

**FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
**(Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)**  
**As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1**

1. Manufactured and certified by Air-X-Changers, 5215 Arkansas Ave., Port of Catoosa, Tulsa, Ok 74015  
(Name and address of manufacturer)

2. Manufactured for Delta Engineering Corp. P.O. Box 19982 Houston, Tx 77224-0982  
(Name and address of purchaser)

3. Location of installation Arco Oil & Gas - Offshore, Louisiana  
(Name and address)

4. Type Heat Exchanger 870206.1 83645-C Rev 0 14608 1987  
(Name or cert. tank) (Mfg's serial No.) (CRN) (Drawing No.) (Mat'l. Bk. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1986  
Year

to A-86 None  
(Code Case No.) (Special Service per UG 1201d)

6. Tube & Plug Sheets SA-516-70 2 3/4" 1/8" 9 1/4" ID 6' 10"  
(Mat'l. Spec. No. Grade) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. (D) (ft. & in.)) (Length (overall) (ft. & in.))

7. See: Corner Joint \*\*\* 1150 1  
(Long. (Welded Dbl. Sngl. Lap. Burt)) (R.T. (Spot or Full)) (EM (X)) (H.T. Temp. (F)) (Time (hr)) (Girth (Welded Dbl. Sngl. Lap. Burt)) (R.T. (Spot Partial or Full)) (No. of Courses))

8. Head: (a) Mat'l. SA-516-70 (b) Mat'l. SA-516-70  
(Spec. No. Grade) (Spec. No. Grade)

Location (Top Bottom)	Minimum Thickness	Corrosion Allowance	Crown Radius	Reinforce Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Concave or Convex)
Top, Btm	1 1/8"	1/8"						3 7/8"	x 6' 10" ID
Ends	1"	1/8"						3 7/8"	x 9 1/4" ID

If removable, bolts used (describe other fastenings) \_\_\_\_\_  
(Mat'l. Spec. No. Gr. Size No.)

9. MAWP 1480 380 psi at max temp psi  
 Min temp (when less than -20°F) \_\_\_\_\_ °F Hydro. 2220 psi  
(Name of test pressure)

10. Nozzles, inspection and safety valve openings UG-125 Note 37

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Mat'l.	No. of Thk.	Attachment Mat'l.	How Attached	Location
In, Out	2	8" ANSI	900# RF	SA-105/SA-106-B	Sch 160	Pipe & Weld	Welded	Header
In, Out	2	8"	Swage	SA-234-WPB	Sch 160	Pipe & Weld	"	"
Temp	3	1"	Cplg	SA-105	6000#	Cplg & Weld	"	"

11. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other Structure Attached Bolted  
(Yes or no) (No) (No) (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: \_\_\_\_\_  
(Name of part, item number, Mfg.'s name and identifying stamp)

**\*\*\* Fig. UW-13.2 (b)**  
 Tubes 178 1" OD Straight SA-214 .085M. Gauge Rolled Tube Sht.  
 Insp. 356 1 1/8" NF Thd'd Plug Sht.

**CERTIFICATE OF SHOP 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 Code for Pressure Vessels, Section VIII, Division 1 "U" Certificate of Authorization No. 4241 expires 12-31, 1987.  
 Date 7-14-87 Co. name Air-X-Changers (Manufacturer) Signed Joseph J. Kelley (Representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by Air-X-Changers at Tulsa, Oklahoma  
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Oklahoma and employed by Commercial Union Insurance Company have inspected the component described in this Manufacturer's Data Report on 7-14, 1987, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his 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 the inspection.  
 Date 7-14-87 Signed [Signature] (Inspector) Commissions NAT'L BD. 3194 OK 256  
(National Board incl. endorsements, State Prov. and No.)