Title 40 CFR Part 191
Subparts B and C
Compliance Recertification Application 2026
for the
Waste Isolation Pilot Plant

Appendix DATA-2026
Attachment B: WIPP Waste Containers and Emplacement

United States Department of Energy
Waste Isolation Pilot Plant

Carlsbad Field Office
Carlsbad, New Mexico

Appendix DATA-2026
Attachment B: WIPP Waste Containers and Emplacement

TABLE OF CONTENTS

DATA-B-1.0 AUTHORIZED WASTE EMPLACEMENT CONTAINERS 1
DATA-B-1.1 Container Descriptions 1
DATA-B-1.2 Dunnage Containers 1
DATA-B-1.3 Payload Descriptions 1
DATA-B-1.3.1 55-Gallon Drum 2
DATA-B-1.3.2 85-Gallon Drum (Short) 3
DATA-B-1.3.3 85-Gallon Drum (Tall) 5
DATA-B-1.3.4 100-Gallon Drum 6
DATA-B-1.3.5 SC-30G1 Shielded Container 8
DATA-B-1.3.6 SC-30G2 Shielded Container 9
DATA-B-1.3.7 SC-30G3 Shielded Container 11
DATA-B-1.3.8 SC-55G1 Shielded Container 12
DATA-B-1.3.9 SC-55G2 Shielded Container 14
DATA-B-1.3.10 Standard Large Box 2 15
DATA-B-1.3.11 Standard Waste Box 17
DATA-B-1.3.12 Ten-Drum Overpack 18
DATA-B-1.3.13 Remote-Handled Transuranic Waste 72B Canister 20
DATA-B-1.4 Emplacement Configurations 22

DATA-B-2.0 REFERENCES 24

LIST OF TABLES

Table DATA-B-1. 55-gal Drum Specifications 2
Table DATA-B-2. 85-gal Drum (Short) Specifications 4
Table DATA-B-3. 85-gal Drum (Tall) Specifications 5
Table DATA-B-4. 100-gal Drum Specifications 7
Table DATA-B-5. SC-30G1 Shielded Container Specifications 8
Table DATA-B-6. SC-30G2 Shielded Container Specifications 10
Table DATA-B-7. SC-30G3 Shielded Container Specifications 11
Table DATA-B-8. SC-55G1 Shielded Container Specifications 13
Table DATA-B-9. SC-55G2 Shielded Container Specifications 14
Table DATA-B-10. SLB2 Specifications 16
Table DATA-B-11. SWB Specifications 17
Table DATA-B-12. TDOP Specifications 19
Table DATA-B-13. RH-TRU Waste Canister Specifications 20

LIST OF FIGURES

Figure DATA-B-1. 55-gal Drum Components (U.S. DOE 2022) 3
Figure DATA-B-2. 85-gal Drum (Short) Components (U.S. DOE 2022) 4
Figure DATA-B-3. 85-gal Drum (Tall) Components (U.S. DOE 2022) 6

Figure DATA-B-4. 100-gal Drum Components (U.S. DOE 2022) 7
Figure DATA-B-5. SC-30G1 Shielded Container Components (U.S. DOE 2022) 9
Figure DATA-B-6. SC-30G2 Shielded Container Components (U.S. DOE 2022) 10
Figure DATA-B-7. SC-30G3 Shielded Container Components (U.S. DOE 2022) 12
Figure DATA-B-8. SC-55G1 Shielded Container Components (U.S. DOE 2022) 13
Figure DATA-B-9. SC-55G2 Shielded Container Components (U.S. DOE 2022) 15
Figure DATA-B-10. SLB2 Components (U.S. DOE 2010a, NMED 2026) 16
Figure DATA-B-11. SWB Components (U.S. DOE 2022) 18
Figure DATA-B-12. TDOP Components (U.S. DOE 2022) 19
Figure DATA-B-13. RH-TRU Waste Canister Components (U.S. DOE 2015b) 21
Figure DATA-B-14. CH-TRU Waste Emplacement Layout (U.S. DOE 2025) 22
Figure DATA-B-15. CH and RH-TRU Waste Emplacement (NMED 2026) 23

ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CH	contact-handled
CH-TRU	contact-handled transuranic
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
gal	gallon
MgO	magnesium oxide
mm	millimeter
RH	remote-handled
RH-TRU	remote-handled transuranic
SC	Shielded Container
SLB2	Standard Large Box 2
SWB	Standard Waste Box
TRAMPAC	Transuranic Waste Authorized Methods for Payload Control
TDOP	Ten-Drum Overpack
TRU	transuranic

DATA-B-1.0 AUTHORIZED WASTE EMPLACEMENT CONTAINERS

DATA-B-1.1 Container Descriptions

The following containers are identified as outer containment vessels for waste emplacement in the repository. These containers are derived from the Addition of Four New Shielded Containers (U.S. DOE 2023), Contact-Handled Transuranic (CH-TRU) Waste Authorized Methods for Payload Control (CH-TRAMPAC, U.S. DOE 2022), Remote-Handled Transuranic Waste Authorized Methods for Payload Control (RH-TRAMPAC, U.S. DOE 2015b), and TRUPACT-III TRU Waste Authorized Methods for Payload Control (TRUPACT-III TRAMPAC, U.S. DOE 2010a):

- 55-gallon (gal) Drum
- 85-gal Drum (Short)
- 85-gal Drum (Tall)
- 100-gal Drum
- Shielded Container (SC)-30G1
- SC-30G2 Shielded Container
- SC-30G3 Shielded Container
- SC-55G1 Shielded Container
- SC-55G2 Shielded Container
- Standard Large Box 2 (SLB2)
- Standard Waste Box (SWB)
- Ten-Drum Overpack (TDOP)

  RH-TRU 72-B Waste Canister

DATA-B-1.2 Dunnage Containers

Dunnage containers are empty containers used to complete a shipping configuration, such as the seven-pack, if too few containers that meet transportation requirements are available. For emplacement purposes in the repository, the 55-, 85-, and 100-gal drums, SWB, SC-30G1, SC-30G2, and SC-55G1 or shielded containers can be used as dunnage containers. The SC-30G3, and SC-55G2, TDOP, SLB2, and the Remote-Handled Transuranic (RH-TRU) Waste Canister are not used as dunnage containers for shipping purposes.

DATA-B-1.3 Payload Descriptions

This section gives a brief description of each payload container and its configuration for emplacement. This description also includes a figure and a table for each container. These descriptions are derived from the Addition of Four New Shielded Containers (U.S. DOE 2023), CH-TRU Waste Authorized Methods for Payload Control (CH-TRAMPAC, U.S. DOE 2022), Nuclear Criticality Safety Evaluation for CH-TRU Waste Containers at the Waste Isolation Pilot Plant (U.S. DOE. 2015a), RH-TRU Waste Authorized Methods for Payload Control (RH-TRAMPAC, U.S. DOE 2015b), TRUPACT-III TRU Wate Authorized Methods for Payload Control (TRUPACT-III TRAMPAC, U.S. DOE 2010a) and Nuclear Criticality Safety Evaluation for RH-TRU Waste Containers at the Waste Isolation Pilot Plant (U.S. DOE 2010b).

DATA-B-1.3.1 55-Gallon Drum

The 55-gal drum is shipped in a seven-pack configuration and is normally emplaced in the repository in the same configuration but can be emplaced as an individual unit should the need arise. A single drum can be used for collecting and storing derived waste. The drum specifications are provided in Table DATA-B-1. An illustration of the 55-gal drum components is provided in Figure DATA-B-1.

Table DATA-B-1. 55-gal Drum Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	33 ¼	35	845	889
Diameter	22 ½	24	572	610

