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

1. Manufactured by MINNESOTA VALLEY ENGINEERING, NEW PRAGUE, MINN. 56071
(Name and address of manufacturer)

2. Manufacturer for
(Name and address of purchaser)

3. Location of installation
(Name and address)

4. Type VERT VCS-315 (Horiz., or vert. tank) Vessel No. 472 (Mfgr's Serial No.) (CRN) (Drawing) 2874 (Nat'l Brd No.) Year Built 1979

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 1977 (Year) and Addenda to 6-30-78 (Date) and Code Case no. Special service per UG-120(d) LOW TEMP SVC REQUIREMENTS OF UW-2(B) & UHA-51

Manufacturers' 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)

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

6. Shell: Material (Spec. No., Grade) Nominal Thickness in. Corrosion Allowance in. Diam. ft in. Length ft in.

7. Seams: Longitudinal (Welded, Dbl., Sngl., Lap, Butt) R.T. (Spot or Full) Efficiency % H.T. Temp F

Time Girth (Welded Dbl., Dngl., Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses

8. Heads: (a) Material (Spec. No., Grade) (b) Material (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)						
(b)						

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)				
(b)				

If removable, bolts used (describe other fastenings)
(Material, 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. Constructed for max. allowable working pressure psi at max. temp. F Min. temp. (when less than -20 F) F.
Hydrostatic, pneumatic, or combination test pressure psi

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary—Material (Spec. No. Gr.) Diam. (Subject to pressure) in. Nominal Thickness in. Corrosion Allowance in. Attachment (Welded, Bolted) Floating—Material (Spec. No., Grade) Diam. in.
Nominal Thickness in. Corrosion Allowance in. Attachment

13. Tubes: Material (Spec. No., Gr.) O.D. in. Nominal Thickness in. or gauge Number Type (Straight or "U")

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

14. Shell: Material SA240 T304 (Spec. No., Gr.) Nominal Thickness .325 in. Corrosion Allowance 0 in. Diam. ID 3 ft 6 in. Length 3 ft 2 in.

15. Seams: Longitudinal DOUBLE BUTT (Welded, Dbl., Sngl. Lap Butt) R.T. FULL (Spot or Full) Efficiency 100 % H.T. Temp F Time
Girth (Welded, Dbl., Sngl., Lap, Butt) R.T. (Spot, Partial, or Full) No. of courses 1

16. Heads: (a) Material SA240 T304 (Spec. No., Grade) (b) Material (Spec. No., Gr.)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	TOP & BOTTOM	.301"	0			2:1
(b)						

	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)				CONCAVE
(b)				

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

FORM U-1 (BACK)

17. Constructed for max. allowable working pressure 250 psi at max temp. 100° F. Min. temp. (when less than -20 F) -320° F.
Hydrostatic, pneumatic, or combination test pressure 397 psi.

Items below to be completed for all vessels where applicable SA312 T304

18. Safety Valve Outlets: Number 1 Size 1-1/4" IPS Location VENT

19. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
OUTLET	2	1.67"OD	304	SA312	.158"		WELDED
X-RAY	2	1.50"OD	304	SA312	.120"		WELDED
GAUGE	2	.50"OD	304	SA312	.088"		WELDED
INLET	1	.87"OD	304	SA312	.120"		WELDED
INLET	1	1.00"OD	304	SA249	.120"		WELDED

20. Inspection Openings:
Manholes No. ____ Size ____ Location FOR NONCORROSIVE SERVICE
Handholes No. ____ Size ____ Location ____
Threaded No. ____ Size ____ Location ____

21. Supports: Skirt ____ (Yes or no) Lugs ____ (No.) Legs ____ (No.) Other HUB (Describe) Attached ENDS WELDED (Where and how)

22. Remarks: VACUUM JACKETED VESSEL FOR STORAGE OF LIQUID NITROGEN, OXYGEN OR ARGON. DESIGN PRESSURE IS 267.6 PSI. INNER VESSEL CODED ONLY.

CERTIFICATE OF 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.

Date 3-6-79 Signed MINNESOTA VALLEY ENGR. (Manufacturer) by Melvin Malecha (Representative)

"U" Certificate of Authorization No. 8377 expires JAN. 15, 19 80.

CERTIFICATE OF SHOP INSPECTION

Vessel made by MINNESOTA VALLEY ENGINEERING at NEW PRAGUE, MINN. 56071

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 MINNESOTA and employed by LABOR & IND DIV BOILERS of MINN. have inspected the pressure vessel described in this Manufacturers' Data Report on 3-6- 19 79, 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 Manufacturers' 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 3-6-79

Signed B Steinbauer (Inspector) Commissions NB6897 (Nat'l Board, State, Province and No.)

CERTIFICATE OF COMPLIANCE FOR FIELD WORK

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.

Date ____ Signed ____ (Manufacturer) by ____ (Representative)

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

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 Manufacturers' 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 Manufacturers' 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, State, Province and No.)