Unit 460.1

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

1.0 PURPOSE

This Summary Report pertains to RCRA closure activities for the RCRA Container Storage Unit 460.1 in Building 460, and is a requirement of Section 1.1 of the Closure Description Document (CDD) for this RCRA Unit (05-RF-00073). 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 Work Packages 460-004. The secondary containment pans and rollers were packaged in containers X29689 and X36808 and managed as LLM waste.

A Professional Engineer conducted the visual inspection of the floor area of RCRA Unit 460.1, in the highbay of Building 460, and certified closure of the unit via clean closure. There were no unanticipated circumstances or events to cause a deviation from the descriptions in the CDD.

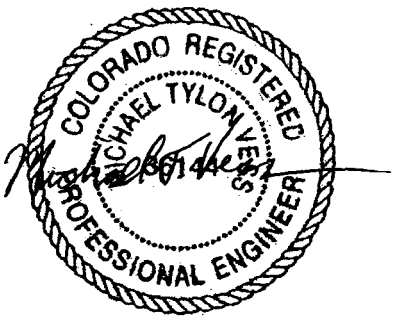
3.0 SUMMARY

The requirements stated in the CDD have been fulfilled.

On March 23, 2005 I performed a visual inspection of the Building 460 highbay area RCRA Permitted Storage Unit 460.1. The unit was very clean and free of any staining that would be indicative of spilled material. A review of the operating history of this unit also confirmed that no spills had taken place in the unit.

I, the undersigned, a State of Colorado Registered Professional Engineer, hereby certify that closure via clean closure of Building 460 highbay area RCRA Permitted Storage Unit 460.1 has been satisfactorily completed.

Professional Engineer seal, signature, and date attesting to closure certification statement:



Michael Tylon Vess, P.E
Colorado P.E. Number 36144
March 29, 2005

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
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Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

February 4, 2004

Mr. Joseph A. Legare, Assistant Manager
Environment and Stewardship
U.S. Department of Energy, RFFO
10808 Highway 93, Unit A
Golden, CO 80403-8200

Mr. Stephen M. Nesta
Environmental Manager
Remediation, Industrial D&D, & Site Services
Kaiser-Hill Company, L.L.C.
Rocky Flats Environmental Technology Site
10808 Highway 93, Unit B
Golden, CO 80403-8200

RE: Approval, *Closure Description Document (CDD) for Closure of RCRA Permitted Container Storage Unit 460.1 in Building 460*

Dear Mr. Legare and Ms. Nesta:

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the "Division") has received and reviewed the subject CDD signed by DOE on January 24, 2005. The CDD is hereby approved.

Considering the short operational history of the unit, the Division agrees that administrative closure, as described in State RCRA Permit CO-04-06-23-01, Permit Condition Part X.D.1.a, Clean Closure Option 1: Unit Review and Inspection, should be adequate for the highbay area of Building 460. As acknowledged, Option 1 must be based on an Operating Record that indicates no releases occurred at any time during the operational period, or quickly mitigated, and also by visual inspection.

Additionally, the Division agrees that Permit Condition Part X.D. 3, Unit Removal without On-Site Treatment should be appropriate for the five cargo container presently located on the east side of Building 460. Specifically, the secondary containment pans and rollers will be size-reduced and disposed as low-level mixed waste. The cargo containers will either be released to PU&D, or disposed as low-level waste, based upon radiological screening. The CDD presents these as future activities; although not indicated in the CDD, a closure summary report must be submitted upon completion of closure.

If you have any questions concerning this correspondence, please contact me at 303-692-3367 or Harlen Ainscough at (303) 692-3337.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

5400

cc: Gary Morgan, DOE
S. Garcia, City of Broomfield
D. Shelton, Kaiser-Hill M.
D. Miller, AGO
M. Aguilar, USEPA Region VIII
Administrative Record, RFETS Bldg. T-130G

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NOV 18 1996 13 AM 10 56 96-DOE-05751

Mr. Joe Schieffelen
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

Dear Mr. Schieffelen:

The United States Department of Energy, Rocky Flats Field Office is submitting the enclosed Resource Conservation and Recovery Act (RCRA) Closure Certification for the Building 460 Process Waste System. The closure certification has been signed and stamped by an independent, Colorado-registered professional engineer, as required by the Building 460 Process Waste System Closure Plan.

