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(A) 2952453

**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 EXCHANGER INDUSTRIES, 5505-52 Street S.E., Calgary, Alberta T2A 6A8  
 A Division of Premetalco Inc. (Name and address of Manufacturer)

2. Manufactured for I.P. Constructors Ltd., 5430 - 30 Street S.E., Calgary, Alberta  
 (Name and address of Purchaser)

3. Location of installation Norcen Energy, Golden Spike 8-27-51-27-W4M.  
 (Name and address)

4. Type: Horizontal Heat Exchanger 94-2996  
 (Name, vert., or sphere) (Tank, separator, pt. vessel, heat exch., etc.) (Mfg's serial No.)

M3308.2 94-2996 1994  
 (ICR#) (Drawing No.) (Mat'l. Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1992-1992 ADD  
 (Edition and Addenda (date)) (Code Case No.) (Special Service per UG-120(a))

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): 1 (b) Overall length (ft & in.): 19'-9"

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	15"	19'-9"	SA-312-304L	1/2	1/16	1	-			85	1	--			100	n/a	n/a

7. Heads: (a) \_\_\_\_\_ (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	F.A. Spot, None	Etc.
(a)														
(b)														

If removable, bolts used (describe other fastening) \_\_\_\_\_  
 (Mat'l Spec. No., Grade, size, No.)

8. Type of jacket \_\_\_\_\_ Jacket closure \_\_\_\_\_  
 (Describe as eggs & weld, bar, etc.)

If bar, give dimensions \_\_\_\_\_ If bolted, describe or sketch.

9. MAWP 465 \_\_\_\_\_ psi at max. temp. 150 \_\_\_\_\_ °F Min. design metal temp. -20 \_\_\_\_\_ °F at 465 psi.  
 (Internal) (External) (Internal) (External)

10. Impact test No - exempt per UHA-51(a)  
 (Indicate yes or no and the component(s) impact tested)

11. Hydro. ~~TEST~~ test press. 702 \_\_\_\_\_ PSI Proof test \_\_\_\_\_

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-312-304L 15" 1 3/8" 1/8" welded  
 (Stationary (Mat'l Spec. No.)) (O.D., in. (subject to press.)) (Nom. thk., in.) (Corr. Allow., in.) (Attachment (welded or bolted))

\_\_\_\_\_ (Flange (Mat'l Spec. No.)) (D.O., in.) (Nom. thk., in.) (Corr. Allow., in.) (Attachment)

13. Tubes: SA-249-304L 3/4" 16 BWG A/W 113 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) 2 (b) Overall length (ft & in.): 15-1/4"

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	
2	15"	15 1/4"	SA-312-304L	1/2	1/16	1	-	85	1	full	100	n/a	n/a	

15. Heads: (a) SA-240-304L (b) SA-240-304L  
 (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 or Radius	Flat Diameter	Side to Pressure		Category A			
		Min.	Corr.	Crown	Knurled					Convex	Concave	Type	Full	Spot	None
(a)	End	1 5/16	1/16						20 1/8						
(b)	End	1 5/16	1/16						20 1/8						

If removable, bolts used (describe other fastening) 48 pcs 3/4 x 5 5/8" SA-193-B7M studs  
 (Mat'l Spec. No., Grade, size, No.)

16. MAWP 465 — psi at max. temp 150 — °F. Min. design metal thk -20 °F at 465 psi.  
(Internal) (External) (Internal) (External)
17. Impact test No - exempt per UHA-51(a)  
(Indicate yes or no and the component(s) impact tested)
18. Hydro., pneu., or comb. test press. 702 PSI Proof test —
19. Nozzles, inspection, and safety valve openings:

Purpose (Test, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Snap, Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Chan in	1	6"300#	RFWN	*	**	.500	1/16	none	welded	welded	bot frt
Chan out	1	6"300	RFWN	*	**	.500	1/16	none	welded	welded	top rear
Vent-drain	2	3/4"6000#	CPLG	**		.474	1/16	none	welded	welded	chan
Shell in	1	6"300#	RFWN	*	**	.500	1/16	none	welded	welded	bot rear
Shell out	1	6"300#	RFWN	*	**	.500	1/16	none	welded	welded	top frt
Drain	1	3/4"300#	RFWN	*	**	.218	1/16	none	welded	welded	bot shel
P.S.V. on piping											

20. Supports: Skirt — Lugs — Legs — Others saddles Attached welded to shell  
(Yes or no) (No.) (No.) (Describe) (Where and how)

21. Manufacturer's Partial 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: \* = SA-312-304L Surface Area: 438.2 sq. ft.  
 \*\* = SA-182-304L Capacity: 30.5 cu. ft.  
 Item No: E-202

GAS/GAS EXCHANGER

#### 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. 5983 Expires March 30th, 19 96  
 Date 25 APR 94 Name EXCHANGER INDUSTRIES,  
A Division of Premetalco Inc. Signed MV Baxter  
(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/or the State or Province of Alberta and employed by Boiler & Pressure Vessel Safety of Alberta have inspected the pressure vessel described in this Manufacturer's Data Report on APRIL 25, 1994, 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 94-04-25 Signed [Signature] Commissions AB 55(R)  
(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 —, 19 —  
 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/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 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.)