

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M Date: JULY 14, 2014 SAP Equipment ID: 66004968

VESSEL STATIC DATA						
Plant		Ansell Gas Plant		Op Unit		System
Prov. Insp. #		A0157868		CRN F-1007.2		Equip Tag # V-701A
Equipment Description				Propane A Bullet		Serial # 1668-201A
Manufacturer						Vessel Class
Internal Access:		yes		Description: Manway, side shell		Year Built 1984
MAWP		280		PSI @ 154 °F		MDMT °F
CODE : U			RT : 2			PWHT :
Diameter		Length (s/s) in		OAL mm / in		Horizontal
Shell	Mat'l	SA-516-70		Thickness	1.220 in	Corr Allowance 0.063 in
Head	Mat'l	SA-516-70		Thickness	1.375 in	Corr Allowance 0.063 in
Nozzle	Mat'l			Thickness	in	Corr Allowance mm
Internal Coating: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			Internal Clad : YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			Capacity m3
Manway : yes			Inspection Port : no			Saddle
Nozzle Rating		lb ANSI		Painted : yes		Insulated no
PROCESS DATA						
Product Description				Propane		Sweet
Operating Pressure		110		PSI		Operating Temperature 22 °C
SOUTH PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity	Manufacturer	Model / Type	Service Date / Company
C25275-A10	top shell	280psi	7245scfm	Farris	26JA11-120	09/11. Wizard. PSV-7001B
SOUTH PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (in)	
PRD Inlet	Flanged				2"	
PRD Outlet	Flanged		150		3"	
NORTH PSV STATIC DATA						
Serial No.	Location	Set Pressure	Capacity	Manufacturer	Model / Type	Service Date / Company
AAC671	Top shell	250psi	9724scfm	Fisher Combo Joe – Manifold. 4 x Fisher gas Safety release valves	H503-280	09/11. Wizard. PSV-7001A
NORTH PSV DETAILS						
	Type (Thread/Flange)		ANSI Rating		Size (in)	
PRD Inlet	Flanged				4" flanged into manifold, 4 x 3" out of manifold swedging down to 2"	
PRD Outlet	Threaded				4 x 3" stacks	
NDE Equipment records						
Procedure#	Description	Manufacturer	Model#	Serial#	Due Date	

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INSPECTION SUMMARY

A visual external inspection was conducted on vessel while in operation. Dataplate appears secure, too high to access. Dataplate worn, only stamped info legible. Vessel high off ground. Vessel and piping are in good condition, piping well supported. Vessel and piping paint in good condition with some minor areas of deterioration, a few to bare metal. No corrosion noted. Vessel saddle seal welded, bolted securely to support structure. Ground cable securely attached directly to saddle support. 2 PSVs. South is a single unit, vertical stack has a weather cap and a hole drilled at bottom of 90 for drainage. North is a 1 into 4 manifold, with all 4 stacks having a weather cap. Both PSVs have up to date service. South PSV set at MAWP, North PSV manifold set below MAWP, both vent to atmosphere. PSV inlet isolation valves are carsealed open. UT inspection performed 2014 by Streamline Inspection.

Vessel was found to be in good condition and fit for continued service.

RECOMMENDATIONS

Review UT survey results.

NONCONFORMANCES / INSPECTION DEFICIENCIES

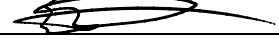
No deficiencies noted

INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval
Inspection Date July 14, 2014	Date of Last Inspect	Date of Next Inspect

REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by	Ed Tymensen		Date	July 14, 2014	
Company	Streamline Inspection	PESL #	000711	API #	27479
Reviewed and Approved by	_____	_____	Date	_____	
	_____	PESL #	_____	API #	_____
Criticality Assessment Rerun	_____	Inspection Planning Rerun	_____		
Assessed Next Inspection Date					

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M Date: JULY 14, 2014 SAP Equipment ID: 66004968

DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Good			Overall
V2	General Corrosion	n/a			No corrosion noted
V3	General Leaks	n/a			No leaks noted
V4	Vibration	n/a			
V5	Dissimilar Flange Rating	Good			Similar ratings
V6	Ladder/Stairway	Good	Ladder, platform		Secure, safety chain across platform opening present
V7	Heads	Good			No corrosion or damage
V8	Guy Wires	n/a			
V9	Electrical Ground	Good	Attached to Saddle support		Present and secure
V10	Painted Inactive Corrosion	n/a			
V11	Coating/Painting	Good	Vessel shell, flanges, piping		Some minor areas of paint deterioration, a few to bare steal, no corrosion
V12	Expansion Joint or Bellows	n/a			
V13	Gauge/Site Glass	Good	Psi, level, temp		Gauges clear and legible
V14	Shell	Good			No corrosion or damage
V15	Jacket	n/a			
V21	Support Other (Please explain)	Good	Piping		Well supported
V22	Foundation	Good			Bolted to steel structure / steel piles
V23	Anchor Bolts	Good			Appear secure, limited visual
V24	Saddle/Skirt	Good	Saddle		bolted to I beam, saddle seal welded
V25	Davit	n/a			
V26	Fireproofing	Good	Steel piles / supports		Some fireproofing damage at base of supports directly above ground
V31	Connections Other (Please explain)	Good			All connections appear secure
V32	Small Branches	Good	Tubing		No leaks or kinks
V33	Nozzles	Good			No damage or corrosion
V34	Manways	Good			Davit single nut only
V35	Reinforcing Pads	Good			Weepholes present, free of debris, no evidence of leaks
V36	Inadequate Thread Engagement	Good			Adequate
V37	Bolting	Good			All bolting tight and secure, no corrosion of threads
V38	Flanges	Good			No leaks or corrosion
V39	Leak Clamps	n/a			
V41	Insulation Other (Please explain)	n/a			
V42	Damage	n/a			
V43	Penetrations	n/a			
V44	Insulation Jacket	n/a			
V45	Banding	n/a			
V46	Seals/Joints	n/a			
V51	Relief Devices Other (Please explain)	Good	Top shell		PSV service up to date, South PSV set at MAWP. North PSV manifold set below MAWP
V52	Corrosion	n/a			None noted
V53	Leaks	n/a			None noted
V54	Restricted Inlet/Outlet	n/a			
V55	Manual Operation Lever	Good	PSV inlet isolation valves		Isolation valves carsealed open

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 14, 2014

SAP Equipment ID: 66004968

DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	n/a			
V2	Corrosion (depth, length, width)	n/a			
V3	Erosion	n/a			
V4	Distortion	n/a			
V5	Blisters	n/a			
V6	Deposits	n/a			
V7	Heads	n/a			
V8	Welds	n/a			
V9	Nozzles	n/a			
V10	Shell	n/a			
V11	Gasket Surfaces	n/a			
V21	Internals Other (Please explain)	n/a			
V22	Demister	n/a			
V23	Baffle/Wier	n/a			
V24	Sparger	n/a			
V25	Thermowells	n/a			
V26	Metallic Linings	n/a			
V27	Nonmetallic Linings	n/a			
V28	Trays	n/a			
V29	Tray Rings	n/a			
V30	Other Welded Attachments	n/a			

