

1. Manufactured and certified by Perry Products Corporation 25 Mt. Laurel Road, Hainesport, NJ 08036 (Name and address of Manufacturer) #109133  
 2. Manufactured for Minnesota Energy, 777 Borden Avenue West, Buffalo Lake, MN, 55314 (Name and address of Purchaser)  
 3. Location of installation Same  
 4. Type: Horizontal Heat Exchanger B-6194 (Name and address) --- D-01065 Rev. 1 6188 2001  
 (Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exh., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)  
 5. ASME Code, Section VIII, Div. 1 1998-00A (---) (---)  
 Edition and 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, shell of heat exchangers, or chamber of multi-chamber vessels.  
 6. Shell (a) No. of course(s): 4 (b) Overall length (ft & in.): 9'- 11 7/8"

Course(s)			Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft. & in.)	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	32"	3'- 1"	SA-516 Gr70		3/8"	1/16"	1	None	70%	1	None	70%	---	---
2	(See below)	3 1/2"	Expansion Joint (See Below)		3/8"	1/16"	S	None	85%	1	None	70%	---	---
1	32"	6'- 3 7/8"	SA-516 Gr70		3/8"	1/16"	1	None	70%	1	None	70%	---	---

7. Heads: (a) Expansion Joint SA-516 Gr70 (b) ---  
 (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp (Mat'l Spec. No., Grade or Type) H.T.-Time & 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) Center	---	---	---	1-1/8"	---	Flanged and	flued heads	---	---	---	---	---	---	---
(b)						32" OD	x 40" OD							

If removable, bolts used (describe other fastening) ---  
 (Mat'l Spec. No., Grade, size, No.)  
 8. Type of jacket --- Jacket closure ---  
 (Describe as ogee & weld, bar, etc.)

If bar, give dimensions ---  
 9. MAWP FV & 175 (internal) --- (external) psl at max. temp. 375 (internal) --- (external) °F. Min. design metal temp. 20 °F at FV & 175 psl.

10. Impact test No per Code paragraphs UG-20 (f), UCS-66(a) and UHA-51(d)(e).  
 (Indicate yes or no and the component(s) impact tested)  
 11. Hydro., pneu., or comb. test press. 228 Proof test ---  
 Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-240 304 32" 1-1/2" 0 Welded  
 Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)  
Body Flg. SA-516 Gr70 32-1/8" ID x 36-5/8" OD 2" 0 Retained by liner  
 Floating (Mat'l Spec. No.): Dia., in. Nom. thk., in. Corr. Allow., in. Attachment  
 13. Tubes: SA-249 TP304 1" 18 GA. 449 Straight  
 Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.  
 14. Shell (a) No. of course(s): 1/1 (b) Overall length (ft & in.): 1 @ 1'- 8" Lg. & 1 @ 1'- 4" Lg.

Course(s)			Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft. & in.)	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	32"	1'- 8"	SA-240 304		1/4"	0	1	None	70%	---	---	---	---	---
1	32"	1'- 4"	SA-240 304		1/4"	0	1	None	70%	---	---	---	---	---

15. Heads: (a) SA-516 Gr70 (b) SA-516 Gr70  
 (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp (Mat'l Spec. No., Grade or Type) H.T.-Time & 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) Top	1.3825"	0	---	---	---	---	32"	---	---	S	None	100%	
(b) Bottom	1.3825"	0	---	---	---	---	32"	---	---	S	None	100%	

If removable, bolts used (describe other fastening) ---  
SA-193 GrB7, 3/4" Dia. x 6-1/2" Lg., (56)  
 (Mat'l Spec. No., Grade, Size, No.)



16. MAWP FV & 100 --- psi at max. temp. 375 --- °F Min. design metal temp. 20 °F at FV & 100 psi

(internal) (external) (internal) (external)

17. Impact test No per Code paragraphs UG-20 (f), UCS-66(a) and UHA-51(d)(e).

(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. 130 Proof test ---

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet	1	10"	CL150 LJ	SA-312W TP304	SA-105	.165"	0	---	d	1a	---
Inlet	1	6"	CL150 SO	SA-53 GrB	SA-105	.280"	1/16"	---	d	3	---
Outlet	1	2"	CL150 SO	SA-106 GrB	SA-105	.344"	1/16"	---	d	3	---
Outlet	1	8"	CL150 LJ	SA-312W TP304	SA-105	.148"	0	---	d	1a	---
Outlet	1	3"	CL150 LJ	SA-312W TP304	SA-105	.216"	0	---	d	1a	---
Various	4	1"	Half Coupling	SA-105	---	3000#	1/16"	---	d	---	---
Various	2	1/2"	Half Coupling	SA-105	---	3000#	1/16"	---	d	---	---

20. Supports: Skirt --- Lugs 2 Legs --- Others --- Attached Welded to main shell.

(Yes or No) (No.) (No.) (Describe) (Where and How)

21. Manufacturer's Part/Item Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:  
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: Not for lethal service. UG-46(a). For noncorrosive service. Hydro-tested in horiz. position. Safety valve elsewhere in system.

19. Nozzles (continued)

Vent	1	1"	Half Cplg.	SA-182 F304	---	3000#	0"	---	d	---	---
Vent	1	1"	NPT End	SA-312W TP304	---	.179"	0"	---	d	---	---

**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. 4328 Expires 12/31 2003

Date MAY 30 2001 Name Perry Products Corporation Signed B. Messick  
(Manufacturer) (Representative)

**CERTIFICATE OF SHOP INSPECTION**

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of NJ and employed by HSB I&I Co. of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on MAY 25 2001, 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 this inspection.

Date MAY 30 2001 Signed [Signature] Commissions NB 7050AB, NJ 476  
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)

**CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE**

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1,

U Certificate of Authorization No. \_\_\_\_\_ Expires \_\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(Assembler) (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 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 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 \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (Nat'l Board incl. endorsement, State, Province and No.)