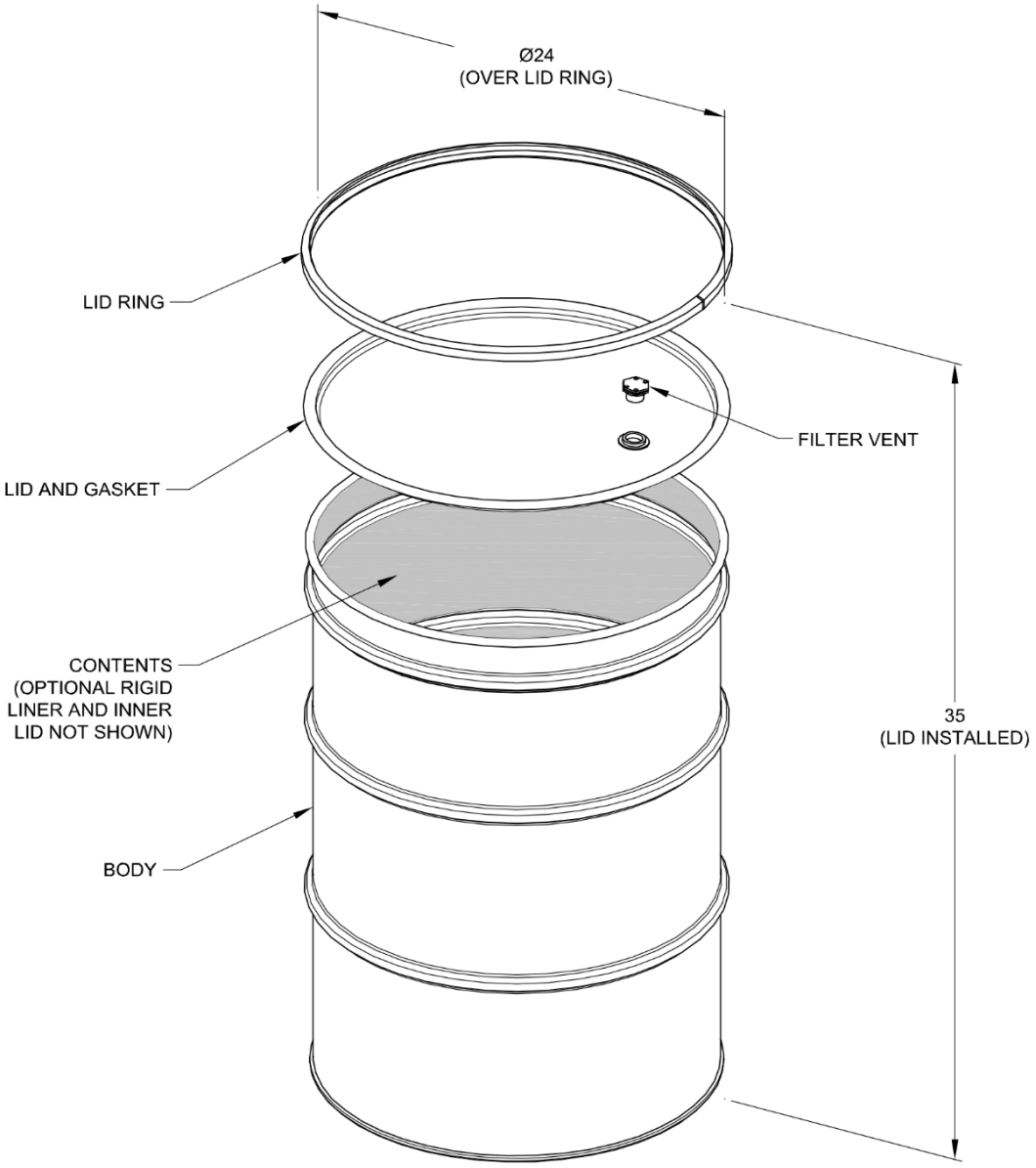


Figure DATA-B-1. 55-gal Drum Components (U.S. DOE 2022)

DATA-B-1.3.2 85-Gallon Drum (Short)

The 85-gal drum (short) is shipped in a four-pack configuration and is normally emplaced in the repository in the same configuration but can be emplaced as an individual unit should the need arise. A single drum can be used for collecting and storing derived waste. The drum specifications are provided in Table DATA-B-2. An illustration of the 85-gal drum (short) components is provided in Figure DATA-B-2.

Table DATA-B-2. 85-gal Drum (Short) Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	33 ¼	35	845	889
Diameter	27 ⅛	29 ¾	689	756

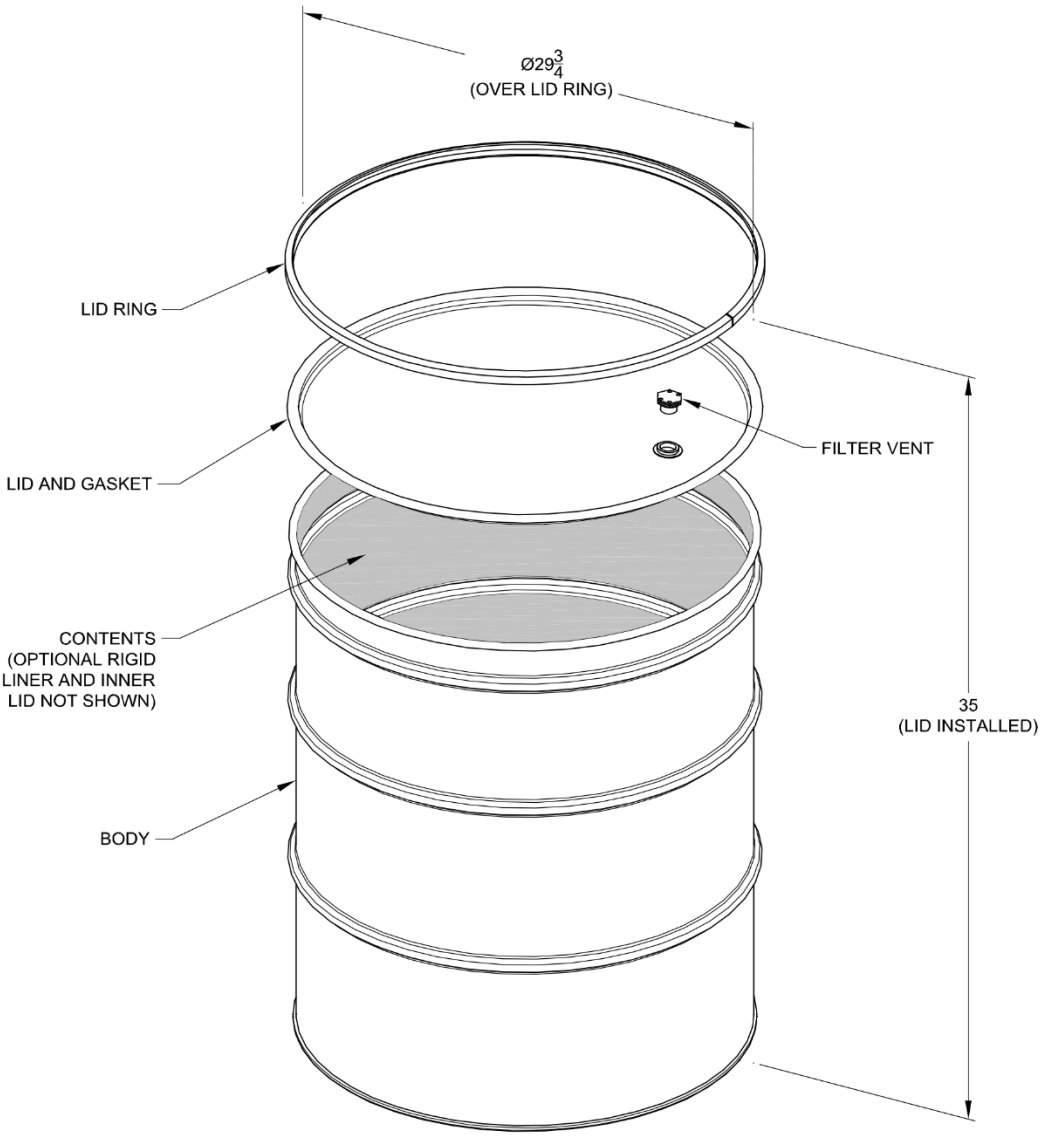


Figure DATA-B-2. 85-gal Drum (Short) Components (U.S. DOE 2022)

DATA-B-1.3.3 85-Gallon Drum (Tall)

The 85-gal drum (tall) is shipped in a four-pack configuration and is normally emplaced in the repository in the same configuration. It is also used for overpacking 55-gal drums that are individually emplaced in the repository. A single drum can be used for collecting and storing derived waste. The drum specifications are provided in Table DATA-B-3. An illustration of the 85-gal drum (tall) components is provided in Figure DATA-B-3.

Table DATA-B-3. 85-gal Drum (Tall) Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	38 ¼	40 ¼	972	1,022
Diameter	26	28 ⅝	660	728

