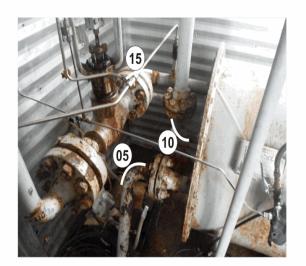
Equipment Inventory

Western Quality Services

District	Facility	Provincial No.	<u>Type</u>	<u>EquipName</u>	Location	Interval	Next Inspection	FlagComm
St. Albert - North	PEMBINA	0199003	Pressure Vessel	LINE HEATER	11-24-050-07W5	0	Apr 25/14	Reading below TMin

			GENER	AL PRESSURE	VESSEL INFO	RMATION				
District: St	. Albert - No	orth			Skid No.:					
Facility: Pl	MBINA				Location (LSD): 11-24-050-07W5					
Name & Equip No	: LINE	HEATER			Orientation:	Horizontal				
Company: Cl	NRL				Cost Code:					
Status: O	perating				Operating Pro	ovince: Alberta				
Unit:					W.O/P.O No.:					
Registration Num	Registration Number: 0199003				Registration N	lumber (Other):				
Serial Number:	PEJ1132				CRN Number:	E2579.2				
National Board:					Unique ID:		(ONCOR ID:	153684	
			PR	ESSURE VESSI	L NAMEPLAT	E DATA				
Internal Clad:			Painted:	Yes	Hand Hole:					
Insulated:	No				Support Type	Saddle				
Capacity:		М3			MDMT:		(F) 0.	00	(C)	
MAWP:		1,400.00 (psi) 9652.7	72 (Kpa)	AT temperature	e: 150.00	(F)	65.56	(C)	
Size (diam. x leng	Size (diam. x length): 30.00 x 112.00(In) 762.00 x 844.80 (mm)			0 x .844.80(mm)	Manufacturer:	DACRO				
X-Ray: No	ne				Lining Or Coate	d:				
Year Built: 19	981				Heat Treatment	t:				
Code parameters:					Corrosion allowance: (In) 0.00 (mm)					
Nozzle Rating:			lb AN	ISI	Manway:	anway: Yes Manway			(In)	
				PIPING NA	MEPLATE DAT	Ά				
Primary Flange Ra	ating:	1500			ASME B16.5 - Table 2-1.1 @ 150F: 3705 (psi)					
Pressure Use For	TMin:	Vess Design	Press		Piping Operating Press: 1400 (psi)				(psi)	
Stress Value:	20000	(psi)			E Value:			1		
Comments:										
			SERVICE (CONDITIONS-	INDICATE AL	L THAT APPLY				
Sweet		Sour		Oil		Gas		Water		
Amine		LPG		Condensate		Air		Glycol		
Other (Describe):										
	,			СОМР	ONENTS	•				
Name	Joint Effi	ciency	Outside Diameter(in.)	He	ad Type	Material Type		tress e (PSI)	Nominal Thickness(Inch)	
SHELL	1	.00	30.00			Unknown		15000		
HEAD	1	.00	30.00		Flat	Unknown		15000		







NOTES: A#0199003

ULTRASONIC CORROSION SURVEY REPORT

EQUIP NAME:LINE HEATERSERIAL #:PEJ1132DISTRICT:St. Albert - NorthPROV REG:0199003CRN:E2579.2FACILITY:PEMBINAEQUIP #:LSD:11-24-050-07W5

SUMMARY

TYPE	LAST INSPECTION	INSPECTION INTERVAL (YEARS)	CORROSION RATE (IN/YR) SHORT TERM LONG TERM		REMAINING LIFE (YEARS)	NEXT INSPECTION DATE
VESSEL	Apr 25, 2014	0.0	0.0000	0.0000	0.0	Apr 25, 2014
PIPING	Apr 25, 2014	0.0	0.0009	0.0009	56.6	7 Api 23, 2017

VESSEL SURVEY READINGS

		POIN	T DATA (I	NCH)	SURVEY	READING	SS		CALCUL	ATIONS		
POINT NUMBER	TYPE	NOM.	C.A.	NOM-CA	DATE	LOW	AVG	T Req (inch)	short term corr rate	long term corr rate	remaining life	Flag
20	SHELL	0.0000	0.0000	0.0000	Apr 25/14	0.257	0.265	1.350	0.0000	0.0000	0.0	LOW RDG IS MORE THAN 10% BELOW Tmin
25	SHELL	0.0000	0.0000	0.0000	Apr 25/14	0.247	0.250	1.350	0.0000	0.0000	0.0	LOW RDG IS MORE THAN 10% BELOW Tmin