The closure was performed in accordance with the approved closure plan; therefore, with this final documentation, Building 460 Process Waste System is hereby clean closed. The Part A application for the Site will be modified to reflect deletion of RCRA Units 39.03, 40.08, 40.09, 40.10, 40.11, 40.12, 40.13, 40.14, and 40.15.

If you have any questions, please contact Dave Grosek, of my staff, at 966-3305.

Sincerely,

Gail Hill

Gail Hill, Acting Group Lead
Regulatory Liaison Group

Enclosure

cc w/enc:
C. Gilbreath, CDPHE
M. Stanley, LATA
V. Orozco, RMRS

cc w/o enc:
D. Grosek, RLG, RFFO
D. Maxwell, ER/WM, RFFO
R. Leitner, K-H

Copy to Reading Room: Yes No

5400

RLG DG
Grosek:dls
11/17/96

RLG
Hill 0518
11/12/96

CERTIFICATION OF RCRA CLOSURE FOR THE BUILDING 460 PROCESS WASTE SYSTEM

September 16, 1996

Prepared for:

Rocky Mountain Remediation Services, L.L.C.
Golden, Colorado 80402-0464

Prepared by:

WASTREN, Inc.
12000 N. Pecos, Suite 250
Westminster, Colorado 80234
(303) 450-0005

TABLE OF CONTENTS

ACRONYMS

CCR	Code of Colorado Regulations
CFR	Code of Federal Regulations
CHWA	Colorado Hazardous Waste Act
DOE	Department of Energy
EPA	Environmental Protection Agency
GPM	Gallons per minute
NDT	Nondestructive Testing
P.E.	Professional Engineer
PQL	Practical Quantitation Limit
PSI	Pounds per square inch
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
ST	Sump Tank

1.0 INTRODUCTION

The purpose of this report is to certify the Resource Conservation and Recovery Act (RCRA) closure of the Building 460 Process Waste System at the Rocky Flats Environmental Technology Site. *WASTREN, Inc.*, has been retained by Rocky Mountain Remediation Services to perform this certification. This report provides the evidence to support the closure determinations by the owner/operator and an independent professional engineer (P.E.) as required by 6 Code of Colorado Regulations (CCR) 1007-3 Section 265.115. The data from lab reports for the rinsate, required for these closure determinations, are incorporated by reference. The closure of the Building 460 Process Waste System was performed in accordance with applicable Colorado Hazardous Waste Act (CHWA) interim status requirements in 6 CCR 1007-3 Part 265 and the approved RCRA closure plan, *RCRA Closure Plan Building 460 Process Waste System* (herein called the Closure Plan) (DOE 1996).

1.1 Historical Overview

Building 460 served as a non-nuclear manufacturing facility at Rocky Flats. Parts and assemblies were made from stainless steel, aluminum, vanadium, copper, gold, silver, magnesium, titanium, Teflon, and other plastics. Building operations included production machining, electrochemical machining and grinding; electric discharge machining; electron beam welding; inert gas tungsten arc welding; nondestructive testing; holographic pressure testing; component integrity testing; calibration; heat treating; brazing; various cleaning processes; and product inspection. Laboratories, testing areas, locker rooms, and other support areas are located on the main floor. Offices, a cafeteria, storage areas, and a mechanical area are located on the second floor mezzanine levels.

The process waste system was closed because the facility is no longer in operation and the system will not be used in the future. The Building 460 Process Waste System includes RCRA Units 39.03 (roll filter table); 40.08, 40.09, 40.10 (above ground holding tanks T-1, T-2, and T-3); 40.11, 40.12, 40.13, 40.14, 40.15 (freestanding open top sump tanks located in below grade concrete pits identified as Sump Tank [ST] 1 through ST-5); and ancillary equipment including dedicated pumps and piping. The system also includes secondary containment for the sump tanks, holding tanks, roll filter, and ancillary equipment.

1.2 Waste Characterization

Process wastes included sodium nitrate, chromium, and sodium hydroxide from the parts cleaning sink and the electrochemical machining process; emulsifiers, developers, fixers, and dye penetrants for the nondestructive testing area; nitric acid and nitradd acid from the "A-line" cleaning process; nitric acid, nitradd acid, phosphoric acid, and glacial acetic acid from the copper cleaning and passivator systems, chromium and oxalic acid from metallurgy cleaning; as well as acids and carbon tetrachloride from the RCRA sink in the materials development laboratory.