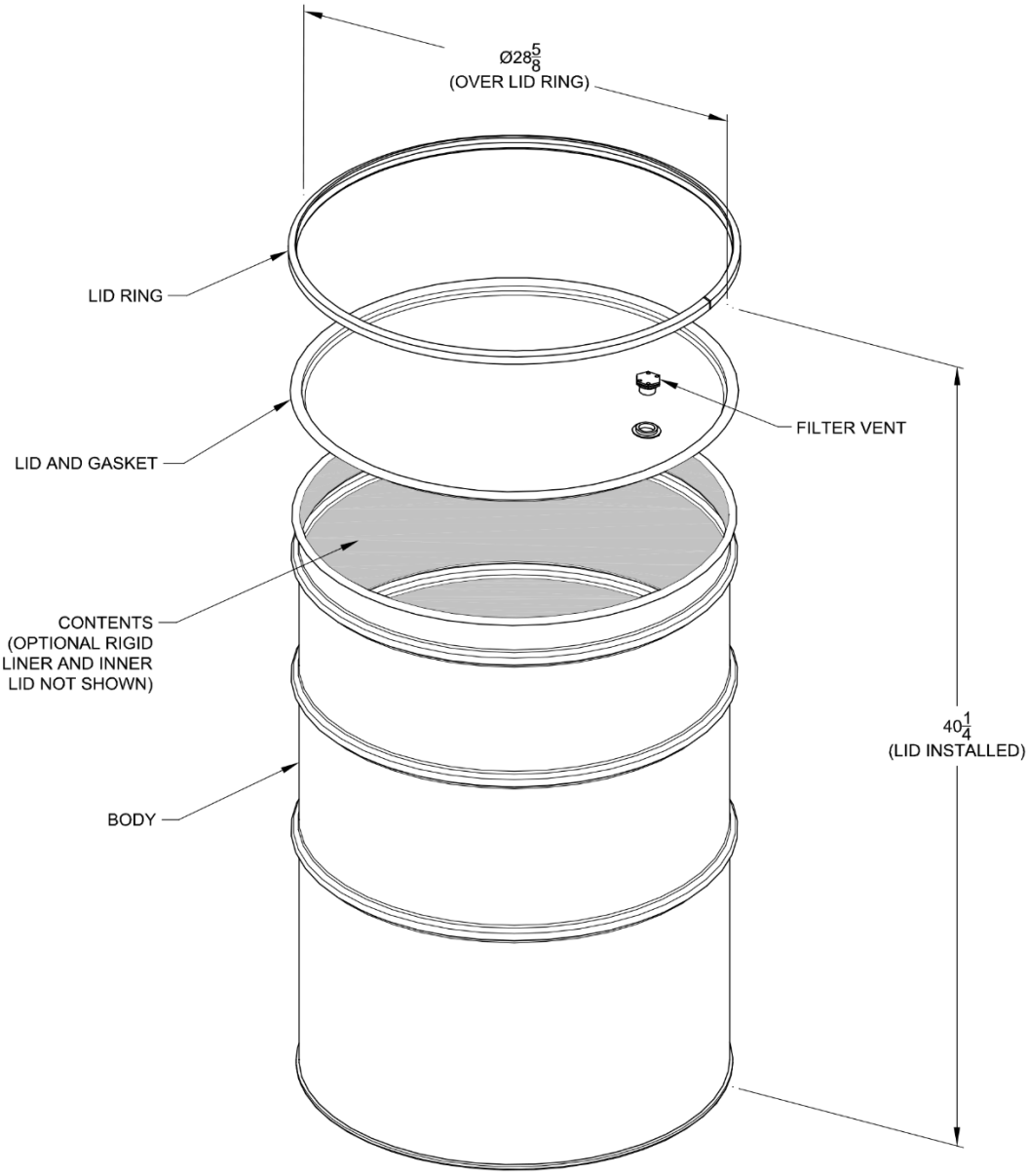


Figure DATA-B-3. 85-gal Drum (Tall) Components (U.S. DOE 2022)

DATA-B-1.3.4 100-Gallon Drum

The 100-gal drum is shipped in a three-pack configuration and is normally emplaced in the repository in the same configuration. The 100-gal drum can be emplaced as an individual unit should the need arise. The drum specifications are provided in Table DATA-B-4. An illustration of the 100-gal drum components and emplacement configuration is provided in Figure DATA-B-4.

Table DATA-B-4. 100-gal Drum Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	33	35	838	889
Diameter	30	32	762	813

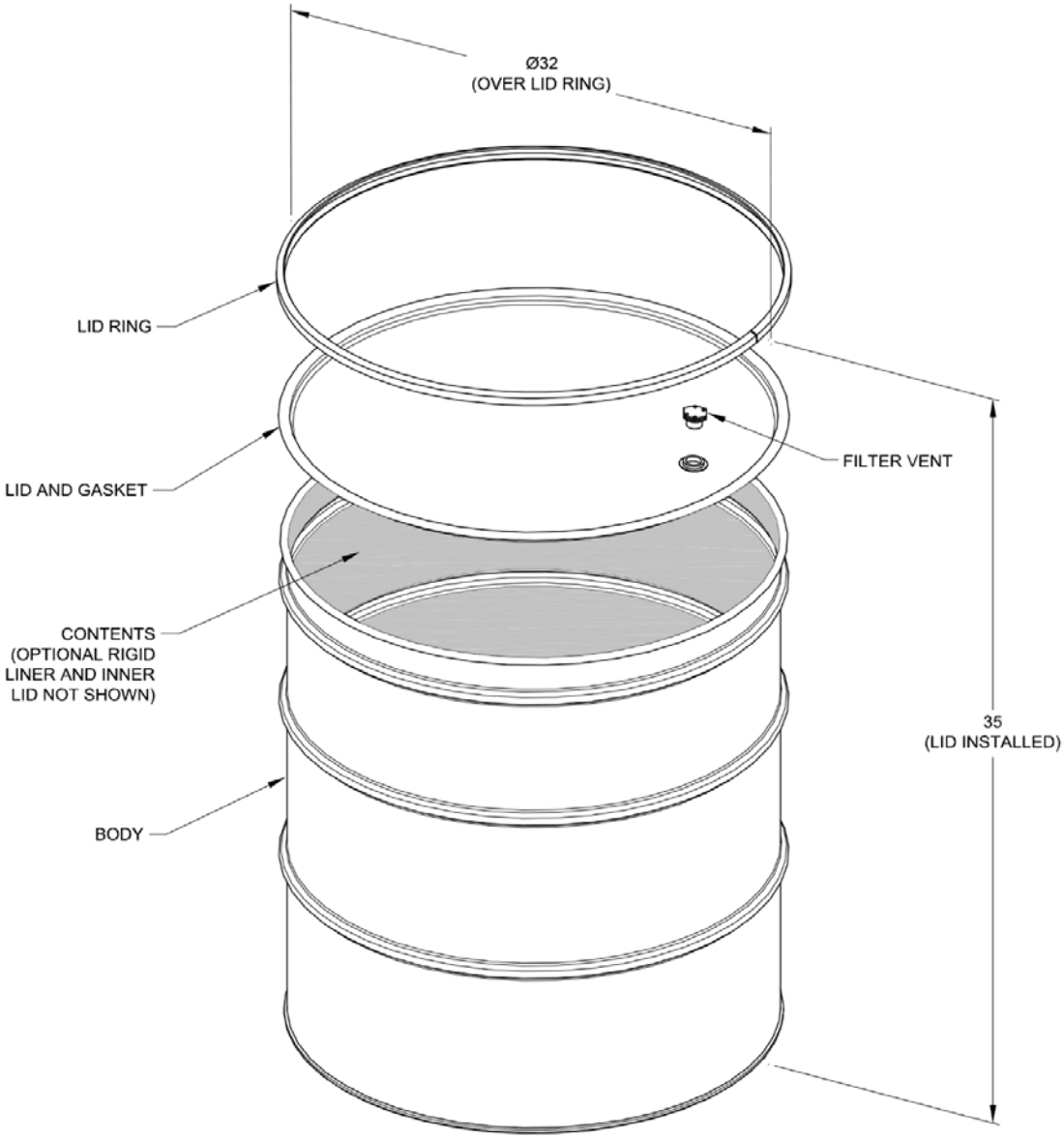


Figure DATA-B-4. 100-gal Drum Components (U.S. DOE 2022)

DATA-B-1.3.5 SC-30G1 Shielded Container

The SC-30G1 shielded container is shipped in a three-pack configuration and is normally emplaced in the repository in the same configuration. The SC-30G1 can be emplaced as an individual unit should the need arise. The SC-30G1 shielded container assemblies will be used to dispose of RH-TRU waste but will be managed and disposed of as CH-TRU waste. The container specifications are provided in Table DATA-B-5. An illustration of the SC-30G1 shielded container components is provided in Figure DATA-B-5.

Table DATA-B-5. SC-30G1 Shielded Container Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	29 ¾	35 ¾	756	908
Diameter	20 ⅜	23	518	584

