

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1 Page 1 of 2

1. Manufactured and certified by **Fabsco Shell & Tube, LLC, Plant Two, 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA**  
(Name and address of Manufacturer)

2. Manufactured for **AIR PRODUCTS MANUFACTURING LLC, 1940 AIR PRODUCTS BLVD., ALLENTOWN, Pennsylvania, 18106, USA**  
(Name and address of Purchaser)

3. Location of Installation **WORLD ENERGY, PARAMOUNT, California, USA**  
(Name and address)

4. Type **HORIZ.** **A22-13312-6A** **N/A** **A22-13312-6A-300 REV 4** **11682** **2024**  
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year built)

5. ASME Code, Section VIII, Division 1 **2021/ N/A** **N/A** **N/A**  
(Edition and Addenda, if applicable (date)) (Code Case numbers) (Special service per UG-120(d))

6. Shell: **SA-516-70N** **1"** **1/8"** **N/A** **N/A**  
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))

**Body Flanges on Shells**

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
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

7. Seams: **N/A** **N/A** **N/A** **1150F** **1.00HR** **N/A** **N/A** **N/A** **1**  
[Long. (welded, dbl., sngl., lap, butt)] [R.T.(spot or full)] (Eff. %) (H.T. temp) (Time, hr) [Girth. (welded, dbl., sngl., lap, butt)] [R.T.(spot or full)] (Eff. %) (No. of courses)

8. Heads: (a) **N/A** (b) **N/A**  
(Material spec. number, grade or type) (H.T. - time and temp.) (Material spec. number, grade or type) (H.T. - time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(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
(b)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A

**Body Flanges on Heads**

No.	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
(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

9. MAWP **250 psi** **N/A** at max. temp. **675 °F** **N/A**  
(Internal) (External) (Internal) (External)

Min. design metal temp. **32 °F** at **250 psi** Hydro, pneu., or comb. test pressure **HYDRO at 353 PSI**

Proof test **N/A**

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
<b>INLET/OUTLET</b>	<b>2/2</b>	<b>4"-600#</b>	<b>RFLWN</b>		<b>SA-350LF2CL1</b>	<b>0.875"</b>	<b>1/8"</b>				
<b>VENT/DRAIN</b>	<b>1/1</b>	<b>2"-300#</b>	<b>RFLWN</b>		<b>SA-350LF2CL1</b>	<b>0.66"</b>	<b>1/8"</b>				

11. Supports: Skirt **N/A** Lugs **N/A** Legs **N/A** Other **N/A** Attached **N/A**  
(Yes or no) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors, have been furnished for the following items of the report:

**N/A**  
(Name of part, item number, Manufacturer's name and identifying stamp)

**Line 6 - -Tube and Plug Dimensions OR Header Dimensions: 1.0" X 0.109" X 26'**  
**Straight length of tubes, OR, Distance between the headers: 26'**  
**FRT TOP / TOP MID / BOT MID / BOT HEADER - 13' 9 1/8" X 6 3/4" X 4"13/16, WRAP 1/2" THK, END 1/2" THK**  
**BK TOP / BK MID / BK BOT HEADER - 13' 9 1/8" X 6 3/4" X 4 13/16", WRAP 1/2" THK, END 1/2" THK**  
**TUBES (393) 1" O.D. X 0.109" MW, 5/8" HI, 10 FPI, EMBEDDED, SA-179**  
**PLUGS (786) 1.125" O.D. X 1" UH, SA-350LF2**  
**CHARPY EXEMPT PER UG-20 (f) AND/OR UCS-66**  
**Additional Remarks - See Attached U-4...**

Manufactured by	<u>Fabsco Shell &amp; Tube, LLC, Plant Two, 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA</u>		
Manufacturer's Serial No.	<u>A22-13312-6A</u>	CRN	<u>N/A</u>
		National Board No.	<u>11682</u>

**CERTIFICATE OF SHOP/FIELD COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1, "U" Certificate of Authorization Number 30112 expires December 30, 2027.

Date 11/14/2024 Co. name Fabsco Shell & Tube, LLC, Plant Two Signed   
(Manufacturer) (Representative)

**CERTIFICATE OF SHOP/FIELD INSPECTION**

Vessel constructed by Fabsco Shell & Tube, LLC, Plant Two at 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA  
 I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by Bureau Veritas Inspection and Insurance Company, of Lynn, MA

have inspected the component described in this Manufacturer's Data Report on November 7, 2024 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 11/19/2024 Signed  Commissions 16613  
(Authorized Inspector) (National Board Authorized Inspector Commission number)

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Fabsco Shell & Tube, LLC, Plant Two, 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA  
(Name and address of Manufacturer)

2. Manufactured for AIR PRODUCTS MANUFACTURING LLC, 1940 AIR PRODUCTS BLVD., ALLENTOWN, Pennsylvania, 18106, USA  
(Name and address of Purchaser)

3. Location of installation WORLD ENERGY, PARAMOUNT, California, USA  
(Name and address)

4. Type HORIZ. N/A A22-13312-6A  
(Horizontal, vertical, or sphere) (Tank, separator, heat exch., etc.) (Manufacturer's serial number)

