

VISUAL INSPECTION REPORT – PRESSURE VESSEL

☐ Installation ☒ External		Report #:							
Date:	September 6, 2016	Description:	☒ Vessel ☐ Exchanger ☐ Furnace ☐ Boiler						
Inspector:	Donavon Granger	Unit #:	Equip #:						
Agent Co:	Streamline Inspection	Equip. Name:	LPG Bullet						
Owner:	CNRL	Jurisdiction #:	A0218190	CRN #:	C4936.2134				
Region:	Drumheller	Manufacturer:					Certified By:	WESTERN ROCK BIT	
Area:	Endiang	Year Built:	1984	S/N:	26904A				
Facility:	Plant	Location/LSD:	6-28-34-15W4	Capacity:	68.6m3				
Service (Shell Side)	☒ Sweet ☐ Sour ☐ Other	RT: 2	HT:	MAWP	250PSI	Design T	46C	MDMT	
Service (Tube Side)	☐ Sweet ☐ Sour ☐ Other	RT:	HT:	MAWP		Design T		MDMT	

PSV Data	Set P	Capacity	CRN	Tag #	S/N	Manufacturer	T / F	In. Sz	Out. Sz	IV	CSO	PSV Location
Shell Side							☐ T ☐ F					
Tube Side							☐ T ☐ F					
Other							☐ T ☐ F					
Serv. Co.					Last Serv. Date				Comments			

Components		Material	Nominal	CA	Comments
	Shell	SA516-70	19.76mm		
	Head	SA516-70	19.62mm		
	Channel				
	Tube				
	Other				Specify:

Foundation	☐ Concrete ☐ Gravel ☐ Timbers ☒ Steel ☐ Other:		Condition Acceptable
Support	☒ Saddle	☒ Seal-welded ☐ Free to Move	Condition Acceptable
	☐ Skirt	☐ Free of debris Comment:	Condition
	☐ Hangers	☐ Secure Comment:	Condition
	☐ Other	Specify:	Condition
Orientation	☒ Hor. ☐ Ver.	Dimensions: Diameter:2744mm Height: 12125mm Length:	Electrical grounding ☒ Direct ☐ Indirect ☐ None
Ext. Surface	☒ Painted ☐ Insulated ☐ Fire-proofed ☐ Cladded ☐ Other:		Condition Acceptable
Ext. Fixtures	☒ Ladder ☒ Platform(s) ☐ Other:		Condition Acceptable
Inspection Opening	☒ Manway ☐ Port ☐ Other	Size:	☐ Reinforcement Pads used ☐ Weep Holes Present
Davit Arm	☐ Present	☐ Greased ☐ Double Nuted	Condition

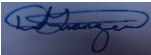


Bolting	☐ Short Bolting Noted		☒ Joined Per Code		Comments:
Piping	☐ PSV	☐ Supported	☐ Drains Properly	☐ Well Coated	Comment N/A
	☒ Inlet	☒ Supported	☒ Free from leaks	☒ Well Coated	Comment Acceptable
	☒ Outlet	☒ Supported	☒ Free from leaks	☒ Well Coated	Comment Acceptable
	☒ Drain	☒ Supported	☒ Free from leaks	☒ Well Coated	Comment Acceptable
	☒ Instrumentation	☒ Supported	☒ Free from leaks/kinks	Comment Acceptable	
	☒ Process Fluid Identified	☒ Flow Direction Marked		Comment Acceptable	
Valves	☒ Manual Valves		☒ Free from leaks	Comment Acceptable	
	☐ Automated Control Valve		☐ Free from leaks	Comment	
	☒ Vents and Drain plugged		Comment Acceptable		
Protective Devices	☒ Service Tags Present ☐ Calibration Current		Comments:		
Gauges	☐ Pressure	Reading:	Condition		
	☒ Temperature	Reading: 15C	Condition Acceptable		
Sight Glass	☐ Fluid Level	Reading:	Condition		

Inspection Summary	No issues with vessel at the time of inspection. PSV removed for service.				
Recommended Actions:					NCR
VESSEL STATUS					
Integrity Status	Suitable for Continued Service ☒ Yes ☐ No ☐ Immediate Repairs Required ☐ Future Repairs Required ☐ Replace				
Inventory Status	☒ In Service ☐ Out of Service ☐ Surplus ☐ Scrap				

Recommended Inspection Interval: 5 yrs.
 Recommended PSV Interval: ____ yrs.

