

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

Additional Drawing No.

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

Header Volume (cu.ft.)

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

1. Manufactured and certified by Harsco Industrial Air-X-Changers, 5615 South 129th E. Ave., Tulsa, Oklahoma, 74134, USA
 (Name and address of Manufacturer)

2. Manufactured for CIMAREX ENERGY CO, 3503 EAST JENSEN ROAD, EL RENO, Oklahoma, 73036, USA
 (Name and address of Purchaser)

3. Location of Installation UNKNOWN
 (Name and address)

4. Type Heat Exchanger 15776410.1 N/A 1X-SEC REV 0 92011 2015
 (Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year built)

5. ASME Code, Section VIII, Division 1 2013/ N/A N/A N/A
 [Edition and Addenda, if applicable (date)] (Code Case numbers) (Special service per UG-120(d))

6. Shell: SA516 70 0.875 in 0.125 in 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

7. Seams: Corner Joint N/A C=.20 1150 °F 1 N/A N/A N/A
 [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) Material SA516 70 (b) Material SA516 70
 (Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP, BTM	0.875"	0.125	N/A	N/A	N/A	N/A	N/A	4" x 82.375"	N/A
(b)	ENDS	0.625"	0.125	N/A	N/A	N/A	N/A	N/A	4" x 4"	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 1287 psi N/A at max. temp. 350 °F N/A
 (Internal) (External) (Internal) (External)

Min. design metal temp. -20 °F at 1287 psi Hydro, pneu., or comb. test pressure HYDRO. at 1674 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	
IN/OUT	2	4"	600#RFWN	SA106 GRB	SA105	SCH-160		Weld	Welded	Welded	Header
AUX	1	1"	CPLG	SA105		6000#		Weld	Welded	Welded	Header

11. Supports: Skirt NO Lugs N/A Legs N/A Other Structure Attached Bolted
 (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: 5.75" X 0.875" X 6' 10.375"
Straight length of tubes, OR, Distance between the headers: 7' 0.0"
(A) TUBES: 149 x 0.625" OD, Gauge: 16BWG, Material: SA179 Rolled Tube Sheet (B) INSP.OPENINGS: 298, Type: 3/4x16UNF Threaded, Material: SA105 (C) IMPACT REQUIREMENTS: IMPACT EXEMPT PER: UG-20(f). Constructed in conformance to Appendix 28.

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 4241 expires December 31, 2017.

Date 01/11/2016 Co. name Harsco Industrial Air-X-Changers Signed Jill Cooper
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Harsco Industrial Air-X-Changers at 5615 South 129th E. Ave., Tulsa, Oklahoma, 74134, USA
I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by OneCIS Insurance Company, of Lynn, MA

have inspected the component described in this Manufacturer's Data Report on December 16, 2015, 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 01/11/2016 Signed [Signature] Commissions 11672A, OK765
(Authorized Inspector) (National Board (incl. endorsements))