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

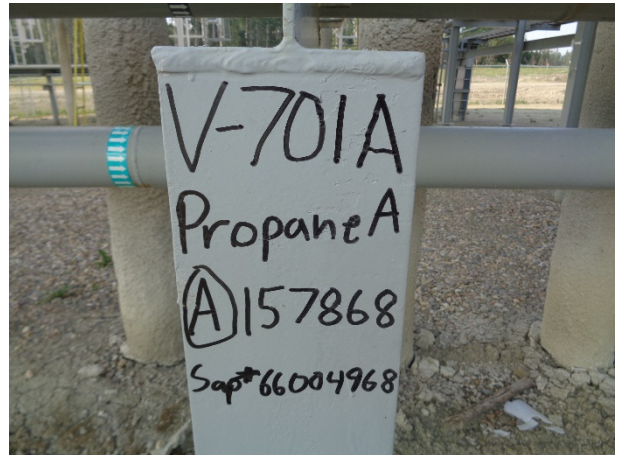
Date: JULY 14, 2014

SAP Equipment ID: 66004968

PHOTOS



LSD sign



Vessel information



Dataplate



Overview



Overview



Shell paint damage

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 14, 2014

SAP Equipment ID: 66004968

PHOTOS



Shell paint damage



Flange paint deterioration



Piping paint deterioration



Minor damage to fireproofing at base of supports



South PSV tag



South PSV service tag

PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 07-27-051-19W5M

Date: JULY 14, 2014

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PHOTOS



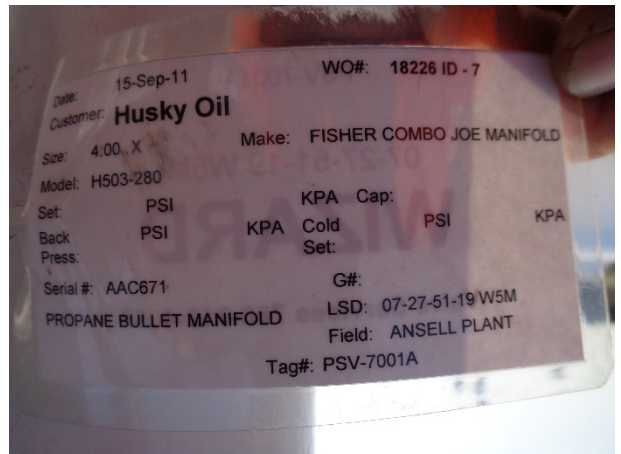
South PSV Dataplate



South PSV and North PSV manifold overview



North PSV manifold tag



North PSV manifold service tag



North PSV manifold Dataplate

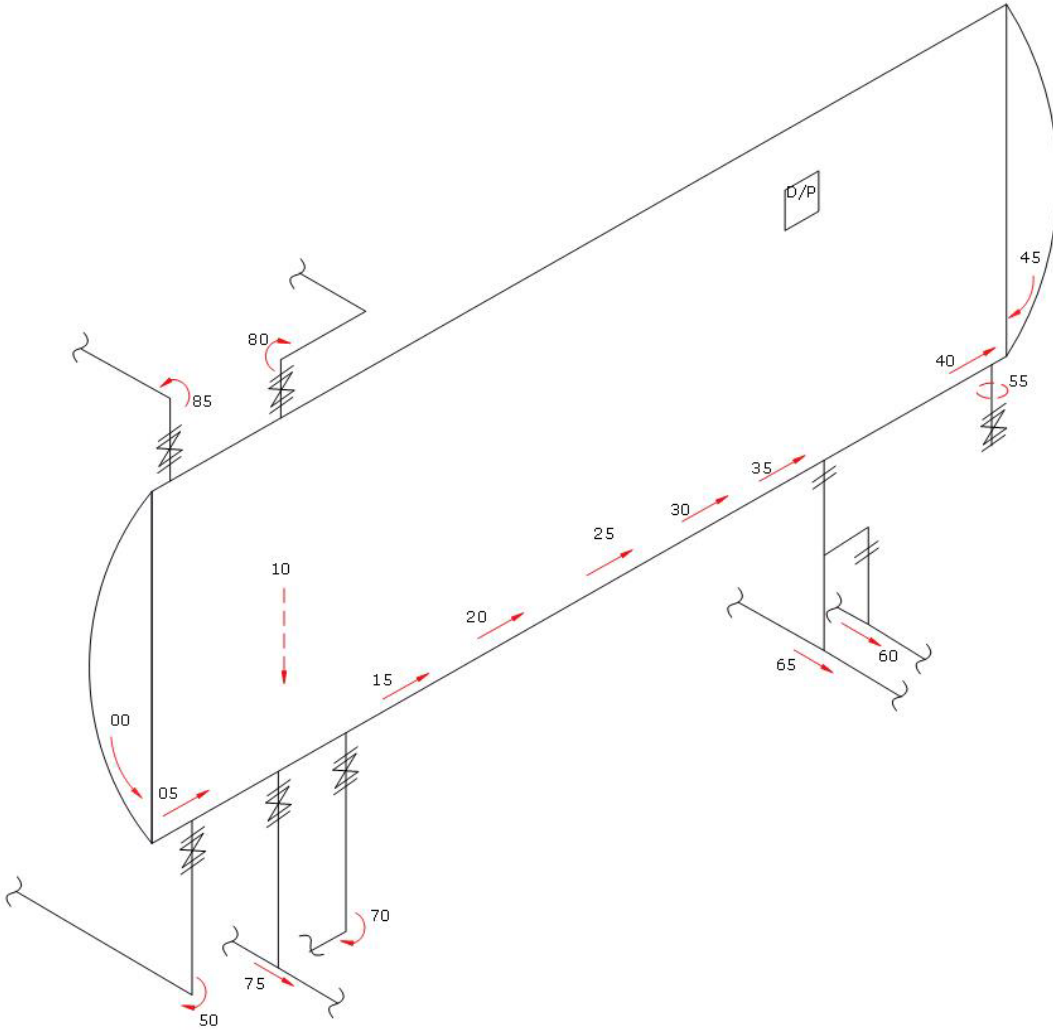


North PSV manifold individual PSV info

Location Name:	ANSELL GAS PLANT	LSD:	07-27-051-19W5
A#:	A0157868	Equipment/Tag No.	V-701A
Equipment Description:	PROPANE A	Serial Number:	1668-201A
		CRN: (or other ID#)	F-1007.2
MAWP:	280 PSI	Design Temp:	154°F
Shell Material:	SA 516 70	Head Material:	SA 516 70
Shell Thickness:	1.220"	Head Thickness:	1.375"
Corrosion Allowance:	0.063"	Date Built:	1984
Size:	144"	Manufacturer:	N/A

Notes:









Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157868	Tag Number: V-701A	Vessel Name: Propane A
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201A
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF:
	MAWTF: 154°F	

TML Description	Baseline	Material: SA-516-70
00 Head	2014	Flag CA Nominal T Min Corr. Rate
Shape: Ellipsoidal	Min 36.780	33.325 1.600 34.925
OD: 144"	Avg 36.960	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
05 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 31.320	29.388 1.600 30.988
OD: 144"	Avg 31.620	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
10 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 31.600	29.388 1.600 30.988
OD: 144"	Avg 31.900	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
