


Enerplus Resources Visual External Inspection Report – Pressure Vessels

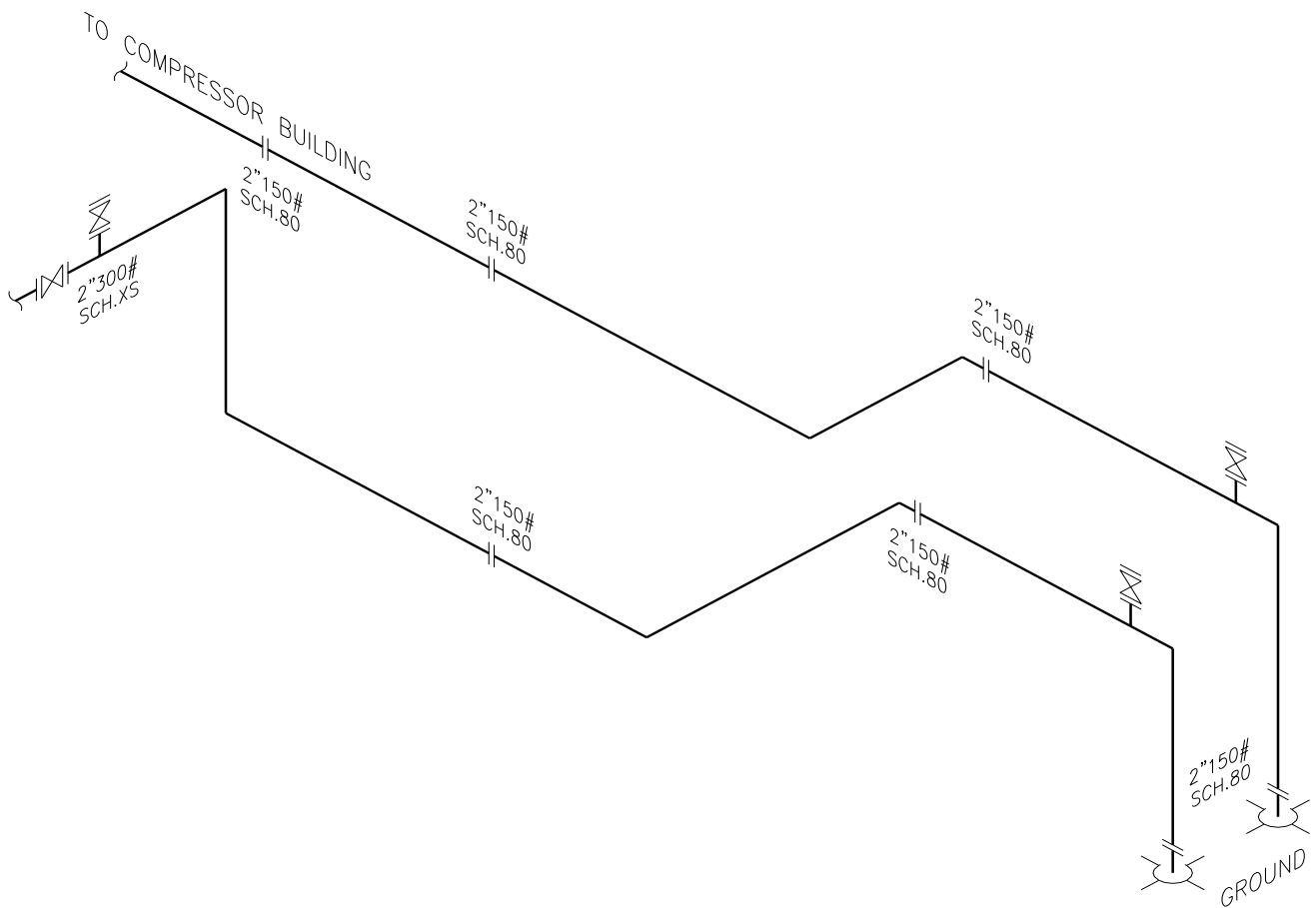
<input checked="" type="checkbox"/> Installation		<input type="checkbox"/> External		AI FR 023									
Date: November 29, 2012		Description: <input checked="" type="checkbox"/> Vessel <input type="checkbox"/> Exchanger <input type="checkbox"/> Boiler		E# E23052									
Inspector: Scott Abbott		Equipment Name: Propane Bullet		CRN# F398.2									
Agent Co: Integrity Testing Services		Jurisdiction # A0138997		Serial# 28319A									
Owner: Enerplus Resources		Manufacturer: Western Rock Bit Co.		Year Built: 1987									
District: Shallow Gas: Hanna		Field: Leo South		LSD: 100/11-20-035-17W4M									
Service: <input type="checkbox"/> Sweet <input checked="" type="checkbox"/> Sour				MDMT N/S									
Zones	MAWP	MAWT	PSV Set P	PSV Tag E#	PSV Manufacturer	PSV S/N#	PSV Inlet size	PSV Outlet size	PSV Serv. Co	PSV Serv. Date	PSV CSO? Y/N	PSV Capacity	
Shell Side	1724 kPa	46°C	1724 kPa	E59438 / E59439 / E59435 / E59436	Fisher	N/S	50.8mm	76.2mm	United Valve	11-May-2012	See comment	10203 SCFM	
Tube Side	-	-											
Other	-	-											
Shell		Head		Channel		Tube		Comment					
Material SA-516-70		SA-516-70											
Nominal T 21.37mm		21.23mm											
CA 1.58mm		1.58mm											
Orientation <input checked="" type="checkbox"/> Hor <input type="checkbox"/> Ver		Foundation: <input type="checkbox"/> Concrete <input type="checkbox"/> Gravel <input type="checkbox"/> Timbers <input checked="" type="checkbox"/> Steel		Condition Good condition									
Support	<input checked="" type="checkbox"/> Saddle <input checked="" type="checkbox"/> Seal Welded <input type="checkbox"/> Free to Move		Condition: Good condition										
	<input type="checkbox"/> Skirt <input type="checkbox"/> Free Of Debris		Condition:										
	<input type="checkbox"/> Hangers <input type="checkbox"/> Secure		Condition:										
	<input type="checkbox"/> Other:		Condition:										
Overall		General Condition: Secure and in good condition		Electical Grounding <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> None									
Ext. Surface <input checked="" type="checkbox"/> Painted <input type="checkbox"/> Insulated <input type="checkbox"/> Fire-proofed <input type="checkbox"/> Cladded		Condition:											
Ext. Fixtures <input checked="" type="checkbox"/> Ladder <input type="checkbox"/> Platform <input type="checkbox"/> Other													
Inspection Nozzles <input checked="" type="checkbox"/> Manway <input type="checkbox"/> Port		Size:		<input type="checkbox"/> Reinforcement Pad <input type="checkbox"/> Weep Hole Present									
Davit Arm <input checked="" type="checkbox"/> Present <input type="checkbox"/> Greased <input type="checkbox"/> Double nutted		Condition:											
