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REVIEWERS Others		
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ASBESTOS NESHAP THOROUGH INSPECTION REPORT AT 2734ZK

Derivative Classifier Review	
Name:Org: K.R. Herzog PFP ENG	•

1

Executive Summary

2	The Plutonium Finishing Plant (PFP) Closure Project is conducting a Comprehensive
3	Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) removal
4	action authorized by DOE/RL-2005-13, Action Memorandum for the Plutonium
5	Finishing Plant Above-Grade Structures Non-Time Critical Removal Action. The work is
6	being implemented in accordance with DOE/RL-2011-03, Removal Action Work Plan for
7	the Deactivation, Decontamination, Decommissioning, and Demolition of the Plutonium
8	Finishing Plant Complex. The 2734ZK Gas Bottle Storage Building is part of the
9	PFP Complex, located in the 200 West Area of the Hanford Site in Washington State.
10	Its demolition is part of the PFP Closure Project.
11	The 2734ZK Gas Bottle Storage Building was a simple lean-to structure composed of
12	cinderblock supporting walls with a metal roof and two aluminum sidewalls. The front
13	was composed of three metal open grid doors that formed compartments for flammable
14	and nonflammable gas storage areas. The building was attached to the north side of the
15	2345Z Building.
16	This building was erected on a concrete slab, and the roof is a single layer of aluminum
17	sheeting. The cinderblocks form the back wall and a separation wall between the
18	flammable gas and nonflammable gas storage areas. The sidewalls (east and west walls)
19	are also made of aluminum. The building is 19 ft 2 in. long and 4 ft wide and 7 ft high to
20	the lowest portion of the roof. The 2734ZK Gas Bottle Storage Building was designed in
21	April 1973 and built in August 1974.
22	Prior to demolition, a thorough inspection in accordance with the asbestos
23	40 CFR 61.145, "National Emission Standards for Hazardous Air Pollutants," "Standard
24	for Demolition and Renovation," was completed by certified Asbestos Hazard
25	Emergency Response Act of 1986 (AHERA) Building Inspectors. The purpose of this
26	inspection was to determine the location, condition, and quantity of any asbestos-
27	containing material (ACM). Based on a walkdown of the building, process knowledge,
28	and sampling of similar structures from the south side of the 2435Z Building, as well as a
29	review of historical files/drawings conducted by a certified AHERA Building Inspector,
30	neither suspect ACM nor known ACM were identified. Therefore, no asbestos sampling
31	was required. All construction materials were either concrete, cinderblock, steel, or

32 material of known composition. All areas of the facility were accessed.

- 1 This report documents results of the 2734ZK Gas Bottle Storage Building inspection.
- 2 Appendix A contains the sample plan for 2734ZK. No ACM was detected during the
- 3 inspection. No suspect ACM was identified that would have required sampling.

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Terms

ACM	asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act of 1986
Cat I	Category I
Cat II	Category II
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
N/A	not applicable
NESHAP	"National Emission Standards for Hazardous Air Pollutants" (40 CFR 61)
PFP	Plutonium Finishing Plant
PACM	presumed asbestos-containing material
RACM	regulated asbestos-containing material
RAWP	removal action work plan
SWIHD	Sitewide Industrial Database
TSI	thermal system insulation

2

1 Introduction

- 2 The 2734ZK Gas Bottle Storage Building was designed in April 1973 and constructed in August 1974.
- 3 The 2734ZK Gas Bottle Storage Building is 19 ft 2 in. long and 4 ft wide with an 8 ft eave height. This
- 4 building was used by the Plutonium Finishing Plant (PFP) to store flammable and nonflammable gasses.