2.0 RCRA FACILITY INVESTIGATION

A detailed description of the closure activities can be found in the Closure Plan (DOE 1996). A summary of the closure activities is presented below.

- Removal of Inventory from Tanks
  Inventory was removed from the tanks and ancillary equipment and transferred by tanker truck to Building 374 for treatment.

- Removal of Residual Material from the Ancillary Equipment, Tanks, and Sump Tanks
  The system was soaked overnight with a solution of hot water and detergent which was then recirculated several times. The lines were flushed, and clean water and detergent were again recirculated through the pipes. This was done until the water appeared clean. The cleaning of the system was done one segment at a time.

- Rinsing the System
  The system was purged with hot water and recirculated three times to remove residual detergent prior to introducing the rinse water that was sampled.

- Pressure Washing
  Pressure washing was done with a portable cleaner that used hot water (180-185°F) and provided 3.5 GPM at 3,000 psi. The holding tanks, sump tanks, and roll filter table were pressure washed. Pumps were disassembled and pressure washed as well. The pressure washer was also fed down the 3-inch lines that lead from ST-1 through ST-4 into T-3.

- Cleaning of Secondary Containment
  In-ground concrete pits that contain the ST-1 through ST-4 were lined with synthetic membrane liners made of Hypalon. Hypalon tank liners were removed and pressure washed. No gaps or cracks were found in the concrete pits. The surface of the concrete was sanded, pressure washed, and sealed with two coats of Thorough-Seal. After the sealant cured, two coats of epoxy paint were applied.

  Sump pit 5 and the bermed area containing T-1, T-2, T-3, and the roll filter table were washed with detergent and rinsed with hot water. Based on analytical results from the rinsate sample, the bermed area was washed again using a detergent and hot water mixture. The area was rinsed to remove residual detergent.

  The building floors and walls serve as secondary containment for overhead piping. A review of shift logs and operator interviews indicated that there were no leaks or spills from the overhead piping. As a result, cleaning of secondary containment for the overhead piping was not necessary.

- Sampling
  Water was introduced into the ancillary piping of each segment of the system. Each of the segments was filled and sampled separately.

Some of the segment designations as defined in the Closure Plan were deviated from as explained below:

- Segment 1 (inputs to ST-4) was only partially sampled. The piping into Rooms 115 and 120 was cut and capped off and was not sampled. The lines from the copper cleaning process were not sampled because the system was never used.

- Segment 2 (inputs to ST-3) was not sampled. The A-Line equipment, which was the only input to ST-3, was removed several years ago and transferred to Kansas City under the Non-Nuclear Reconfiguration Program. The temporary Tygon line was managed as hazardous waste.

- Segment 5 included the inputs to T-3 as well as T-3 itself.

- Segment 6 was combined with Segment 8.

- Segment 7 was not sampled because ST-1 through ST-4 were not sampled, ST-5 was included with Segment 8, and T-3 was included with Segment 5.

- Segment 8 did not include the secondary containment bermed area. A separate sample was collected from the bermed area. A separate sample was also collected for the lines from T-1 and T-2 to Valve Vault 18.

The piping leading to ST-1, ST-2, and ST-4, including the Tygon line, was flushed with clean water. The water was not flushed into the sump tanks but into 55-gallon drums with plastic liners that were placed inside the sump tanks. Samples were collected from each drum. The lines from the sump tanks were flushed with clean water into T-3. A sample was collected from T-3. Clean water was introduced into the roll filter table which flowed into ST-5. The water was pumped from ST-5 into T-1 and T-2 and associated piping. The water in T-1 and T-2 was circulated, and the contents from T-2 were transferred into T-1. One sample was collected from T-1. A rinsate sample was also collected from the secondary containment bermed area in Room 140. Based on results of the rinsate data, the bermed area had to be rewashed and resampled. The line from T-1 and T-2 was flushed with clean water to Valve Vault 18 where a sample was collected. See Section 3.2 for a summary of the analytical results.

- Stripout of Debris

The tanks, roll filter table, and ancillary equipment were treated to a clean debris surface as defined in 6 CCR 1007-3 Part 268.45 by pressure washing and rinsing.

As stated in Section 5.2 of the Closure Plan, portions of the system previously storing listed waste or continuing to exhibit any of the characteristics of a hazardous waste, will be managed in accordance with the debris rule (6 CCR 1007-3 Part 268.45). Portions of the system previously storing characteristic hazardous waste that no longer exhibit the characteristic of a hazardous waste, based on the rinsate data, will be managed as nonhazardous waste.