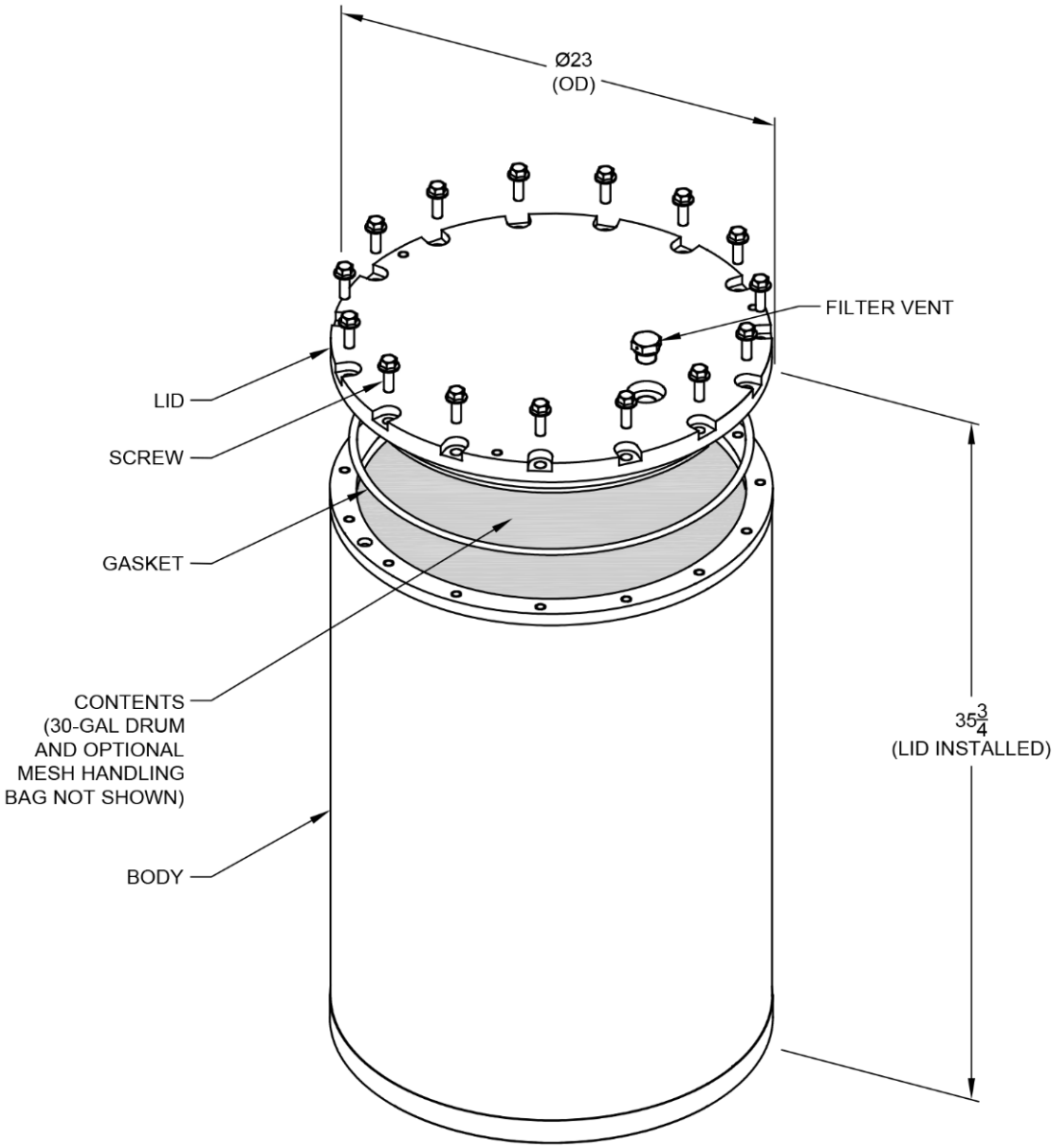


Figure DATA-B-5. SC-30G1 Shielded Container Components (U.S. DOE 2022)

DATA-B-1.3.6 SC-30G2 Shielded Container

The SC-30G2 shielded container is shipped in a two-pack configuration and is normally emplaced in the repository in the same configuration. The SC-30G2 can be emplaced as an individual unit should the need arise. The SC-30G2 shielded container assemblies will be used to dispose of RH-TRU waste but will be managed and disposed of as CH-TRU waste. The container specifications are provided in Table DATA-B-6. An illustration of the SC-30G2 shielded container components is provided in Figure DATA-B-6.

Table DATA-B-6. SC-30G2 Shielded Container Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	29 ¾	36 ⅝	756	930
Diameter	20 ⅜	24 ½	518	622

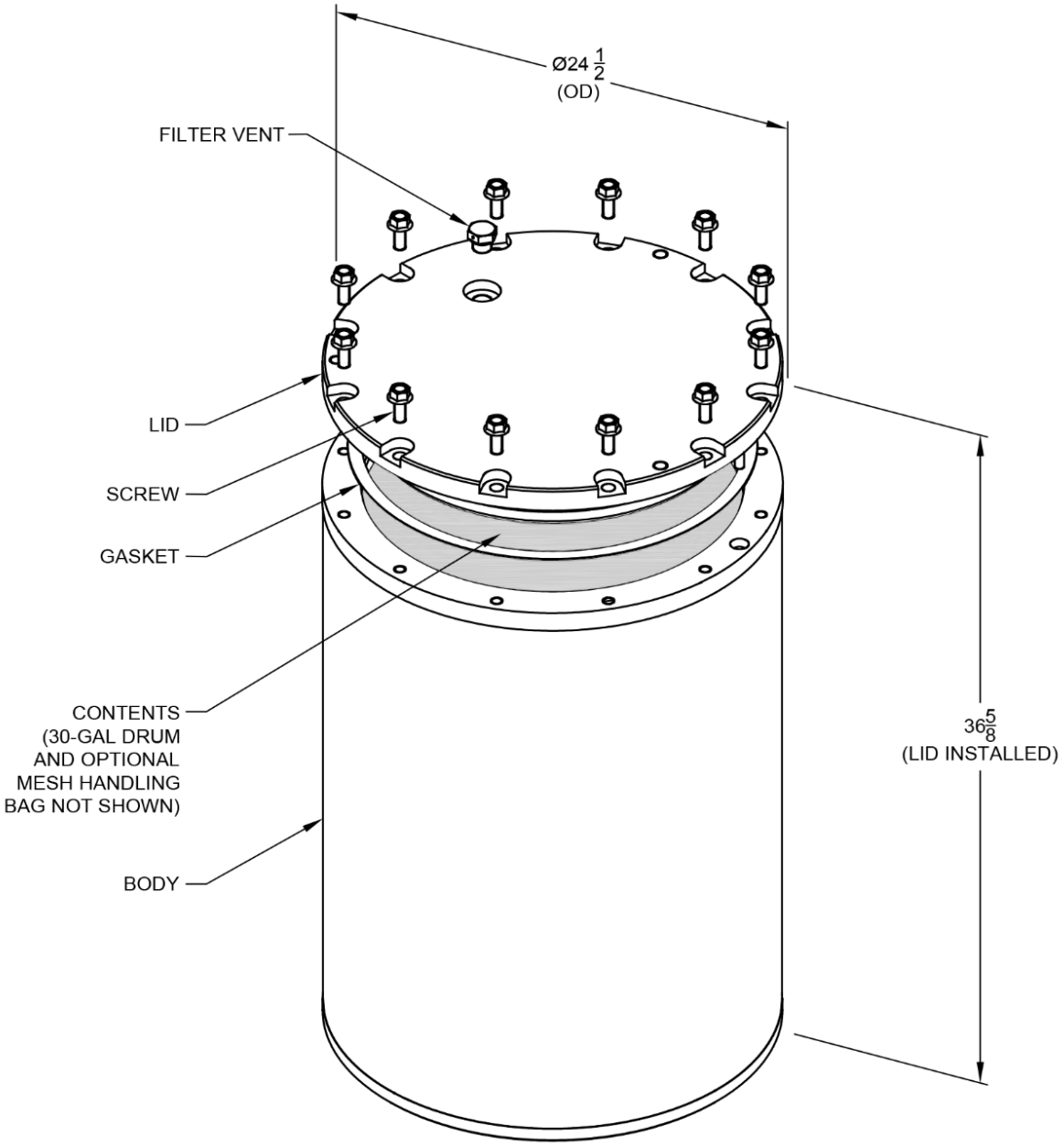


Figure DATA-B-6. SC-30G2 Shielded Container Components (U.S. DOE 2022)

DATA-B-1.3.7 SC-30G3 Shielded Container

The SC-30G3 shielded container is shipped in a single-unit configuration and therefore emplaced in the repository in the same configuration. The SC-30G3 shielded container will be used to dispose of RH-TRU waste but will be managed and disposed of as CH-TRU waste. The container specifications are provided in Table DATA-B-7. An illustration of the SC-30G3 shielded container components is provided in Figure DATA-B-7.

Table DATA-B-7. SC-30G3 Shielded Container Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	29 ¾	42 ¼	756	1,073
Diameter	20 ⅜	28	518	711