15 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 32.130	29.388 1.600 30.988
OD: 144"	Avg 32.210	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157868	Tag Number: V-701A	Vessel Name: Propane A
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201A
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF:
	MAWTF: 154°F	

TML Description	Baseline	Material: A-234-WPB
20 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 32.230	29.388 1.600 30.988
OD: 144"	Avg 32.310	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
25 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 32.180	29.388 1.600 30.988
OD: 144"	Avg 32.360	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
30 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 31.700	29.388 1.600 30.988
OD: 144"	Avg 31.880	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
35 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 31.980	29.388 1.600 30.988
OD: 144"	Avg 32.130	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157868	Tag Number: V-701A	Vessel Name: Propane A
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201A
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF: 154°F

TML Description	Baseline	Material: A-234-WPB
40 Shell	2014	Flag CA Nominal T Min Corr. Rate
Shape: Cylindrical	Min 31.240	29.388 1.600 30.988
OD: 144"	Avg 31.570	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: SA-516-70
45 Head	2014	Flag CA Nominal T Min Corr. Rate
Shape: Ellipsoidal	Min 37.570	33.325 1.600 34.925
OD: 144"	Avg 37.900	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: A-234-WPB
50 Piping	2014	Flag CA Nominal T Min Corr. Rate
Shape: 90° Elbow	Min 5.610	4.801 0.686 5.486
OD: 3.5"	Avg 5.970	
Spec: ASME B31.3	Comments:	Remaining Life: Retirement Date:

TML Description	Baseline	Material: A-234-WPB
55 Nozzle	2014	Flag CA Nominal T Min Corr. Rate
Shape: 360° Circ	Min 8.710	7.623 1.089 8.712
OD: 2.375"	Avg 9.020	
Spec: ASME VIII Div.1	Comments:	Remaining Life: Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157868	Tag Number: V-701A	Vessel Name: Propane A
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201A
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF:
	MAWTF: 154°F	