5 The 2734ZK Gas Bottle Storage Building is part of the PFP Complex located in the 200 West Area of the

- 6 Hanford Site in Washington State. The Hanford Site is owned by the U.S. Department of Energy, and the
- 7 PFP Complex is currently being operated by CH2M HILL Plateau Remediation Company.
- 8 The PFP Closure Project is conducting a *Comprehensive Environmental Response, Compensation, and*
- 9 Liability Act of 1980 (CERCLA) removal action authorized by DOE/RL-2005-13, Action Memorandum
- 10 for the Plutonium Finishing Plant Above-Grade Structures Non-Time Critical Removal Action. Work is
- 11 being implemented in accordance with DOE/RL-2011-03, *Removal Action Work Plan for the*
- 12 Deactivation, Decontamination, Decommissioning, and Demolition of the Plutonium Finishing Plant
- 13 *Complex*, hereinafter called the removal action work plan (RAWP).
- 14 Demolition of the 2734ZK Gas Bottle Storage Building will be conducted as part of the CERCLA
- 15 removal action. The CERCLA RAWP (DOE/RL-2011-03) identifies substantive requirements from 40
- 16 CFR 61, "National Emission Standards for Hazardous Air Pollutants" (NESHAP), regulations as
- 17 applicable or relevant and appropriate requirements to the work being performed. This includes the
- requirement to perform a thorough inspection to identify, quantify, and describe all friable Category I
- 19 (Cat I) and Category II (Cat II) asbestos-containing material (ACM) affected by demolition. This report
- 20 documents the results from that inspection of the 2734ZK Gas Bottle Storage Building.

21 **1.1 2734ZK Gas Bottle Storage Building**

- 22 The 2734ZK Gas Bottle Storage Building was constructed in 1974 and is approximately 76 ft². The floor
- plans are shown in Figures 1, 2, and 3 and illustrate the simple lean-to structure of this building.
- 24 This building was erected on a concrete slab. The roof is a single layer of aluminum sheeting.
- 25 Cinderblocks form the back wall and a separation wall between the flammable gas and nonflammable
- 26 gas storage areas (Figure 4). The sidewalls (east and west walls) are made of aluminum, as is the
- 27 roof. The building is 19 ft 2 in. long and 4 ft wide and 7 ft to the lowest portion of the roof.
- 28 The 2734ZK Building was designed in April 1973 and built in August 1974. This building was not
- 29 insulated and has simple 110 V lights.

30 1.2 2734ZK Building Interior

- The 2734ZK Gas Bottle Storage Building details are shown in Figures 5 through 9, was last used to support 2345Z Building operations. The building contained no finished walls, ceiling, or floor, and the
- building was not insulated. The cinderblocks were hollow.
- 34 An asbestos sample plan was developed for this building following the PFP standard asbestos inspection
- 35 format. A copy of the sample plan is included in Appendix A. A walkdown of the building confirmed its
- 36 simple construction. The electrical system was 110 V with nonasbestos wiring. A records search revealed
- 37 no historical samples for 2734ZK. Based on this review, no suspect ACM was identified, and therefore no
- 38 samples were taken.





5

Note: Nonflammable storage to the right of the photograph.





Figure 5. Photograph of Nonflammable Gas Storage Interior; Back Wall (Cinderblock), Sidewall (Aluminum)



Figure 6. Close Up of Stenciling on Sidewall (Same Material Used for the Roof)

Aluminum Sheets

Aluminum sheets were used for the roof and sidewalls of 2734ZK as shown in these photographs. The aluminum sheets were attached to metal support studs.





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Figure 7. Exterior; West Wall



Figure 8. Flammable Gas Storage Area, 2734ZK



16 during demolition)

- 17 Cat I or Cat II ACM that has become regulated asbestos-containing material (RACM) based ٠ 18 on condition
- 19 Cat I or Cat II ACM that can become RACM, based on planned demolition techniques
- 20 Suspect ACM that was determined (through inspection or sampling and analysis) not to be ACM

2.1 Description of Inspection and Sampling

- 2 Design drawings and other existing information were reviewed to determine what building materials were
- 3 used at the time of construction and whether any renovations had been made. A search was conducted to
- 4 determine if any past asbestos survey or laboratory information was available. No renovations or past
- 5 asbestos surveys were found. No historical sample data exist for this building.
- 6 In February 2016, visual inspections were conducted by certified AHERA Building Inspector
- 7 T.A. Hopkins (copies of AHERA Inspector Certifications are provided in Appendix B). The purpose of
- 8 the visual inspection was to identify all suspect ACM and all suspect materials that would require
- 9 sampling and analysis. For ACM and suspected ACM, or suspect material, the following information
- 10 would need to be determined:
- 11 Asbestos classification (miscellaneous, surfacing material, or thermal system insulation)
- 12 Asbestos type (RACM, Cat I, or Cat II)
- 13 Quantity (square feet or linear feet)
- 14 Condition (poor/good)
- 15 Location
- Sample density (for materials not handled as suspected ACM) as prescribed by AHERA
 (homogeneous/nonhomogeneous)
- 18 Accessibility for sampling
- 19 After the walkdowns, a sampling plan was created (Appendix A). Based on the walkdown, records
- 20 review, and process knowledge of the AHERA Certified Inspector, no suspect ACM was identified.
- 21 Therefore, no sampling was conducted. In the opinion of the AHERA Inspector, there is no asbestos
- 22 associated with these structures. No further evaluation will be required.