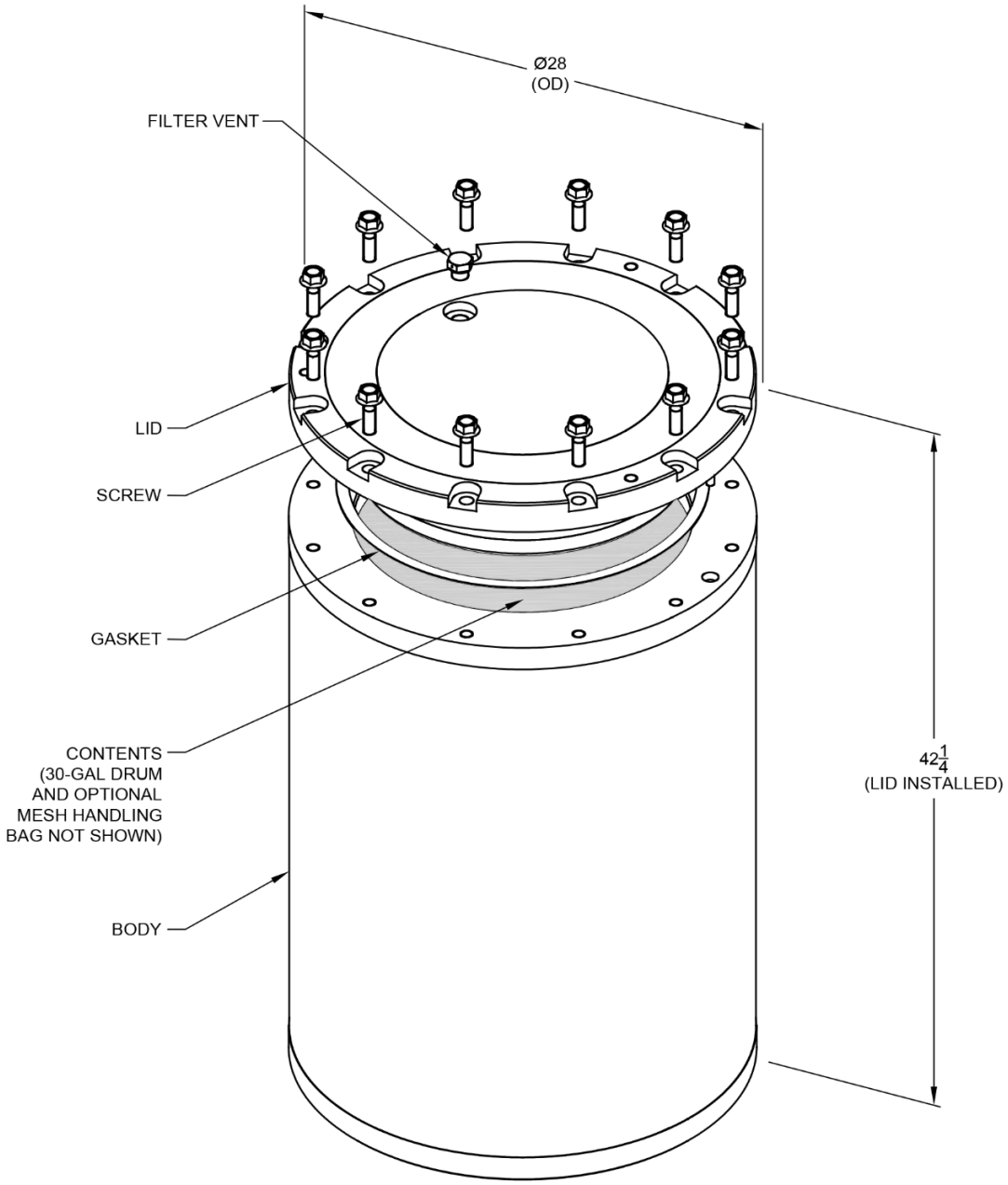


Figure DATA-B-7. SC-30G3 Shielded Container Components (U.S. DOE 2022)

DATA-B-1.3.8 SC-55G1 Shielded Container

The SC-55G1 shielded container is shipped in a two-pack configuration and is normally emplaced in the repository in the same configuration. The SC-55G1 can be emplaced as an individual unit should the need arise. The SC-55G1 shielded container assemblies will be used to dispose of RH-TRU waste but will be managed and disposed of as CH-TRU waste. The container specifications are provided in Table DATA-B-8. An illustration of the SC-55G1 shielded container components is provided in Figure DATA-B-8.

Table DATA-B-8. SC-55G1 Shielded Container Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	35 ¾	40 ½	908	1,029
Diameter	25	29 ⅜	635	746

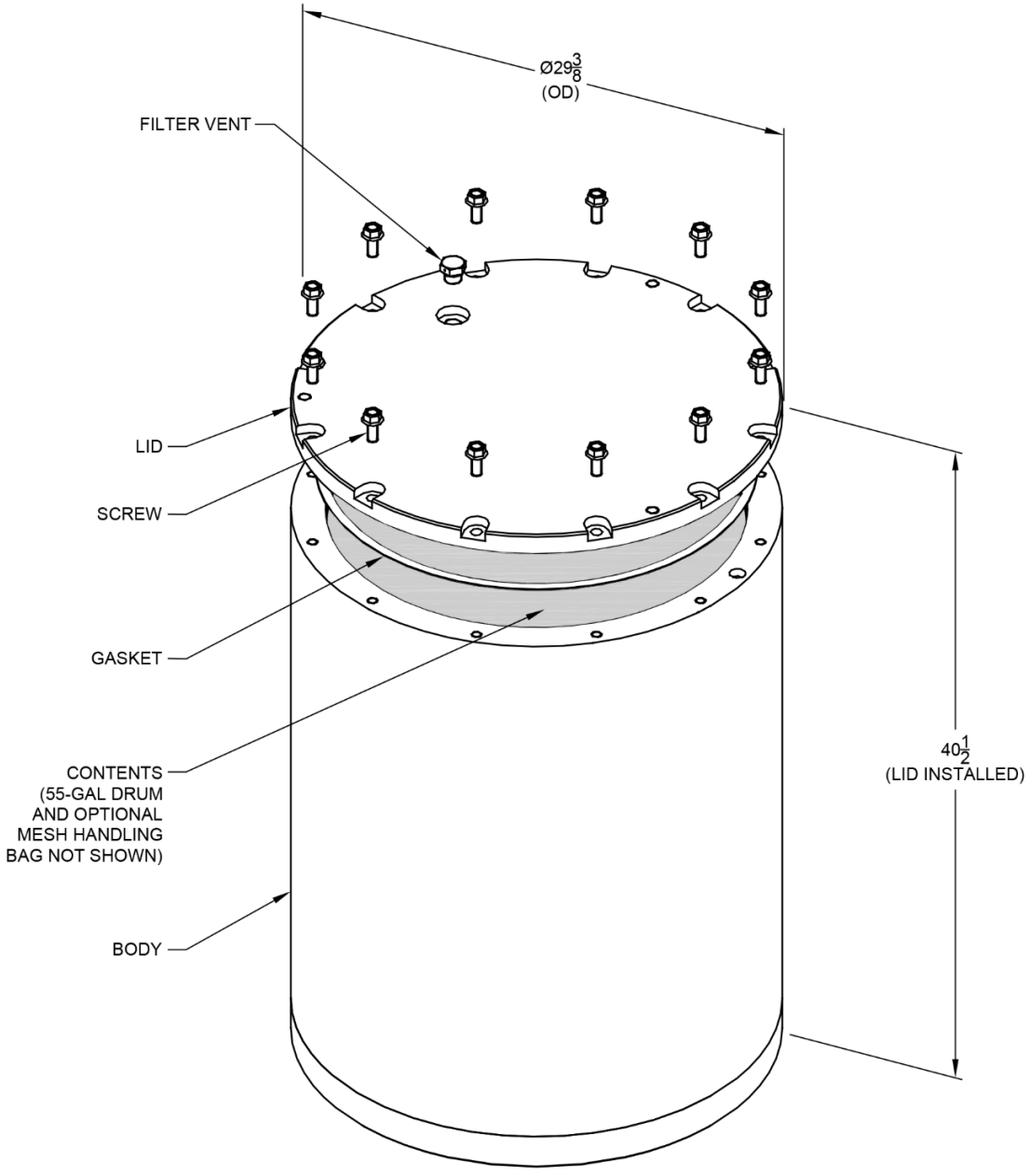


Figure DATA-B-8. SC-55G1 Shielded Container Components (U.S. DOE 2022)

DATA-B-1.3.9 SC-55G2 Shielded Container

The SC-55G2 shielded container is shipped in a single-unit configuration and therefore emplaced in the repository in the same configuration. The SC-55G2 shielded container assemblies will be used to dispose of RH-TRU waste but will be managed and disposed of as CH-TRU waste. The container specifications are provided in Table DATA-B-9. An illustration of the SC-55G2 shielded container components is provided in Figure DATA-B-9.

Table DATA-B-9. SC-55G2 Shielded Container Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	35 ¾	45 ¾	908	1,162
Diameter	25	31	635	787