TML Description	Baseline	Material: A-234-WPB
60 Piping	2014	Corr. Rate
Shape: Tee	Min 7.820	Flag 4.801
OD: 3.5"	Avg 9.070	CA 0.686
Spec: ASME B31.3	Comments:	Nominal 5.486
		T Min
		Remaining Life:
		Retirement Date:

TML Description	Baseline	Material: A-234-WPB
65 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 11.630	Flag 7.156
OD: 8.625"	Avg 11.840	CA 1.022
Spec: ASME B31.3	Comments:	Nominal 8.179
		T Min
		Remaining Life:
		Retirement Date:

TML Description	Baseline	Material: A-234-WPB
70 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 3.480	Flag 3.423
OD: 2.375"	Avg 3.940	CA 0.489
Spec: ASME B31.3	Comments:	Nominal 3.912
		T Min
		Remaining Life:
		Retirement Date:

TML Description	Baseline	Material: A-234-WPB
75 Piping	2014	Corr. Rate
Shape: Tee	Min 7.370	Flag 3.423
OD: 2.375"	Avg 8.280	CA 0.489
Spec: ASME B31.3	Comments:	Nominal 3.912
		T Min
		Remaining Life:
		Retirement Date:



Ultrasonic Corrosion Survey

Survey Name: Husky Energy

Date: Jul 14, 2014

Inspector: C. Graham

LSD: 07-27-051-19W5	Area: Ansell	Location: Gas Plant
A #: A0157868	Tag Number: V-701A	Vessel Name: Propane A
CRN: F-1007.2	Year Built: 1984	Serial Number: 1668-201A
	Vessel CA: 1.6002 mm	Manufacturer:
	Shell MAWP: 280psi	Tube MAWP: MAWTF:
	MAWTF: 154°F	

TML Description	Baseline	Material: A-234-WPB
80 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 5.310	Flag 4.801
OD: 3.5"	Avg 5.440	CA 0.686
Spec: ASME B31.3	Comments:	Nominal 5.486
		T Min
		Remaining Life:
		Retirement Date:

TML Description	Baseline	Material: A-234-WPB
85 Piping	2014	Corr. Rate
Shape: 90° Elbow	Min 4.845	Flag 4.845
OD: 2.375"	Avg	CA 0.692
Spec: ASME B31.3	Comments:	Nominal 5.537
		T Min
		Remaining Life:
		Retirement Date:

A157868

FORM U-1A 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

A157868

1. Manufactured and certified by Vada Ind. Steel-Flo Div. 100 Stockton Ave. Okotoks, Alberta

2. Manufactured for Cord Project Ltd. 4th Floor, 10201 Southport Rd. S.W. Calgary, Alta

3. Location of installation User-Western Decalta L.S.D.-10-12-19-2-W5M

4. Type Horizontal 1668-201 A F1007.2 SFV 1666-201 Rev.3 1984

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 1983

to Winter 1983

6. Shell: SA 516-70 1.250 .063 11' 8 1/2" 76'0"

7. Seams: DBL Butt full 1.0 N/A DBL Butt Partial 7

8. Heads: (a) Matl. SA 516-70 (b) Matl. _____

	Location (Top Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Concave or Convex)
(a)	Ends	1.190"	.063			2:1			12'0"	Concave
(b)										

If removable, bolts used (describe other fastenings) _____

9. MAWP Int'l-280/Ext'l-15 psi at max. temp. 154 °F Min. temp. (when less than -20°F) _____ °F. Hydro., pneu., or comb. test pressure 420 psi.

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Thick.	Reinforcement Matl.	How Attached	Location
See Remarks								

11. Supports: Skirt No Lugs (No) Legs 2 Other (Describe) Attached Welded to shell

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commission Inspectors have been furnished for the following items of the report: See attached U4 form for Item 10

Volume-8123 Ft.³
Cord Projects P.O. #PCL-177-2000-1
Propane Storage Tank

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. 18,180 expires Jan 6, 1986

Date OCTOBER 29, 1984 Co. name Vada Ind. Steel-Flo Div Signed _____ (Manufacturer)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Vada Ind. Steel-Flo Div at 100 Stockton Ave. Okotoks

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 General Safety Services, Boilers Branch

have inspected the component described in this Manufacturer's Data Report on OCTOBER 29, 1984, and state that, to the best of my knowledge and belief, the vessel was constructed 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 OCTOBER 29, 1984 Signed _____ (Authorized Inspector) Commission _____ (National Board/State/Province and No.)