Except for the rinsate sample from the piping between Room 118 and ST-4, no organics were detected in the system. Rinsate samples from the majority of the system indicated the presence of toxicity characteristic metals, which were consistently at concentrations lower than the regulatory levels. As a result, the system (excluding the pipe between Room 118 and ST-4) will be stripped out and managed as nonhazardous waste.

Carbon tetrachloride was detected in the rinsate sample for the piping from Room 118 to ST-4. This piping was cut into approximately 5-foot lengths for visual inspection. A brownish residue was observed on the bottom of the pipe where liquid appeared to have settled. Each length of pipe was pressure washed in an attempt to remove the residue. In viewing the piping after the washing, there was minimal streaking in the pipe. Although there were a few areas where the streaking may be more than 5 percent of a particular square inch, the streaking was not greater than 5 percent of the total surface area. Because this debris was treated by an extraction technology specified in 6 CCR 1007-3 Part 268.45, and does not exhibit the characteristic of a hazardous waste (based on the rinsate data), it will be stripped out and managed as nonhazardous debris (6 CCR 1007-3, Section 268.45(c)).

The above activities were performed to meet the closure performance standards required by the Closure Plan (DOE 1996). RCRA Subpart G, 40 CFR 265.111(b), and the Code of Colorado Regulations (6 CCR 1007-3 Section 265.111(b)) require a closure performance standard that "controls, minimizes, or eliminates [contamination] to the extent necessary to protect human health and the environment." The closure activities demonstrate that contamination has been minimized and applicable protection afforded.

3.0 RCRA CLOSURE CERTIFICATION ACTIVITIES

The following activities were performed by *WASTREN* personnel to certify that closure criteria for the Building 460 Process Waste System were met as defined in the Closure Plan (DOE 1996).

3.1 Verification of Cleaning and Sample Collection

WASTREN, Inc. staff observed and reported the following activities:

November 15, 1995: The floor drains and associated piping in the Electrochemical Machining area (Rooms 141A and B) were filled with the detergent solution and soaked overnight.

November 16, 1995: The pressure washer would not feed soap automatically, but the piping in Room 141D was pressure washed anyway.

November 28, 1995: All of the lines within the Nondestructive Testing (NDT) area (Rooms 151, 151A, 151M, and 151P) were soaking with detergent solution. Suds were visually observed at each drain location including the capped drains. There was a leak in the primary and secondary pipe near ST-2, and the soil appeared contaminated from the leak. The soil closure is deferred, pending building demolition associated with the Rocky Flats Cleanup Agreement (RFCA)(USEPA 1996).

November 29, 1995: ST-4 had been pressure washed and looked very clean as observed from floor level. The floor drains in Rooms 141A and B were covered with polyethylene sheeting to prevent other material from entering. The drain caps and screens were being soaked in a tub to loosen the contamination. Cleaning on ST-4 is not final; recirculation was yet to be done. The pipe leading into ST-4 was visibly stained on the outside.

December 8, 1995: The pipes in the NDT area were soaked and cleaned four times due to the large amount of solids in the piping. There was sand and pea gravel in the primary piping. No breaks were found in the secondary piping, so the most probable source of the sand and gravel was from installation of the original system. The sump tank and sump liner looked very clean when viewed from floor level. The drain openings to one of the darkroom drains and another drain in Room 151A were very clean.

January 10, 1996: ST-1 met clean debris surface requirements. The pressure washer removed glass fibers from the fiberglass. The outside liner surface also met the clean debris surface requirements.

March 28, 1996: The rinsate sample removed from Valve Vault 18 was clear with a thin layer of suds on the top. The other samples taken that day were clear with no soap residue. The piping was rinsed by flushing from the beginning of the segment to a collection point. A review of the records (shift logs) and operator interviews indicated there were no spills from the overhead lines.

April 2, 1996: Reviewed sample results.

June 25, 1996: The 1½-inch polyvinyl chloride schedule 40 pipe from Room 118 to ST-4 had been cut into about 5-foot lengths. Inspection of the inside of the pipes revealed that most had a brownish residue on the bottom of the pipe where liquid had accumulated, which could be scraped off.

June 26, 1996: The pressure washer was used on the lengths of pipe from Room 118. The power washer removed the brownish residue almost entirely. There were a few areas where the streaking would be more than 5 percent of a particular square inch, but the streaking was not greater than 5 percent of the total surface area.