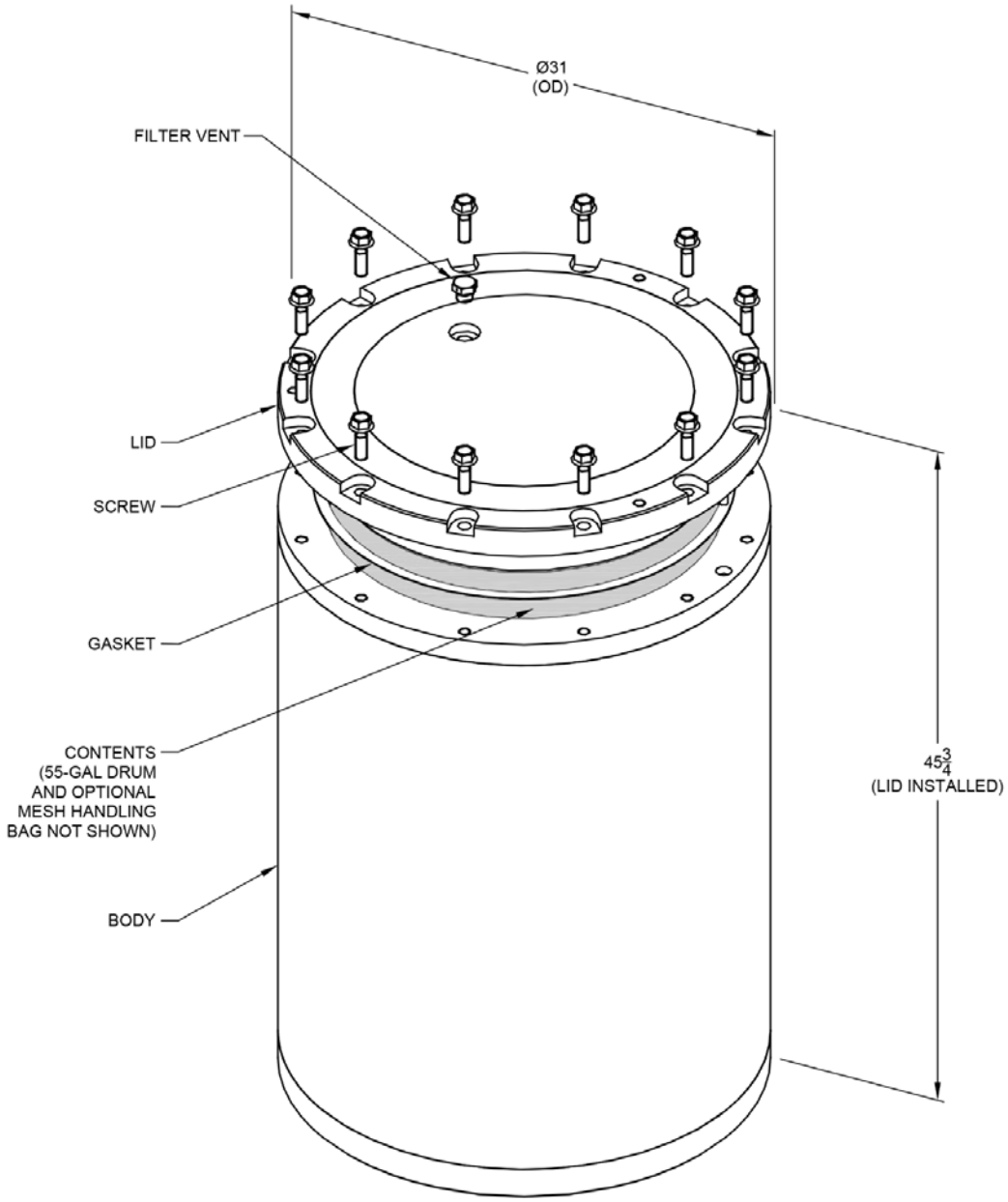


Figure DATA-B-9. SC-55G2 Shielded Container Components (U.S. DOE 2022)

DATA-B-1.3.10 Standard Large Box 2

The SLB2 is available in both top-loading and bottom-loading configurations and shipped and emplaced as an individual unit. The container specifications are provided in Table DATA-B-10 (U.S. DOE 2015a). An illustration of the SLB2 top-loading configuration is provided in Figure DATA-B-10.

Table DATA-B-10. SLB2 Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	66	73	1,676	1,854
Length	102	108	2,591	2,743
Width	63	69	1,600	1,753

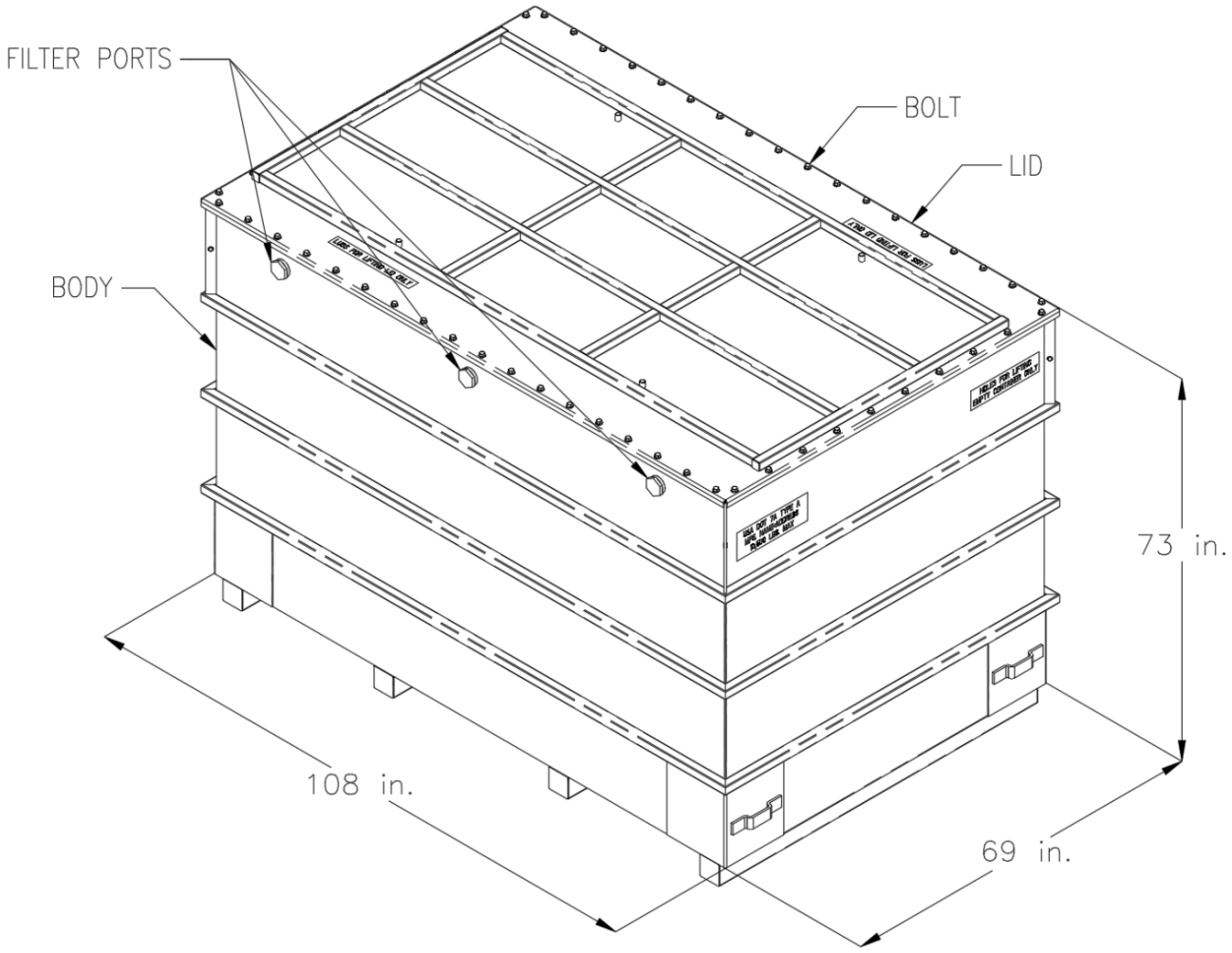


Figure DATA-B-10. SLB2 Components (U.S. DOE 2010a, NMED 2026)

DATA-B-1.3.11 Standard Waste Box

The SWB is shipped in a one or two-pack configuration. Two-packs are separated and emplaced as an individual unit. An SWB can be used as an overpack or to collect derived waste in the Waste Handling Building CH Bay. The container specifications are provided in Table DATA-B-11. An illustration of the SWB is provided in Figure DATA-B-11.

Table DATA-B-11. SWB Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	36 9/16	36 7/8	929	937
Length	68 3/4	71	1,746	1,803
Width	52	54 1/2	1,321	1,384

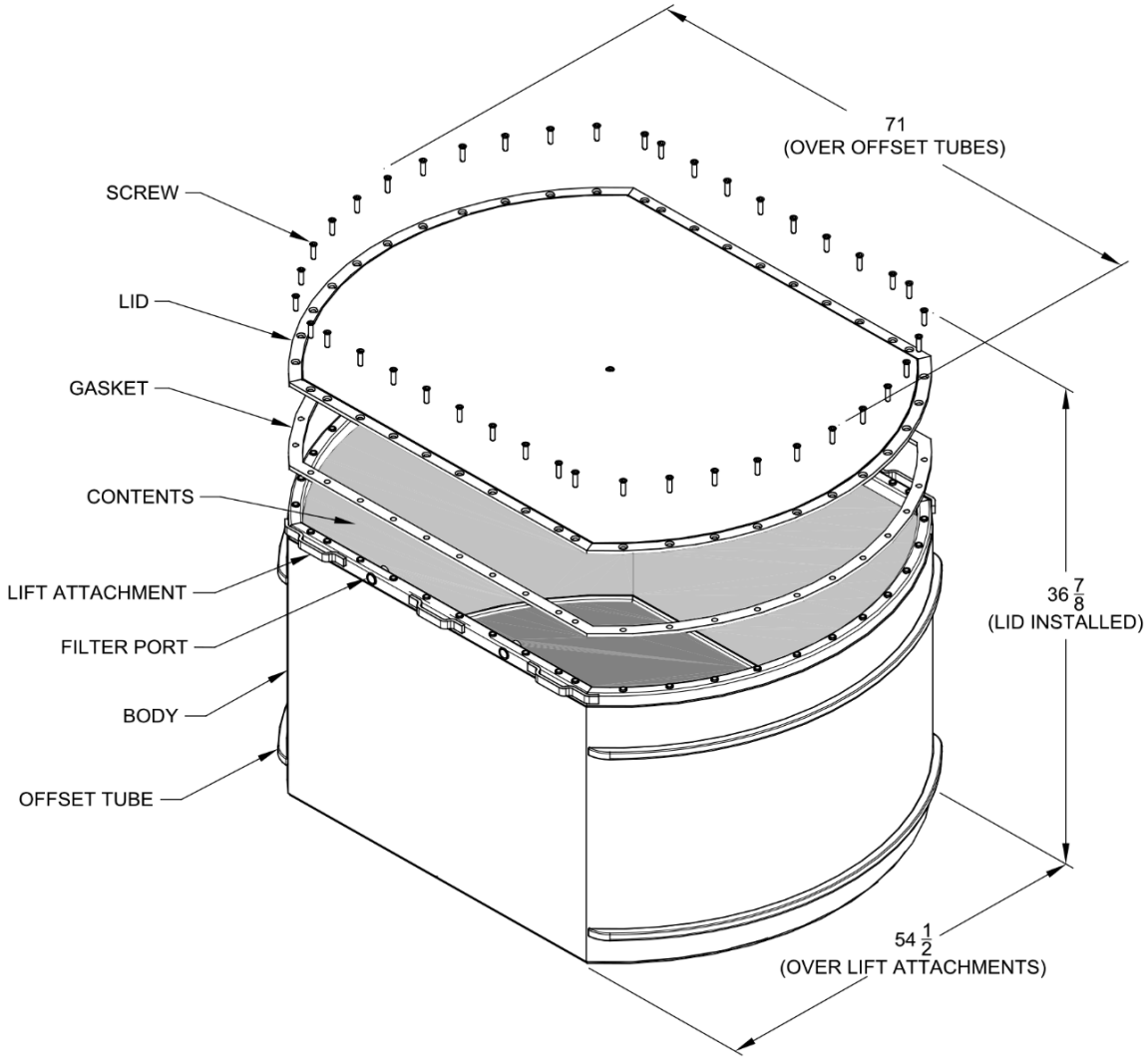


Figure DATA-B-11. SWB Components (U.S. DOE 2022)