23 **2.1.1 Description of Thorough Inspection Process**

- 24 The RAWP (DOE/RL-2011-03) requires that, "Prior to the commencement of the demolition, a thorough
- 25 inspection of the affected structure will be performed and documented for the presence of asbestos,
- including Category I and Category II non-friable ACM." The process of completing a thorough inspectionof this building consisted of the following actions:
- As walkdowns of all areas were conducted, the inspector identified various materials that were
 suspected of containing asbestos. Walkdowns were completed in February 2016. Special attention
 was given to areas for which access was restricted (e.g., suspended ceilings) and would require
 additional means of access for the purposes of inspection. Notes were taken during the walkdown
 identifying sampling needs (e.g., inaccessible areas, special access requirements [confined spaces and
 ladders], removal of access plates/panels, and electrical isolations).
- Suspect building materials were evaluated for homogeneity (e.g., homogeneous areas).
- An asbestos sample plan was developed for this facility (Appendix A). The sample plan enabled the
- 36 inspector to review the building in a systematic process and covered the following items: floors,
- 37 walls, ceiling, void spaces, electrical wiring/panels, caulking, wall patches, gaskets/packings, doors,
- 38 coving, thermal system insulation, and miscellaneous items.

- Based on the record review, sample plan, and process knowledge, asbestos sampling was not indicated. No further evaluation is required.
- This report will serve as the documentation to that evaluation.

4 2.2 Historical Asbestos Analytical Data

5 Asbestos bulk sampling has been conducted at PFP for many years in support of deactivation activities

6 under CERCLA. Sample collection was mainly performed upon request in support of specific project

7 activities (e.g., facility modifications and mechanical/electrical isolation). All sample collections were

8 performed by insulators certified as AHERA Building Inspectors.

9 No historical samples were taken in these structures.

10 **2.3** Asbestos Characterization Results

- 11 Based on the walkdown, process knowledge, and the experience of the AHERA Inspector, no samples
- 12 were required to characterize this facility as having No Asbestos Detected. Floors are concrete; the
- sidewalls and roof are aluminum; and the back wall and support wall are cinderblock. Electrical wiring isnonasbestos.
- 15 No ACM is associated with the 2734ZK Gas Bottle Storage Building.

16 **3 References**40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*. Available at: http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol8/xml/CFR-2010-title40-

- 18Available at: http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol8/xml19vol8-part61.xml
- 20 61.145, "Standard for Demolition and Renovation."
- Asbestos Hazard Emergency Response Act of 1986, 15 USC 2641, et seq. Available at:
 <u>http://www.gpo.gov/fdsys/pkg/USCODE-2009-title15/html/USCODE-2009-title15-chap53-</u>
 subchapII.htm.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq.,
 Pub. L. 107-377, December 31, 2002. Available at: <u>http://epw.senate.gov/cercla.pdf</u>.
- DOE/RL-2005-13, 2005, Action Memorandum for the Plutonium Finishing Plant Above-Grade
 Structures Non-Time Critical Removal Action, Rev. 0, U.S. Department of Energy, Richland
 Operations Office, Richland, Washington. Available at:
 <u>http://pdw.hanford.gov/arpir/pdf.cfm?accession=DA00914134</u>.

30 DOE/RL-2011-03, 2014, Removal Action Work Plan for the Deactivation, Decontamination,

- 31 Decommissioning, and Demolition of the Plutonium Finishing Plant Complex, Rev. 0,
- 32 U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at:
- 33 <u>http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0084836</u>.