July 25, 1996: Inspected inside and outside of T-1 which had been cut into several pieces. Inspected inside and outside of T-3, ST-4, and a sump tank liner. Randomly selected pieces of pipe from several different areas (not from Room 118). All of the materials inspected were debris rule clean.

3.2 Comparison of Sample Results to Closure Performance Standards

The closure performance standards for the Building 460 Process Waste System, described in Section 5.0 of the Closure Plan, require analysis of rinsate samples for specified organic constituents, pH, and specified toxicity characteristic metals. The laboratory analysis was performed in Building 881. Analytical results for the rinsate samples can be found in lab report number 96J1685. Analytical data from a sample of process waste collected in 1993 were also used, and can be found in lab report number 93T0008. A copy of the lab reports is maintained on site and is available for review.

3.2.1 Organic Constituents

For clean closure in place, the closure performance standard for organic constituents in the rinsate is non-detectable levels of acetone, benzene, carbon tetrachloride, chloroform, and 1,1,1-trichloroethane.

1,1,1-Trichloroethane was not detected in any of the final rinsate samples. Acetone was detected in all of the rinsate samples but below the Practical Quantitation Limit (PQL). Analysis results below the PQL are considered non-detectable concentrations. Therefore, the rinsate met the closure performance standard for acetone and 1,1,1-trichloroethane.

Chloroform was detected in all of the rinsate samples. However, chloroform was found in the trip and equipment blanks at concentrations comparable to the chloroform concentrations in the rinsate samples. In discussions with the Colorado Department of Public Health and Environment, the level of chloroform in the rinsate sample can be subtracted from background levels to show chloroform is not attributable to the hazardous waste that was contained in the system. Therefore, the rinsate met the closure performance standard for chloroform.

Benzene was detected in the rinsate sample that was collected at Valve Vault 18. Benzene was not found in the blanks and therefore, the pipe from Building 460 to Valve Vault 18 does not meet the closure performance standard of clean closure in place. This section of pipe runs underground and will not be stripped out under this Closure Plan, but deferred until building demolition as discussed in the RFCA (USEPA 1996).

Carbon tetrachloride was detected in the rinsate sample collected at ST-4 (Segment 1), and was not found in the blanks. Based on process knowledge, carbon tetrachloride was used in Room 118 and was not used in Room 151L. The piping from Room 118 to ST-4 does not meet the closure

performance standard of clean closure in place for carbon tetrachloride. This section of piping was stripped out and handled as described in Section 2.0.

3.2.2 Characteristic of Corrosivity

The closure performance standard requires that the rinsate cannot exhibit the characteristic of corrosivity as defined in 6 CCR 1007-3, Part 261, Subpart C. Fingerprint analysis results indicated that the pH of the rinsate samples were between 5 and 11. Therefore, the rinsate met the closure performance standard for the characteristic of corrosivity.

3.2.3 Toxicity Characteristic Metals

For clean closure in place, the closure performance standard for metals in the rinsate is levels of arsenic, cadmium, chromium, lead, mercury, and silver at or below the background level plus two standard deviations of that found in the blank (i.e., tap water). None of these compounds were detected in the blank.

The rinsate met the closure performance standard for arsenic and lead because they were not detected in any of the final rinsate samples.

Rinsate results for mercury are not available for ST-2 (Segment 3) because the sample bottle was dropped. However, mercury was not detected in the rinsate samples collected from T-3 and T-1, which were downstream from ST-2. In addition, historical data from a sample of process waste collected from ST-2 in 1993 indicate mercury well below the PQL. Analysis results below the PQL are considered non-detectable concentrations. Mercury was not detected in any of the other rinsate samples. Therefore, the rinsate met the closure performance standard for mercury.

Cadmium, chromium, and silver or combinations thereof, were detected in all of the rinsate samples except from ST-1 (Segment 4). As a result, the closure performance standard of clean closure in place was only met for Segment 4. Each segment, including Segment 4, was stripped out and handled as described in Section 2.0. Portions of the system have floor drains and underground piping and will not be stripped out under this Closure Plan, but deferred until building demolition as discussed in the RFCA (USEPA 1996).

Because the closure performance standard of clean closure in place was not met for the secondary containment bermed area in Room 140, it was rewashed and resampled. The analysis results indicated no detection of the toxicity characteristic metals. Therefore, the rinsate met the closure performance standard.