PIPING SURVEY READINGS

		POINT DATA (INCH) SURVEY		READING	READINGS CALCULATIONS								
POINT			Mill	NOM-				T Req	short term	long term	remaining	Flag	
NUMBER	TYPE	NOM.	Tol./CA	CA	DATE	LOW	AVG	(inch)	corr rate	corr rate	life	i iug	
05	90L 2 STD	0.1540	0.0193	0.1347	Apr 25/14	0.127	0.150	0.083	0.0008	0.0008	56.6	NO COMMENTS	
10	90L 2 STD	0.1540	0.0193	0.1347	Apr 25/14	0.136	0.150	0.083	0.0005	0.0005	102.3	NO COMMENTS	
15	90L 2 XS	0.2180	0.0273	0.1907	Apr 25/14	0.187	0.200	0.083	0.0009	0.0009	116.7	NO COMMENTS	

Inspected By	Signature	CGSB Leve	CGSB	Survey Date	UT Equip	Due Date OF Calibration
Gordon Derewianko	lone	1	13896	04/25/2014	101_91637903_EPOCH4+	06/27/2014

Provincial/Identification No: 0199003 Equip. Number: Serial Number: PEJ1132

District:St. Albert - NorthFacility:PEMBINALocation:11-24-050-07W5Equip. Name:LINE HEATER

Inspected By: Duncan Kendrick #0787 Inspection Date: Apr 25, 2014

Futamed Tuescation Thomas	Condition	Comments
External Inspection Items	Condition	Committee
Insulation Verify sealed around manways, nozzels, no damage present, and these is no egress of moisture	Accept	ONLY OUTSIDE AND IN GOOD CONDITION
External Condition Assesses paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage)	Accept	IN GOOD CONDITION MINOR SURFACE RUST OCCURING
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc	N/A	
Skirt/Saddle Assess condition of paint, fire protection concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Ground wire attached?	Accept	IN GOOD CONDITION
Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation	Accept	IN GOOD CONDITION
Concrete Foundation Check for cracks, spalling, etc.	N/A	METAL
Ladder/Platform Describe general condition, ensure support is secure to vessel, describe any hazards.	N/A	
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted?	Accept	IN GOOD CONDITION
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/Temp.	Accept	IN GOOD WORKING CONDITION
External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion?	Accept	IN GOOD CONDITION MINOR SURFACE CORROSION OCCURING
Valving Ensure no leaks are visible. Valves are properly, supported and chained if necessary.	Accept	IN GOOD WORKING CONDITION
PSV Ensure PSV is set at pressure at or below that of vessel. Discharge piping is same size as inlet to valve and is properly supported and routed. Ensure no block valves between psv and vessel or if there are the are locked open.	Accept	SERVICED IN 2013 SERVICE SEAL IS GOOD
NDE Methods Was UT/MPI done on vessel (MI coordinator to review results)	Accept	UT/VE 2013
Other	N/A	

Recommendations or corrective actions: (Vessel is Fit for Service or describe corrective actions required)

VESSEL IS FIT FOR SERVICE

Chief Eric Jensen ABSA PESL #: 000239 Sign Off Date: Jun 4, 2014 Status: Accepted

Field Inspection Report

- CNRL

11,450

 Registration #:
 0199003
 Equipment Name:
 LINE HEATER
 Province:
 Alberta

 District:
 St. Albert - North
 LSD:
 11-24-050-07W5
 Location:
 PEMBINA

CRN: E2579.2 Skid Number: Service:

Manway: Yes Coating: Equipment Number:

MAWP (psi): 1400.00 (psi) **Temp:** 150.00 (F) **Serial Number:** PEJ1132

Outstanding NCR's: No No.: 0

General:

Safety Valves

Capacity Side: **MAWP** MAWP PSV No. **Set Press Set Press Imperial** Capacity Metric (psi) (kPa) (psi) (kPa) **Imperial** Units Metric Units Shell 1400.00 9652.72 500.00 3447.40 1830.00 SCFM Status: Operating **Examination Methods:** Access: Cleaning:

External Inspection

Inspection Date:	Apr 25, 2014	Inspection Interval:	1	Next Insp. Date:	
<u>Item</u>	Condition	Inspection Comments			
Insulation	Accept	ONLY OUTSIDE AND IN GOOD CONDITION			
External Condition	Accept	IN GOOD CONDITION MINOR SURFACE RUST O	CCURING		
Leakage	N/A				
Skirt/Saddle	Accept	IN GOOD CONDITION			
Anchor Bolts	Accept	IN GOOD CONDITION			
Concrete Foundation	N/A	METAL			
Ladder/Platform	N/A				
Nozzle	Accept	IN GOOD CONDITION			
Gauges	Accept	IN GOOD WORKING CONDITION			
External Piping	Accept	IN GOOD CONDITION MINOR SURFACE CORROS	SION OCCURING		
Valving	Accept	IN GOOD WORKING CONDITION			
PSV	Accept	SERVICED IN 2013 SERVICE SEAL IS GOOD			
NDE Methods	Accept	UT/VE 2013			
Other	N/A				
Recommendations:	VESSEL IS FIT F	OR SERVICE	Inspected By:	Duncan Kendrick	ABSA PESL #:0787

INSPECTOR: I have witnessed/done the above inspections and certify that they have been done in accordance with our

approved manual and that the information is accurate. I certify that the status of the Pressure equipment

detailed here is:

Suitable to be returned to service Repairs complete(AB-40 attached)
Repairs are still required: Suggested Inspection interval:

Inspector: Duncan Kendrick ABSA PESL #:0787 Signature: _____ Date: Apr 25, 2014

Pressure Safety Valve Summary

PSV Static Data

Client: CNRL

District: St. Albert - North Facility: PEMBINA

Location: 11-24-050-07W5

Description: Serial Number: 14600-39 CRN: OG1316.2C Manufacturer: TAYLOR

Model: T-8200-1 Code Stamp:

Inlet Size: 1 Outlet Size: 1

Side (Shell or Tube): Shell

PSV Service/Inspection

 Set Date:
 1 Sep, 2013
 Service Interval:
 60

 Set Pressure (psig):
 500
 Capacity (scfm):
 1830

Service Sealed Intact:

Block Valve Inlet:

Block Valve Outlet:

Block Valve Outlet Locked Open:

Service Company: Ref Number:

Condition: Prepopped Results:
Service Type: Installed Date:

Next Service Date: 1 Sep, 2018

Comments:

Equipment Protected

Reg #	Equip #	<u>Type</u>	<u>Name</u>	<u>Status</u>	<u>MAWP</u>
0176488		Pressure Vessel	SEPARATOR	Operating	500.00
0199003		Pressure Vessel	LINE HEATER	Operating	1400.00

PSV Number:

PSV Summary

PSV passes all summary checks.

Pressure Safety Valve Summary

PSV Static Data

CRN:

Client: CNRL

District: St. Albert - North Facility: PEMBINA

Location: 11-24-050-07W5

OG1316.2C

Description:

Serial Number: 14835-46
Manufacturer: TAYLOR

PSV Number:

Model: T-8200-1 Code Stamp:

Inlet Size: 1 Outlet Size: 1

Side (Shell or Tube): Shell

PSV Service/Inspection

 Set Date:
 1 Sep, 2013
 Service Interval:
 60

 Set Pressure (psig):
 100
 Capacity (scfm):
 403

Service Sealed Intact:

Block Valve Inlet: Block Valve Inlet Locked Open:

Block Valve Outlet: Block Valve Outlet Locked Open:

Service Company: D.V.METER Ref Number:

Condition: Prepopped Results: Service Type: Installed Date:

Next Service Date: 1 Sep, 2018

Comments:

Equipment Protected

Reg #	Equip #	<u>Type</u>	<u>Name</u>	<u>Status</u>	<u>MAWP</u>
		Pressure Vessel	FUEL GAS SCRUBBER	Operating	100.00
0199003		Pressure Vessel	LINE HEATER	Operating	1400.00

PSV Summary

PSV passes all summary checks.