2

1	Appendix A
2	2734ZK Asbestos Sampling Plan

2

Table A-1. 2734ZK Asbestos Sampling Plan Details

	Sample Planning				Field Execution						
					Veri	ification					
System	Sampling Directions	Location (e.g., Room or Area)	Sampling Required? (Y/N)	Number of Samples	Present (Y/N)	Not Accessible (Y/N)	SWIHD No	Field Description	Total Number of Samples Taken		
Sample Location: T walls constructed wi data (file search, pho Photographs will be	The 2734ZK Gas Bottle Storage Building is attached to the no ith aluminum sheeting, as is the roof. The back wall and a sep otographs, engineering plans, etc.) and walkdowns completed taken of each sample location and a unique SWIHDs number	rth wall of the 23 aration wall (betw in March 2016. A will be assigned	94-5Z Building, ween flammable An AHERA trai to each room fo	near the 14A A e and nonflamm ned inspector or each sample	Airlock. This b nable gas stora will verify acc phases.	building is approx age areas) are ma uracy during the	imately 19 by 4 de of cinderbloc sampling event	ft (76 ft ²). The 2734ZK Gas Beck. The building was used to ho and is authorized to modify this	ottle Storage Buildir use gas bottles and l plan in the field as	ng i has rec	
Floors (General Di	rections): Identify flooring material. If tile or linoleum, sched	ule for sampling.	Exceptions: pro	cess knowledg	ge, previous sa	mpling, or determ	nined to be PAC	M because of radiological cond	itions.		
Bare Concrete Floor	Bare concrete floor with a metal grate.	Interior 2734ZK	No	N/A	Yes	No	N/A	N/A	N/A		
Walls (General Dir	rections): Identify wall construction material; sample if anything	ng other than con	crete.								
	Cinderblock, no sampling required. Previous sampling of similar structures, (i.e., 2734ZA and 2734ZC, 234-5Z, 2729Z have shown no vermiculite to be present. Using process knowledge, no further sampling was required.	Interior 2734ZK	No	N/A	Yes	No	N/A	Cinderblock, no sampling required	N/A		
Ceiling–Directions:	Sheet aluminum, no sampling required.						·		-		
	Sheet aluminum, no sampling required.	Interior 2734ZK	No	N/A	N/A	N/A	N/A	Sheet aluminum, no sampling required	N/A		
Roof (General Dire	ections): Area must be investigated for various ACM items (e.g	g., sprayed on inst	ulation, textured	l coating, coate	d piping, and o	coated ducting).			-		
Roof Visual Inspection	Roof is constructed of sheet aluminum.	Exterior	No	N/A	N/A	N/A	N/A	Sheet aluminum, no sampling required	N/A		
Electrical/Wire and or panels for presence (need to know how r	d Panels (Directions): PRIOR TO SAMPLING ANY ELECTICE of asbestos. Project to make determination (sample or treat a much wire is in place and its condition.)	RICAL MATER	IAL (WIRE/PA Project wants to	NELS/COMPO leave the wiring	ONENTS), TH ng in place dui	IE SYSTEM MUS	ST BE COLD A he Project must	ND DARK AND VERIFIED A determine: (1) whether the wire	S SUCH BY AN EI is ACM or not, or (LEO (2) J	
Electrical Wiring	Electrical wire: sample each type of wire and estimate the quantity of material. Simple 110 volt lighting system. View of wiring required. / Wire is rubber coated, no sampling required	Interior 2734ZK	No	N/A	Yes	No	A	Wire is rubber coated, no sampling required	N/A		
Caulking: Sample e	each type of caulk. Miscellaneous each type of caulk; two sam	ples.					·		-		
-	None	Interior 2734ZK	No	N/A	No	No	N/A	None	N/A		
Wall Patches: Ident will be included in a	ify all areas where pipe penetrations through wall have been p justification to EPA for leaving the patches during demolitio	batched. If results	s show material	is predominan	tly asbestos, h	andle all remainin	ng patches as PA	ACM. If that determination is m	ade, the inspector w	vill	
-	None	Interior 2734ZK	No	N/A	No	No	N/A	None	N/A		
Doors: Project to ma	ake determination (sample or treat as PACM). Project must de	etermine how to r	nanage these do	ors. Options in	nclude removi	ng prior to demol	ition, seeking a	justification to EPA to leave du	ring demolition or s	sam	
-	Corrugated metal	Exterior	No	N/A	N/A	N/A	N/A	Corrugated metal, no sampling required	N/A		
										-	