Piping	<input type="checkbox"/> PSV <input type="checkbox"/> Supported <input type="checkbox"/> Joined per code <input type="checkbox"/> Drains properly <input type="checkbox"/> Well Coated		Comment: N/A										
	<input checked="" type="checkbox"/> Inlet <input checked="" type="checkbox"/> Supported <input checked="" type="checkbox"/> Joined per code <input type="checkbox"/> Free from leaks <input checked="" type="checkbox"/> Well Coated		Comment: Good condition										
	<input checked="" type="checkbox"/> Outlet <input checked="" type="checkbox"/> Supported <input checked="" type="checkbox"/> Joined per code <input type="checkbox"/> Free from leaks <input checked="" type="checkbox"/> Well Coated		Comment: Good condition										
	<input checked="" type="checkbox"/> Drain <input checked="" type="checkbox"/> Supported <input checked="" type="checkbox"/> Joined per code <input type="checkbox"/> Free from leaks <input checked="" type="checkbox"/> Well Coated		Comment:										
	<input type="checkbox"/> Instrumentation <input type="checkbox"/> Supported		Free from leaks <input type="checkbox"/> Well Coated		Comment:								
	<input type="checkbox"/> Process fluid identified		Flow direction marked		Comment: N/A								
Valves	<input checked="" type="checkbox"/> Manual Isolation Valve <input type="checkbox"/> Free from leaks		Comment: Good condition										
	<input type="checkbox"/> Automated Control Valve <input type="checkbox"/> Free from leaks		Comment:										
	<input type="checkbox"/> Vents and Drains Plugged		Comment:										
Gauges	<input type="checkbox"/> Pressure Reading:		Condition: N/A										
	<input type="checkbox"/> Temperature Reading:		Condition: N/A										
Sight Glass <input type="checkbox"/> Fluid Level		Reading %		Condition: N/A									
Inspection Summary		PSV CSO was not at the time of the inspection. Confirmed all piping schedules and flange ratings to the P&D drawings. Vessel and associated piping in good condition. Truck off load piping was not completed at the time of inspection.											
Recommendations:		Nothing at this time.										NCR	
Integrity Status		Suitable for continued Service <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Immediate repairs required <input type="checkbox"/> Future repairs required											
Inventory Status <input checked="" type="checkbox"/> In service <input type="checkbox"/> Out of service <input type="checkbox"/> Stock													
Sign off	Inspection Interval				Years or Changed to								
	PSV Interval				Years or Changed to								
	Inspector Signature				Jurisdictional Inspector #		API 510# 30978 / IPV# 00424						
	Chief/Senior Signature (if needed)				Jurisdictional Inspector #								