4.0 CONCLUSIONS AND CLOSURE CERTIFICATION

Based on *WASTREN's* observations and investigations as presented in this report, the RCRA closure performance standards have been met for a partial closure of the Building 460 Process Waste System. The portion of the system not meeting the closure performance standards is the underground pipe within the building and from Building 460 to Valve Vault 18. This portion of the system will be addressed by the RFCA as stated in Section 10.0 of the Closure Plan (USEPA 1996).

The undersigned hereby certifies that the closure of the Process Waste System in Building 460 at the Rocky Flats Environmental Technology Site was performed in accordance with the specifications of the approved closure plan entitled *RCRA Closure Plan Building 460 Process Waste System* dated June 6, 1996 (DOE 1996).

Charles J. Baroch

Professional Engineer

Dr. Charles Baroch, P.E.
WASTREN, Inc.
12000 North Pecos, Suite 250
Westminster, CO 80234

Sept 16, 1996

Date

5.0 SELECT REFERENCES

Code of Colorado Regulations, Title 6, Part 265.

Code of Federal Regulations, Title 40, Part 265.

DOE. 1996. *RCRA Closure Plan Building 460 Process Waste System.* EPA ID No. CO7890010526. U.S. Department of Energy, Rocky Flats Environmental Technology Site. Revised June 6.

USEPA. 1996. *Final Rocky Flats Cleanup Agreement.* Prepared by the U.S. Environmental Protection Agency, Colorado Department of Public Health and Environment, and U.S. Department of Energy for the Rocky Flats Environmental Technology Site. July 19.

	A	B	C	D	E	F	G	H	I	J
1	**Unit No.**	**Building**	**Unit Description**	**Regulatory Status**	**Closure Status**	**Closure Date**	**Closure Document Approval**	**SET**	**Closure document submittal**	**CDPHE approval**
8	7	460	Container Storage	WITHDRAWN - Never installed	WITHDRAWN 12/15/87 (ref. Section A of the 12/15/87 Part B Application) - Proposed cargo container	NA	NA		NA	NA
9	8	460	Acid Dumpster	WITHDRAWN - 90-day unit	WITHDRAWN 2/10/95 (ref. 95-DOE-09197).	NA	NA		Ltr 2/10/95	Verbal Gilbreath 1/18/95
10	9	460	Solvent Dumpster							
59	39.03	460	Fabric Filtration Unit	INTERIM STATUS - CLOSED per the 1991 permit and 6 CCR 1007-3, Part 265	CLOSED in accordance with "RCRA Closure Plan for the B460 Process Waste System" (10/19/95); Closure Certification signed 9/16/96 (ref. 96-DOE-05751, 11/12/96).	9/16/96	6/6/96		CC 11/12/96	PDSR 5/28/05 COR 8/4/05
67	40.08	460	Process Waste Tank T-1	INTERIM STATUS - CLOSED per 6 CCR 1007-3, Part 265	CLOSED in accordance with "RCRA Closure Plan for the B460 Process Waste System" (10/19/95); Closure Certification signed 9/16/96 (ref. 96-DOE-05751, 11/12/96).	9/16/96	CDD 10/19/05 RSOP		COR 8/8/05	PDSR 5/18/05 COR 8/4/05
68	40.09	460	Process Waste Tank T-2							
69	40.10	460	Filter System Collection Tank T-4							
70	40.11	460	Sump Tank ST-1							
71	40.12	460	Sump Tank ST-2							
72	40.13	460	Sump Tank ST-3							
73	40.14	460	Sump Tank ST-4							
74	40.15	460	Sump Tank ST-5							
108	47	460	Electrolyte Recovery Process	WITHDRAWN - Recycle process	WITHDRAWN 12/15/87 (see Section A of the 12/15/87 Part B Application) - Excluded from permit as recycle process	NA	NA		NA	NA

	A	B	C	D	E	F	G	H	I	J
1	Unit No.	Building	Unit Description	Regulatory Status	Closure Status	Closure Date	Closure Document Approval	SET	Closure document submittal	CDPHE approval
525	MS001 subunit 460.1	460	B460 Container Storage	PERMITTED - CLOSED per the 2004 permit CDPHE approved the CSR, ltr dated 5/31/05 CSR submitted on 5/5/05	CSR 5/5/05	CDD 2/4/05 RSOP		CSR 5/5/2005 COR 5/5/05	CSR 5/31/2005 PDSR 5/18/05 COR 8/4/05	