DATA-B-1.3.12 Ten-Drum Overpack

The TDOP is shipped and emplaced as an individual unit. The TDOP can be used as an overpack or to collect derived waste in the Waste Handling Building CH Bay. The container specifications are provided in Table DATA-B-12. An illustration of TDOP components is provided in Figure DATA-B-12.

Table DATA-B-12. TDOP Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	72 ⅝	73 ⅛	1,845	1,858
Diameter	68 ¾	71 ¼	1,746	1,810

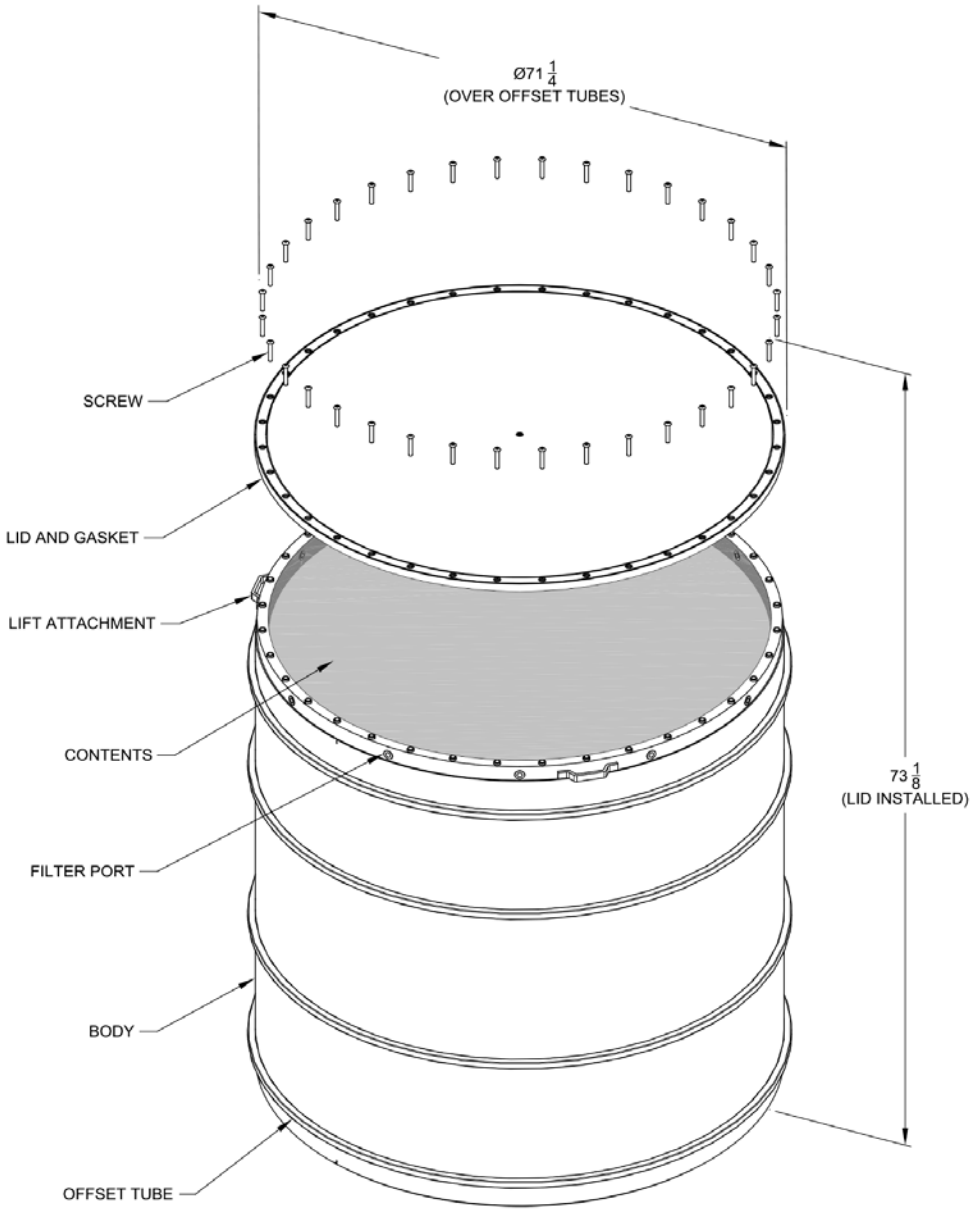


Figure DATA-B-12. TDOP Components (U.S. DOE 2022)

DATA-B-1.3.13 Remote-Handled Transuranic Waste 72B Canister

The RH-TRU Waste Canister is available in both fixed and removeable lid variants shipped and emplaced as a single unit. The canister specifications are provided in Table DATA-B-13 (U.S. DOE 2010b). Illustrations of canister components are provided in Figure DATA-B-13.

Table DATA-B-13. RH-TRU Waste Canister Specifications

Dimension	Approximate Measurement			
	Inside Dimension (inches)	Outside Dimension (inches)	Inside Dimension (mm)	Outside Dimension (mm)
Height	108	120 ½	2,743	3,061
Diameter	25 ½	26	648	660

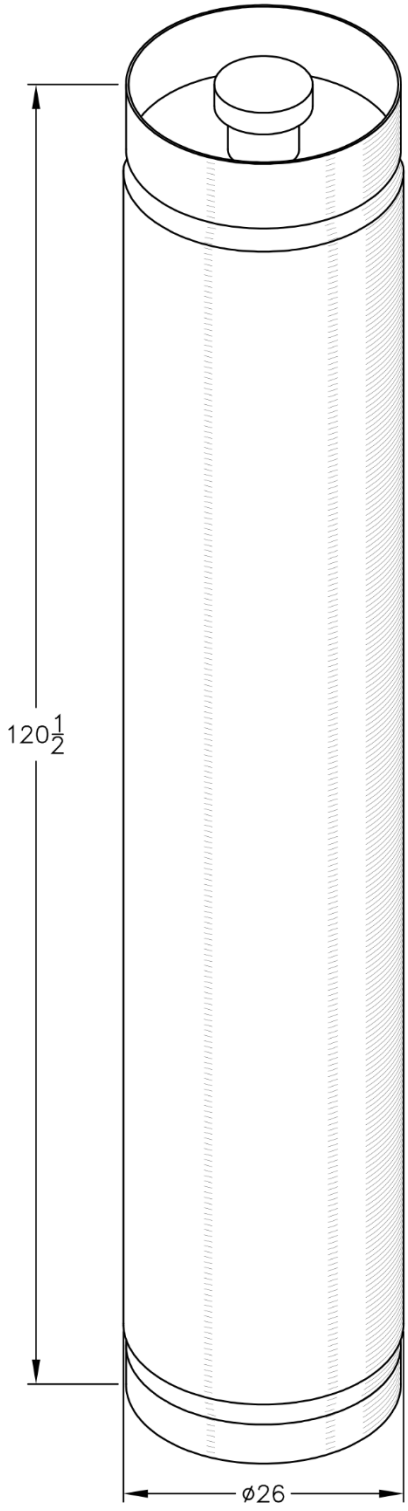


Figure DATA-B-13. RH-TRU Waste Canister Components (U.S. DOE 2015b)

DATA-B-1.4 Emplacement Configurations

Shown in Figure DATA-B-14 is the typical position for waste emplacement containers randomly emplaced in the room of a panel. TDOPs and SLB2s are only emplaced on the bottom position, with another assembly stacked on top. Most other assemblies can be stacked three high before the magnesium oxide (MgO) supersack is emplaced on the top of the stack, with the exception of shielded containers. The U.S. Environmental Protection Agency (EPA) has agreed with the U.S. Department of Energy's (DOE) recommendation to not place MgO supersacks on top of shielded container assemblies (Moody 2010). The CH-TRU and RH-TRU waste emplacement within the repository panels is shown in Figure DATA-B-15.