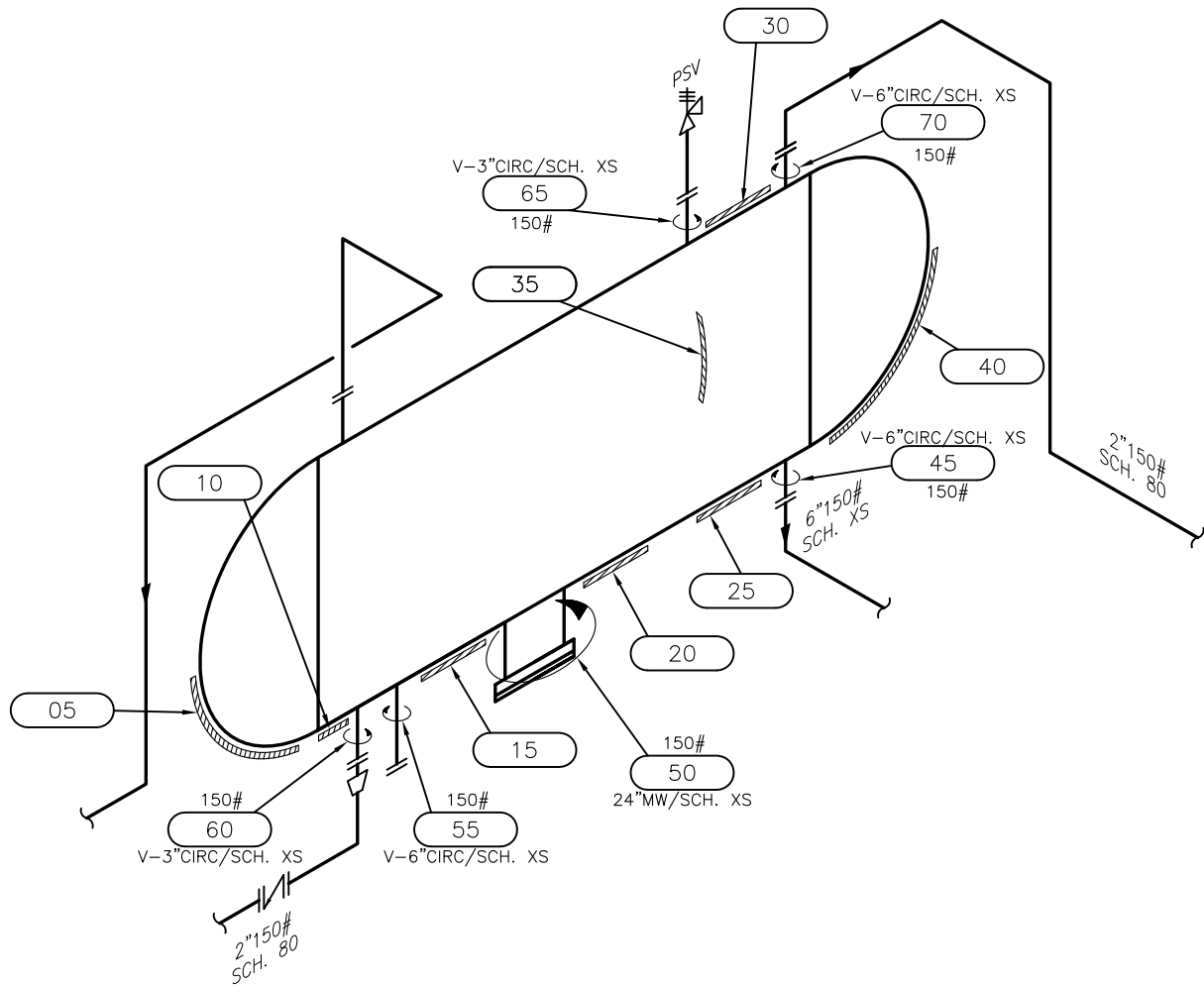
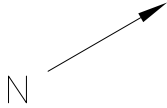
Form Last Revised xxxx

