E-6

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Bas-Tex Corporation, 12602 FM 529, Houston, Texas 77041 (Name and address of manufacturer)

2. Manufactured for OPTIMIZED PROCESS DESIGNS, INC. P.O. BOX 810, KATY, TEXAS 77492 (Name and address of purchaser)

3. Location of installation Unknown (Name and address)

4. Type Heat Exchanger (Horiz. or vert., tank) | 7845-88-1 (Mfgr's serial No.) | (CRN) | C-7845-88 (Drawing) | 7320 (Nat'l. Bd. No.) | 1989 (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)

1987 (Addenda (date)) | (Code Case No.) | (Special service per UG-120(d))

Items 6-11 incl. to be completed for single wall vessels, jackets of jacketed vessels, or sheets of heat exchangers

6. Shell: SA-53B (Matl (Spec No., Grade)) | .216" (Nom. Thk. (in.)) | .125" (Corr. Allow. (in.)) | 3.068" (Diam. I.D. (ft & in.)) | 20 FT. 8 1/2 IN. (Length (Overall) (ft & in.))

7. Seams: ERW (Long. (Dbl., Sngl.)) | NO (R.T. (Spot or Full)) | 70 (Eff. (%)) | (H.T. Temp. (°F))

(Time) | DBL. WELDED FILLET (Girth (Dbl., Sngl.)) | NO (R.T. (Spot, Partial, or Full)) | 1 (No. of Courses)

8. Heads: (a) Matl. SA516-70 (Spec. No., Grade) (b) Matl. SA516-70 / SA216 WCB (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)	(2) FLG.	1.250"	.125"						6.000"	
(b)	(1) FLG.	1.375"	.125"						6.625" x 12.625"	

If removable, bolts used (describe other fastenings) SA 193-B7, (18), 5/8" DIAMETER (Matl., Spec. No., Gr., Size, No.)

9. Type of Jacket ____ Proof Test ____

10. Jacket Closure ____ (Describe as ogee & weld, bar, etc.) If bar, give dimensions ____ If bolted, describe or sketch.

11. MAWP 150 psi at max. temp. 300 °F. min. design metal temp. 0 °F at 150 psi.
Hydro., pneu., or comb. tes press. 225 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: SA 106 B (Stationary Matl (Spec No., Gr.)) | 3.000" (Diam (in.) (Subject to pressure)) | 2.750" (Nom. Thk (in.)) | .125" (Corr. Allow (in.)) | BOLTED (Attach (Welded, Bolted))

(Floating Matl (Spec No., Gr.)) | (Diam (in.)) | (Nom. Thk (in.)) | (Corr. Allow (in.)) | (Attach)

13. Tubes: SA 106 B (Matl (Spec No., Gr.)) | 1.900" (O.D. (in.)) | .145" (Nom. Thk (in. or Gauge)) | 1 (Number) | U (Type (Straight or "U"))

Items 14-17 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers

14. Shell: (Matl. (Spec. No., Grade)) | (Nom. Thk (in.)) | (Corr. Allow. (in.)) | (Diam I.D. (ft & in.)) | (Length (Overall) (ft & in.))

15. Seams: (Long. (Dbl., Sngl.)) | (R.T. (Spot or Full)) | (Eff. (%)) | (H.T. Temp. (°F))

(Time) | (Girth (Dbl., Sngl.)) | (R.T. (Spot, Partial, or Full)) | (No. of Courses)

16. Heads: (a) Matl. ____ (Spec. No., Grade) (b) Matl. ____ (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)										
(b)										

If removable, bolts used (describe other fastenings) ____ (Matl., Spec. No., Gr., Size, No.)

17. MAWP 250 psi at max. temp. 300 °F. min. design metal temp. -20 °F at 250 psi.
Hydro., pneu., or comb. test press. 375 psi.

(12/82) This form (E00108) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

Form U-1 (Back)

18. Nozzles, Inspection and Safety Valve Openings: UG-125, NOTE 37

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
Shell in	1	2"	FLG.	SA 105N	600# ANSI	self	MOVEABLE	to nozzle
Nozzle	1	2"	FITTING	SA105N	.218"	self	welded	to shell
Shell out	1	2"	FLG.	SA105N	600# ANSI	self	MOVEABLE	to nozzle
Nozzle	1	2"	FITTING	SA105N	.218"	self	welded	to shell

19. Supports: Skirt ____ (Yes or no) Lugs ____ (No.) Legs ____ (No.) Other (a) Brackets (Describe) Attached to shell and MOVEABLE (Where and how)

20. 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, mfgr's name and identifying stamp)

IMPACT TEST EXEMPT PER UG-20, UCS-66 a, b, c, d

8.b.(1) BONNET .500" THK., .125" CORROSION ALLOW. 4.375" CROWN RADIUS, CONCAVE SIDE TO PRESSURE

item no: E-6 purchase order no.: 8850-DM-1308

1 Model X51-1E000-420 heating surface per section 100 sq. ft.

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. 11,634 expires 1-15 19 ~~89~~ 92

Date 1-14-89 Co. name Bas-Tex Corporation (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Bas-Tex Corporation at Houston

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 Texas and employed by H.S.B.I. & I. Co.

of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on 1-25, 19 89, 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 the 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 this Inspection.

Date 1-25-89 Signed (Authorized Inspector) Commissions AB 10180 TX 1094 (Nat'l Board, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

"U" Certificate of Authorization No. ____ expires ____, 19____.

Date ____ Co. name ____ (Assembler that certified and constructed field assembly) Signed ____ (By Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

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 ____ and employed by ____

____ of ____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items ____, not included in the certificate of shop inspection, have been inspected by me and that, to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of ____ psi. 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 this Inspection.

Date ____ Signed ____ (Authorized Inspector) Commissions ____ (Nat'l Board (incl. endorsements), State, Prov., and No.)

(12/82)