N/A A22-13312-6A-300 REV 4 11682 2024  
(CRN) (Drawing number) (National Board number) (Year built)

Data Report Item Number \_\_\_\_\_ Remarks \_\_\_\_\_

Additional Remarks:

DESIGNED AND WELDED TO APPENDIX 13  
ALT DESIGN CONDITION: FV @ 525F

Certificate of Authorization: Type "U" No. 30112 Expires December 30, 2027

Date 11/14/2024 Name Fabsco Shell & Tube, LLC, Plant Two Signed [Signature]  
(Manufacturer) (Representative)

Date 11/19/2024 Signed [Signature] Commissions 16613  
(Authorized Inspector) (National Board Authorized Inspector Commission number)

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1 Page 1 of 2

1. Manufactured and certified by **Fabsco Shell & Tube, LLC, Plant Two, 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA**

(Name and address of Manufacturer)

2. Manufactured for **AIR PRODUCTS MANUFACTURING LLC, 1940 AIR PRODUCTS BLVD., ALLENTOWN, Pennsylvania, 18106, USA**

(Name and address of Purchaser)

3. Location of Installation **WORLD ENERGY, PARAMOUNT, California, USA**

(Name and address)

4. Type **HORIZ.** **A22-13312-6SC** **N/A** **A22-13312-6SC-300 REV 4** **11683** **2024**  
 (Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year built)

5. ASME Code, Section VIII, Division 1 **2021/ N/A** **N/A** **N/A**  
 [Edition and Addenda, if applicable (date)] (Code Case numbers) [Special service per UG-120(d)]

6. Shell: **SA-106B** **0.600"** **1/8"** **N/A** **N/A**  
 (Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) [Length (overall)]

**Body Flanges on Shells**

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
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

7. Seams: **N/A** **N/A** **N/A** **N/A** **N/A** **N/A** **N/A** **N/A** **1**  
 [Long. (welded, dbl., snl., lap, butt)] [R.T. (spot or full)] (Eff. %) (H.T. temp) (Time, hr) [Girth. (welded, dbl., snl., lap, butt)] [R.T. (spot or full)] (Eff. %) (No. of courses)

8. Heads: (a) **N/A** (b) **N/A**  
 (Material spec. number, grade or type) (H.T. - time and temp.) (Material spec. number, grade or type) (H.T. - time and temp.)

Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A			
	Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.	
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

**Body Flanges on Heads**

No.	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(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

9. MAWP **232 psi** **N/A** at max. temp. **430 °F** **N/A**  
 (Internal) (External) (Internal) (External)

Min. design metal temp. **32 °F** at **232 psi** Hydro, pneu., or comb. test pressure **HYDRO at 302 PSI**

Proof test **N/A**

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
<b>INLET/OUTLET</b>	<b>2/2</b>	<b>3"-300#</b>	<b>RFWN</b>	<b>SA-106B</b>	<b>SA-350LF2</b>	<b>0.600"</b>	<b>1/8"</b>				

11. Supports: Skirt **N/A** Lugs **N/A** Legs **N/A** Other **N/A** Attached **N/A**  
 (Yes or no) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors, have been furnished for the following items of the report:


**N/A**  
 (Name of part, item number, Manufacturer's name and identifying stamp)

**Line 6 - -Tube and Plug Dimensions OR Header Dimensions: 1.0" X 0.120" X 24' 6.0"**  
**Straight length of tubes, OR, Distance between the headers: 24' 6.0"**  
**FRT/BK HEADER - 13' 8 7/8" X 0.600" THK, END PLATE 1/2" THK**  
**TUBES (55) 1" O.D. X 0.120" MW, 5/8" HI, 11 FPI, EMBEDDED, SA-179**  
**CHARPY EXEMPT PER UG-20(f) AND/OR UCS-66**  
**DESIGNED AND WELDED TO APPENDIX 13 & 28**  
**ALT DESIGN CONDITION: FV @ 430F**

Manufactured by	<b>Fabsco Shell &amp; Tube, LLC, Plant Two, 2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA</b>		
Manufacturer's Serial No.	<b>A22-13312-6SC</b>	CRN	<b>N/A</b>
		National Board No.	<b>11683</b>

**CERTIFICATE OF SHOP/FIELD COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1, "U" Certificate of Authorization Number **30112** expires **December 30, 2027**.

Date **11/14/2024** Co. name **Fabsco Shell & Tube, LLC, Plant Two** Signed  (Manufacturer) (Representative)

**CERTIFICATE OF SHOP/FIELD INSPECTION**

Vessel constructed by **Fabsco Shell & Tube, LLC, Plant Two** at **2410 Industrial Road, Sapulpa, Oklahoma, 74066, USA**

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by **Bureau Veritas Inspection and Insurance Company, of Lynn, MA**

have inspected the component described in this Manufacturer's Data Report on **November 7, 2024** and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date **11/19/2024** Signed  Commissions **16613**  
(Authorized Inspector) (National Board Authorized Inspector Commission number)