Date Sampled	Homogenous Material?	Condition of Material Sampled (Good or Poor)	Extent of Material Sampled (square feet or linear feet)			
g is a lean-to st as a single laye required. Samp	ructure made of cir er metal roof. This s ling to be conducte	iderblock with the ampling plan is ba d by an AHERA-co	west and east sed on historical ertified inspector.			
	l	L				
N/A	N/A	N/A	N/A			
N/A	N/A	N/A	N/A			
N/A	N/A	N/A	N/A			
N/A	N/A	N/A	N/A			
ECTRICIAN.	Evaluate electrical wire is PACM and a	wires from conduit, pply for a justificat	, junction boxes ion from EPA			
N/A	N/A	N/A	N/A			
N/A	N/A	N/A	N/A			
ill have to ident	tify all patches (size	e and number). Thi	s information			
N/A	N/A	N/A	N/A			
ample each doo	r. Identify each doo	or and its location.				
	•					
N/A	N/A	N/A	N/A			

Table A-1. 2734ZK Asbestos Sampling Plan Details

Sample Planning				Field Execution									
					Verification								Extent of
System	Sampling Directions	Location (e.g., Room or Area)	Sampling Required? (Y/N)	Number of Samples	Present (Y/N)	Not Accessible (Y/N)	SWIHD No	Field Description	Total Number of Samples Taken	Date Sampled	Homogenous Material?	Condition of Material Sampled (Good or Poor)	Sampled (square feet or linear feet)
Miscellaneous: Look	c for PACM not previously identified in this sampling plan. I	f present, sample	and record mat	erial sampled.									
_	None	Interior 2734ZK	No	N/A	No	No	N/A	None	N/A	N/A	N/A	N/A	N/A
TSI Piping: If TSI is present, confirm that it is scheduled for abatement prior to demolition.													
_	None	Interior 2734ZK	No	N/A	No	No	N/A	None	N/A	N/A	N/A	N/A	N/A

Notes: All terms used in table are defined in the main Terms list.

All sampling excursions will be (no exceptions) conducted by a certified AHERA Building Inspector who will adhere to all regulatory requirements.

All sampling plans have been developed by a certified AHERA Building Inspector using historical drawings, documents, and photographs as well as interviews with engineers and subject matter experts.

During the sampling campaign, the certified AHERA Building Inspector, while in the field, has the latitude to modify the plan, as needed.

1	Appendix B
2 3	AHERA Certifications

2

Certificate of Completion This is to certify that Course Presented By R. H. Welch, Inc. James M. Leary AHERA Building Inspector Refresher Has satisfactory Completed 24 hours of Initial training as an AHERA Building Inspector R.H. Welch, Inc. In compliance with TSCA Title II AHERA 40 CFR Part 763 & Certificate # RHW-BI-15-005 Missouri State RSMo 643.230 Aichael J Course Completion Date: 2-19-15 Refresher Required By: 2-19-16 R.H. Welch Inc. Instructor Consultant 96902 E. Kaittyn Rd. Kennewick, WA 99338 m.j.moore@frontier.com Certificate of Completion This is to certify that Course Presented By R. H. Welch, Inc. James M. Leary AHERA Project Designer Refresher Has satisfactory Completed 24 hours of Initial training as an AHERA Project Designer R.H. Welch, Inc. In compliance with TSCA Title II AHERA 40 CFR Part 763 & Missouri State RSMo 643.230 Certificate # RHW-PD-15-007 Robert H. Welch PhD (ABD Course Date: 3-31-15 - 4-2-15 HUSE Refresher Required By: R.H. Welch, Inc. Safety Engineer/Consultant 4-2-16 Certificate of Completion This is to certify that William G. Cox Course Presented By R. H. Welch, Inc. **AHERA Building Inspector Refresher** Has satisfactory Completed 24 hours of Initial training as an **AHERA Building Inspector** In compliance with TSCA Title II AHERA 40 CFR Part 763 & R.H. Welch, Inc. Missouri State RSMo 643.230 Certificate # RHW-BI-15-003 Michael h Moory Course Completion Date: 2-19-15 Instructor/Consultant R.H. Welch, Inc. Refresher Required By: 2-19-16 96902 E. Kaitlyn Rd. Kennewick, WA 99338 m.j.moore@frontier.com Certificate of Completion This is to certify that Course Presented By R. H. Welch, Inc. William G. Cox AHERA Project Designer Refresher Has satisfactory Completed 24 hours of Initial training as an AHERA Project Designer in compliance with TSCA Title B AHERA 40 CFR Part 763 & R.H. Welch, Inc. Missouri State RSMo 643.230 Certificate # RHW-PD-15-004 Robert H. Welch PhD (ABD Course Date: 3-31-15 - 4-2-15 kelch Refresher Required By: Safety Engineer/Consultant 4-2-16 R.H. Welch, Inc.



B-2