A157868

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
A required by the Provisions of the ASME Code Rules, Section VIII, Division 1

①157868

- 1. Manufactured and certified by Vada Ind. Steel-Flc Div, 100 Stockton Ave, Okotoks, Alberta
(Name and address of manufacturer)
- 2. Manufactured for Cord Project Ltd. 4th Floor, 10201 Southport Rd.S.W. Calgary, Alberta
(Name and address of purchaser)
- 3. Location of installation User-Western Decalta L.S.D.-10-12-19-2-W5M
(Name and address)
- 4. Type Horizontal 1668-201 A F1007.2 SFV 1666-201 Rev.3 1984
(Horiz. vert. tank, etc.) (Mfg's serial No.) (CRN) (Dwg) (Nat'l Bd. No.) (Year built)

Date Report
Item Number

Remarks

Purpose	No.	Diam Size	Type	Material	Nom. Thk.	Reinforce Material	How Att.	Location
Inlet	1	2"	RFWN	SA 106-B	.343"	Weld Metal	Welded	Shell
Outlet	1	8"	RFWN	SA 333-6	.500"	SA 516-70	Welded	Shell
Vent	1	2"	RFWN	SA 106-B	.343"	Weld Metal	Welded	Shell
Drain	1	2"	RFWN	SA 106-B	.343"	Weld Metal	Welded	Shell
Spare	1	2"	RFWN	SA 106-B	.343"	Weld Metal	Welded	Shell
Bridle	2	3"	RFWN	SA 333-6	.437"	SA 516-70	Welded	Shell
P.S.V.	2	4"	RFWN	SA 106-B	.531	SA 516-70	Welded	Shell
Temp. Conn.	1	1"	CPLG	SA 105	3000#	Weld Metal	Welded	Shell
Manway	1	20"	RFWN	SA 106-B	.500"	SA 516-70	Welded	Shell

Date OCTOBER 29 1984 Co. name Vada Ind Steel-Flc Div Signed [Signature]
(Manufacturer) (Responsible)

Date OCTOBER 29 1984 Signed [Signature] Commissions _____
(Authorized Inspector) (Nat'l Board (incl endorsements), State, Prov., and No.)

A157868

FORM U-2 MANUFACTURERS' PARTIAL DATA REPORT

A157868

A part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

CERTIFIED &

1. (a) Manufactured by Hackney, Inc. P.O. Box 938, Navasota, Texas 77868
 (b) Manufactured for Steel Flo Division, P.O. Box 850, Okotoks, Alberta, Canada T0L1T0
2. (Mfgs. Ser. No. of Part) 5905 (CRN) NA (Dwg.) N13118-01 (Nat'l Bd. No. of Part) NA (Year Built) 1984
3. (a) Drawing Prepared by Hackney, Inc.
 (b) Description of Part Inspected two (2) piece head construction
4. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The construction and workmanship conform to ASME Rules, Section VIII, Division 1, 1984 (Year) and Addenda through _____ (Date) and Code Case No. _____

5. Special Service per UG-120(d) _____
 6. Postweld Heat Treatment: Temperature 1125 °F. Time 90 min.
 Items 7-12 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers

7. Shell: _____
 Mat'l. (Spec. No., Grade) _____ Nom. Thk. (in.) _____ Corr. Allow. (in.) _____ Diam. (ft. & in.) _____ Length (over all) (ft. & in.) _____
 8. Seams: Longitudinal _____ (Welded, Dbl., Sngl., Lap, Butt) R.T. _____ (Spot or Full) Efficiency _____ %
 H.T. Temp. _____ °F. Time _____ (Hr.) Girth _____ (Welded, Dbl., Sngl., Lap, Butt)
 R.T. _____ No. of Courses _____
 (Spot, Partial, Or Full)