Enerplus_VT Report Vessel External Rev 5

Extra Comments

NOTE: 1. ALL PIPING FLANGE RATINGS MATCH P&ID DRAWINGS PROVIDED BY CLIENT.
2. PIPING SCHEDULE IS SUPPOSED TO BE SCH.40 BUT SCH.80/XS PIPING WAS USED.
3. NO UT THICKNESS MEASUREMENTS WERE TAKEN AT THE REQUEST OF RON SZOPA.





☐ Column ☐ Cooler ☐ Exchanger ☐ Furnace ☐ Heater ☐ Plate Exchanger ☐ Reboiler ☒ Vessel ☐ Other

Description:	PROPANE BULLET
PRN No.:	A0138997
Manufactures Serial No.:	28319A
CRN:	F398.2
Equipment No. (OIP):	E23052
National Board No.:	N/S
Other:	

Client., District., LSD., Etc.:

ENERPLUS RESOURCES
LEO - GOUGH LAKE GAS PLANT
11-20-035-17W4M

Tech.: SHA

Date: 11/2012

ITS Job No.: 2069

DWG No.: 032

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032
TML No.: 5 S HEAD T-B

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 25.52 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 25.10 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
5.01	21.23	1.58	19.65	21.23	N/A	25.70	0.0000	0.0000	100.00	.	NO
5.02	21.23	1.58	19.65	21.23	N/A	25.50	0.0000	0.0000	100.00	.	NO
5.03	21.23	1.58	19.65	21.23	N/A	25.40	0.0000	0.0000	100.00	.	NO
5.04	21.23	1.58	19.65	21.23	N/A	25.10	0.0000	0.0000	100.00	.	NO
5.05	21.23	1.58	19.65	21.23	N/A	25.70	0.0000	0.0000	100.00	.	NO
5.06	21.23	1.58	19.65	21.23	N/A	25.70	0.0000	0.0000	100.00	.	NO

TML No.: 10 BTM SH S-N

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 22.32 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 22.20 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
10.01	21.37	1.58	19.79	21.37	N/A	22.20	0.0000	0.0000	100.00	.	NO
10.02	21.37	1.58	19.79	21.37	N/A	22.20	0.0000	0.0000	100.00	.	NO
10.03	21.37	1.58	19.79	21.37	N/A	22.40	0.0000	0.0000	100.00	.	NO
10.04	21.37	1.58	19.79	21.37	N/A	22.50	0.0000	0.0000	100.00	.	NO
10.05	21.37	1.58	19.79	21.37	N/A	22.30	0.0000	0.0000	100.00	.	NO
10.06	21.37	1.58	19.79	21.37	N/A	22.30	0.0000	0.0000	100.00	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPIPE Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 15 BTM SH S-N