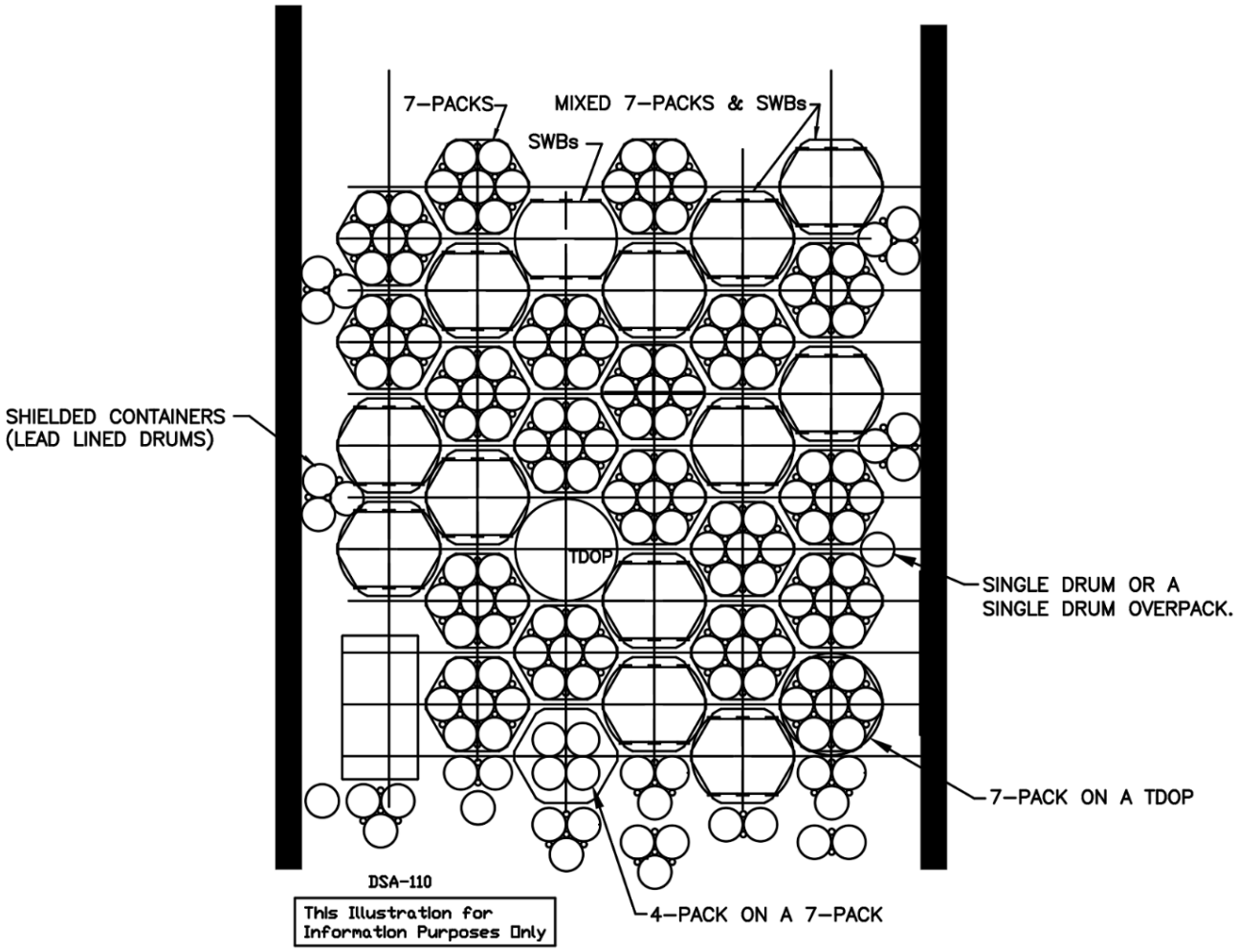


Figure DATA-B-14. CH-TRU Waste Emplacement Layout (U.S. DOE 2025)

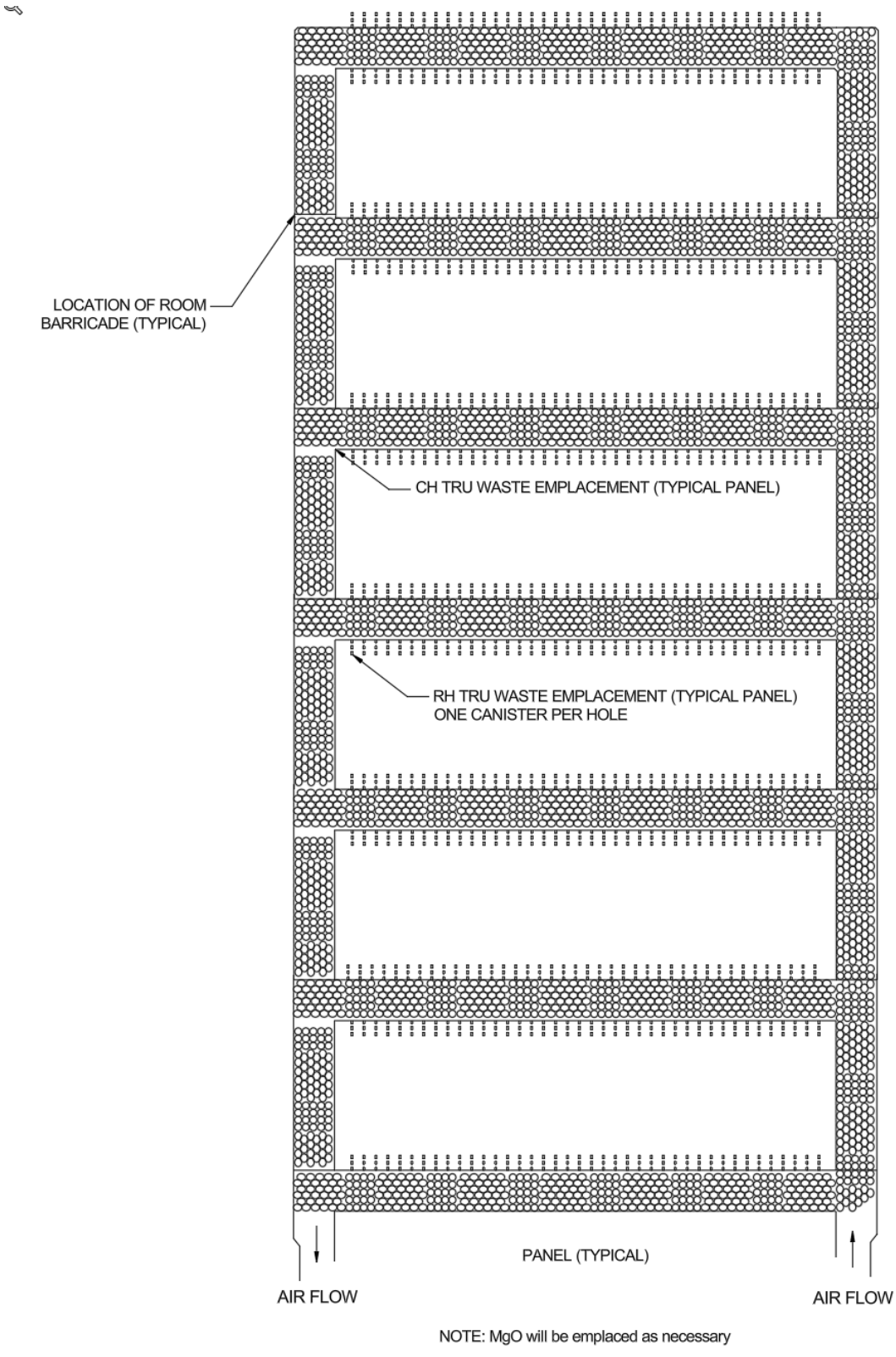


Figure DATA-B-15. CH and RH-TRU Waste Emplacement (NMED 2026)

DATA-B-2.0 REFERENCES

(*Indicates a reference that has not been previously submitted.)

Moody, D.C. 2010. Letter to M. Flynn (Subject: *Additional information regarding Shielded Containers*). September 8, 2010. Carlsbad, NM: Carlsbad Field Office.

New Mexico Environment Department (NMED). 2026. Waste Isolation Pilot Plant Hazardous Waste Facility Permit. February 2026.*

U.S. Department of Energy (U.S. DOE). 2010a. TRUPACT-III TRU Waste Authorized Methods for Payload Control (TRUPACT-III TRAMPAC). Revision 2. May 2010. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2010b. Nuclear Criticality Safety Evaluation for Remote-Handled Transuranic Waste Containers at the Waste Isolation Pilot Plant. WIPP-020, Revision 2. May 2010. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2015a. Nuclear Criticality Safety Evaluation for Contact-Handled Transuranic Waste Containers at the Waste Isolation Pilot Plant. WIPP-016, Revision 5. June 2015. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2015b. Remote-Handled Transuranic Waste Authorized Methods for Payload Control (RH-TRAMPAC). Revision 3. December 2015. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2022. Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC). Revision 6. February 2022. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2023. Addition of Four New Shielded Containers. April 2023. DOE/WIPP-23-0090. Carlsbad, NM: Carlsbad Field Office.*

U.S. DOE. 2025. Waste Isolation Pilot Plant Documented Safety Analysis. DOE/WIPP-07-3372. Revision 11. Carlsbad, NM: Carlsbad Field Office.*