9. Heads (a) Material SA516-70 (Spec. No., Grade) (b) Material _____ (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)	HU#3	1.198		127	24.35	2:1				
(b)										

- If removable, bolts used (describe other fastenings) _____ (Material, Spec., No., Grade, Size, No.)
 10. Type of Jacket _____ Proof Test _____
 11. Jacket Closure _____ (Describe as ogee & weld, bar, etc.) If bar, give dimensions _____
 If bolted, describe or sketch _____
 12. 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 13 and 14 to be completed for tube sections

13. Tubesheets: Stationary Mat'l. (Spec. No., Grade) _____ Diam. (in.) (Subject to pressure) _____ Nom. Thk. (in.) _____
 Floating Mat'l. (Spec. No., Grade) _____ Diam. (in.) _____ Nom. Thk. (in.) _____
 14. Tube Material _____ (Spec. No., Gr.) O.D. _____ in. Nominal Thickness _____ in. or gauge
 Number _____ Type _____ (Straight or "L")

RECEIVED
 DATE July 30 1984
 QUANTITY _____
 PRICE _____
 EXTENSIONS _____

- Items 15-18 incl. to be completed for inner chamber of jacketed vessels or channels of heat exchangers
 15. Shell: Material _____ (Spec. No., Grade) Nominal Thickness _____ in. Corrosion Allowance _____ in.
 Diam. _____ ft. _____ in. Length _____ ft. _____ in.
 16. Seams: Longitudinal _____ (Welded, Dbl., Sngl., Lap, Butt) R.T. _____ (Spot or Full) Efficiency _____ %
 H.T. Temp. _____ °F. Time _____ (Hr.) Girth _____ (Welded, Dbl., Sngl., Lap, Butt) R.T. _____ (Spot, Partial or Full) No. of Courses _____
 17. 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	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)										
(b)										

18. 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 below to be completed for all vessels where applicable

19. Safety Valve Outlets: Number _____ Size _____ Location _____

20. Nozzles:

PURPOSE (INLET, OUTLET, DRAIN)	NUMBER	DIAM. OR SIZE	TYPE	MATERIAL	NOMINAL THICKNESS	REINFORCEMENT MATERIAL	HOW ATTACHED

21. Inspection Openings:
 Manholes No. _____ Size _____ Location _____
 Handholes No. _____ Size _____ Location _____
 Threaded No. _____ Size _____ Location _____

22. Supports: Skirt _____ Lugs (Yes or No) _____ (No.) _____ Legs _____ (No.) _____ Other _____ (Describe)
 Attached _____ (Where and how)

23. Remarks: 144 OD 1-1/2 NOM 1.198 MIN ELIP SA516-70

Double Butt Weld 100% X-Ray Code WEIX/WEIY

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

Date 7-19-84 Signed Hackney, Inc. (Manufacturer) by *Cary Harker* (Representative)

"U" Certificate of Authorization No. 11,008 expires June 30th, 19 86

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 Texas and employed by Employers Casualty Co. of Dallas, Texas have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on July 19 19 84, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 7-23-84

Signed *Stephen P. Smith* (Authorized Inspector) Commissions *Texas* (Natl. Board, State Province and No.)

AIS 7868

(A) 157868

FORM U-2 MANUFACTURERS' REPORT
A part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

CERTIFIED &

1. (a) Manufactured by HACKNEY, INC. PO BOX 938 NAVASOTA, TEXAS 77268
 (b) Manufactured for STEEL FLO DIV VERITAS RESOURCE SVC LTD PO BOX 853 OKTOKS ALB CAN
2. 5922 NA NI3118-02 NA 1984
 (Mfgs. Ser. No. of Part) (CRN) (Dwg.) (Nat'l Id. No. of Part) (Year Built)
3. (a) Drawing Prepared by HACKNEY, INC.
 (b) Description of Part Inspected 2 (TWO) PIECE CONST HEAD
4. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The construction and workmanship conform to ASME Rules, Section VIII, Division 1, 1983
 (Year)
 and Addenda through _____ and Code Case No. _____
 (Date)

5. Special Service per UG-120(d) _____
 6. Postweld Heat Treatment: Temperature 1125 °F. Time 90 MINUTES
 Items 7-12 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers