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 21.78 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 21.50 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
15.01	21.37	1.58	19.79	21.37	N/A	22.50	0.0000	0.0000	100.00	.	NO
15.02	21.37	1.58	19.79	21.37	N/A	21.50	0.0000	0.0000	100.00	.	NO *
15.03	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *
15.04	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
15.05	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
15.06	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *

TML No.: 20 BTM SH S-N

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 22.07 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 22.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
20.01	21.37	1.58	19.79	21.37	N/A	22.20	0.0000	0.0000	100.00	.	NO
20.02	21.37	1.58	19.79	21.37	N/A	22.00	0.0000	0.0000	100.00	.	NO
20.03	21.37	1.58	19.79	21.37	N/A	22.10	0.0000	0.0000	100.00	.	NO
20.04	21.37	1.58	19.79	21.37	N/A	22.00	0.0000	0.0000	100.00	.	NO
20.05	21.37	1.58	19.79	21.37	N/A	22.00	0.0000	0.0000	100.00	.	NO
20.06	21.37	1.58	19.79	21.37	N/A	22.10	0.0000	0.0000	100.00	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - If Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPIPE Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 25 BTM SH S-N

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 21.67 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 21.60 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
25.01	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
25.02	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
25.03	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *
25.04	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *
25.05	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
25.06	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *

TML No.: 30 TOP SHELL S-N

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 21.67 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 21.60 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
30.01	21.37	1.58	19.79	21.37	N/A	21.80	0.0000	0.0000	100.00	.	NO
30.02	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
30.03	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *
30.04	21.37	1.58	19.79	21.37	N/A	21.70	0.0000	0.0000	100.00	.	NO *
30.05	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *
30.06	21.37	1.58	19.79	21.37	N/A	21.60	0.0000	0.0000	100.00	.	NO *

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - If Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPIpe Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 40 N HEAD T-B

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 25.42 mm.

MATERIAL: SA51670

MINIMUM THICKNESS MEASURED: 25.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
40.01	21.23	1.58	19.65	21.23	N/A	25.80	0.0000	0.0000	100.00	.	NO
40.02	21.23	1.58	19.65	21.23	N/A	25.40	0.0000	0.0000	100.00	.	NO
40.03	21.23	1.58	19.65	21.23	N/A	25.40	0.0000	0.0000	100.00	.	NO
40.04	21.23	1.58	19.65	21.23	N/A	25.20	0.0000	0.0000	100.00	.	NO
40.05	21.23	1.58	19.65	21.23	N/A	25.00	0.0000	0.0000	100.00	.	NO
40.06	21.23	1.58	19.65	21.23	N/A	25.70	0.0000	0.0000	100.00	.	NO

TML No.: 45 6"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 13.08 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 12.70 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
45.01	10.97	1.58	9.39	10.97	N/A	12.70	0.0000	0.0000	100.00	.	NO
45.02	10.97	1.58	9.39	10.97	N/A	13.20	0.0000	0.0000	100.00	.	NO
45.03	10.97	1.58	9.39	10.97	N/A	13.20	0.0000	0.0000	100.00	.	NO
45.04	10.97	1.58	9.39	10.97	N/A	13.20	0.0000	0.0000	100.00	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

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(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 50 24"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 13.23 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 12.10 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
50.01	12.70	1.58	11.12	12.70	N/A	12.10	0.0000	0.0229	21.44	.	NO *
50.02	12.70	1.58	11.12	12.70	N/A	13.00	0.0000	0.0000	100.00	.	NO *
50.03	12.70	1.58	11.12	12.70	N/A	14.60	0.0000	0.0000	100.00	.	NO
50.04	12.70	1.58	11.12	12.70	N/A	13.20	0.0000	0.0000	100.00	.	NO