7. Shell: _____
 (a) Material (Spec. No., Grade) _____ Nom. Thk. (in.) _____ Cor. Allow. (in.) _____ Diam. (ft. & in.) _____ Length (over all) (ft. & in.) _____
 (b) Joints: Longitudinal _____ R.T. _____ Efficiency _____ %
 (Welded, Dbl., Sngl., Lap, Butt) (Spot or Full)
 H.T. Temp. _____ °F. Time _____ (Hr.) Girth _____
 (Welded, Dbl., Sngl., Lap, Butt)
 R.T. _____ No. of Courses _____
 (Spot, Partial, or Full)

9. Heads: (a) Material SA516-70 (Spec. No., Grade) _____ (b) Material _____ (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) ID #1	1.198		127	24.35	2:1				
(b)									

- If removable, bolts used (describe other fastenings) _____ (Material, Spec., No., Grade, Size, No.)
 10. Type of Jacket _____ Proof Test _____
 11. Jacket Closure _____ If bar, give dimensions _____
 (Describe as ogee & weld, bar, etc.)
 If bolted, describe or sketch.
 12. Constructed for max. allowable working pressure _____ psi at max. temp. _____ °F. Min. temp. _____ °F. (when less than -20°F.)
 Hydrostatic, pneumatic, or combination test pressure _____ psi.
 Items 13 and 14 to be completed for tube sections

13. Tubesheets: _____
 Stationary Matl. (Spec. No., Grade) _____ Diam. (in.) (Subject to pressure) _____ Nom. Thk. (in.) _____ Cor. Allow. (in.) _____ Attach. (W.J., Bolted) _____
 Floating Matl. (Spec. No., Grade) _____ Diam. (in.) _____ Nom. Thk. (in.) _____ Cor. Allow. (in.) _____

14. Tubes: Material _____ (Spec. No., Gr.) _____ O.D. _____ in. Nominal Thickness _____ in. _____ gauge
 Number _____ Type _____ (Straight or "U")
 DATE Aug 3 1984

- Items 15-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers
 15. Shell: Material _____ (Spec. No., Grade) _____ Nominal Thickness _____ in. _____
 Diam. _____ ft. _____ in. Length _____ ft. _____ in. _____
 PRICE _____
 16. Seams: Longitudinal _____ R.T. _____ Efficiency _____ %
 (Welded, Dbl., Sngl., Lap, Butt) (Spot or Full)
 H.T. Temp. _____ °F. Time _____ (Hr.) Girth _____
 (Welded, Dbl., Sngl., Lap, Butt) (Spot, Partial or Full)
 EXTENSIONS _____ No. of Courses _____

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

18. 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 below to be completed for all vessels where applicable

19. Safety Valve Outlets: Number _____ Size _____ Location _____

20. Nozzles:

PURPOSE (INLET, OUTLET, DRAIN)	NUMBER	DIAM. OR SIZE	TYPE	MATERIAL	NOMINAL THICKNESS	REINFORCEMENT MATERIAL	HOW ATTACHED

21. Inspection Openings:

Manholes No. _____ Size _____ Location _____
 Handholes No. _____ Size _____ Location _____
 Threaded No. _____ Size _____ Location _____

22. Supports: Skirt _____ Lug: _____ Legs _____ Other _____
 (Yes or No) (No.) (No.) (Describe)

Attached _____ (Where and how)

23. Remarks: 144 OD 1-1/2 NOM 1.198 MIN ELIP SA516-70 HEAD

DOUBLE BUTT WELD 100% X-RAY CODE WFSC/WCJX

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

Date 7/26/84 Signed HACKNEY, INC. by Cary Hackler
 (Manufacturer) (Representative)

"U" Certificate of Authorization No. 11,008 expires JUNE 30TH, 19 86

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 TEXAS and employed by EMPLOYERS CASUALTY CO of DALLAS, TEXAS have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on JULY 26, 19 84, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturers' Partial 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 7/30/84

Signed Steph Jensen
 (Authorized Inspector)

Commissions TEXAS-915
 (Natl. Board, State Province and No.)