TML No.: 55 6"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 11.28 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 11.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
55.01	10.97	1.58	9.39	10.97	N/A	11.60	0.0000	0.0000	100.00	.	NO
55.02	10.97	1.58	9.39	10.97	N/A	11.10	0.0000	0.0000	100.00	.	NO *
55.03	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00	.	NO *
55.04	10.97	1.58	9.39	10.97	N/A	11.40	0.0000	0.0000	100.00	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 60 3"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 8.00 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 7.70 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
60.01	7.62	1.58	6.04	7.62	N/A	8.10	0.0000	0.0000	100.00	.	NO
60.02	7.62	1.58	6.04	7.62	N/A	7.70	0.0000	0.0000	100.00	.	NO *
60.03	7.62	1.58	6.04	7.62	N/A	8.00	0.0000	0.0000	100.00	.	NO
60.04	7.62	1.58	6.04	7.62	N/A	8.20	0.0000	0.0000	100.00	.	NO

TML No.: 65 3"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 8.78 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 7.50 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
65.01	7.62	1.58	6.04	7.62	N/A	9.70	0.0000	0.0000	100.00	.	NO
65.02	7.62	1.58	6.04	7.62	N/A	8.90	0.0000	0.0000	100.00	.	NO
65.03	7.62	1.58	6.04	7.62	N/A	7.50	0.0000	0.0051	100.00	.	NO *
65.04	7.62	1.58	6.04	7.62	N/A	9.00	0.0000	0.0000	100.00	.	NO

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.

Enerplus Resources

Unit: S-002

FACILITY:	LEO/GOUGH LAKE GAS PLANT	MANUFACTURER:	WESTERN ROCK
LSD:	100/11-20-035-17W4M	DESIGN PRESSURE:	1724 kPa / 250 psi
ITEM DESC.:	PROPANE BULLET	DESIGN TEMP.:	46 C / 115 F
EQUIP / OIP#:	E23052		
PROV. REG. #:	A0138997	VESSEL CORROSION ALLOWANCE:	1.58 mm
SERIAL #:	28319A		
CRN.:	F398.2	TOTAL CAUTION / ACTION TML:	0

Item # 032

TML No.: 70 6"NOZ NWSE 150#

DATE BUILT: 01/1987

AVERAGE THICKNESS MEASURED: 11.20 mm.

MATERIAL:

MINIMUM THICKNESS MEASURED: 11.00 mm.

Pts.	Nom. Thick. mm	CA + Steel Mfg.Tol. mm	Nom. -CA -Toll. mm	B/L Survey Thick. mm	Prev. Survey Thick. mm	Last Survey Thick. mm	Short Term CR mm/yr	Long Term CR mm/yr	Rem. Half Life yr	Future UT Reading mm/yy	Action/Caution Required Item
				01/1987		11/2012					
70.01	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00	.	NO *
70.02	10.97	1.58	9.39	10.97	N/A	11.80	0.0000	0.0000	100.00	.	NO
70.03	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00	.	NO *
70.04	10.97	1.58	9.39	10.97	N/A	11.00	0.0000	0.0000	100.00	.	NO *

If Baseline (B/L) Survey Thickness Measurement was not taken at the time of Manufacture, then Nominal Thickness is used as Baseline Thickness.
Minimum Thickness is calculated

Design Minimum Thickness = Nom. Thick. - CA - Manufacturing Steel Tolerance.

Manufacturing Tolerance of pipe and forged fittings is + or -12.5% (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

Manufacturing Tolerance of plate is + or - 0.25mm (0.010") (May or may not apply dependent upon the Client's Owner-User Integrity Management System).

(*) and GREEN Represent 25% of the last thickness readings, which have the shortest remaining half life.

BLUE (Caution TML Point) - if Corrosion Rate exceed a 0.250mm / 0.009 in. per yr. or Half Life is less than 15 years.

RED (Action TML Point) - If Remaining Half Life is 0 and Last Survey Thickness is below Nominal-CA-Tolerance Thickness.

CA - Corrosion Allowance, CR - Corrosion Rate (Brown if CR >= 0.500mm/yr.).

Calculated T-Min. Thickness - Using UPipe Mathematics.