IPV/IBPV Certificate #: 000752 API 510 Certificate #: 48529 PEI Certificate #:

Signature of In-Service Inspector: 

Recommended inspection intervals are based off of the current inspection

INSPECTION PHOTOGRAPHS



LSD Sign



Data Plate



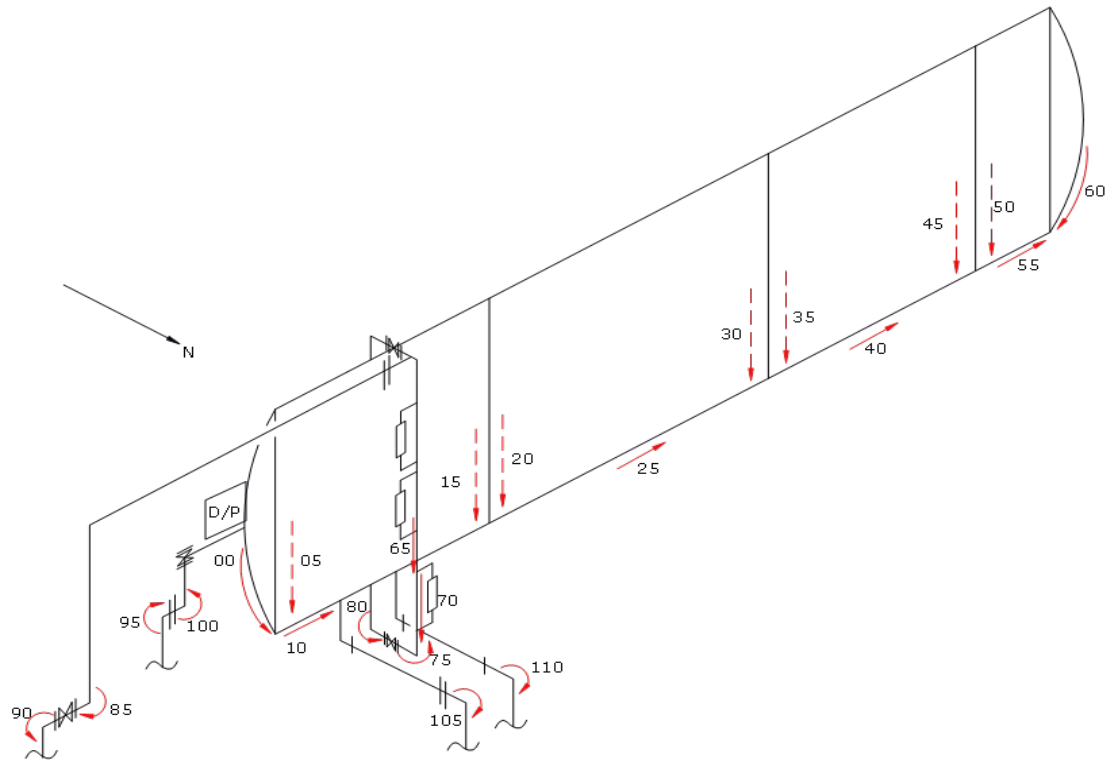
Vessel Overview



Location Name:	ENDIANG	LSD:	06-28-034-15 W4M
Jur #:	A0218190	Equipment/Tag No.	
Equipment Description:	PROPANE BULLET		
Manufacturer:	WESTERN ROCK BIT CO LTD		
Serial Number:	26904A	CRN:	C4936.2134
Shell MAWP:	250	PSI	Shell Design Temp: 115 °F
Tube MAWP:		PSI	Tube Design Temp: °F
Shell Material:	SA-516-70	Head Material:	SA-516-70
Shell Thickness:	0.778	in	Head Thickness: 0.772 in
Corrosion Allowance:	0	in	Date Built: 1984
Size:	108	in	Pipe / Rolled Plate: PLATE
RT:	2		Client DWG #:

NOTES: DIAMETER IS ID







Ultrasonic Corrosion Survey

*All values are in inches unless otherwise stated.

Survey Name: Canadian Natural

Date: Sep 6, 2016

Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: MAWTF: 115 °F
		MAWTF: °F
		Pipe/Plate
		PLATE

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
00 HEAD	2016	CA	T Min
Shape: Ellipsoidal	Min 0.859	Flag 0.772	STCR in/yr 0.0000
OD: 108	Avg 0.873	Nominal 0.772	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments: INCLUSION NOTED		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
05 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.809	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.813	Nominal 0.778	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
10 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.812	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.814	Nominal 0.778	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments: INCLUSION NOTED		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
15 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.805	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.810	Nominal 0.778	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:



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Survey Name: Canadian Natural

Date: Sep 6, 2016

Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: MAWTF: 115 °F
		MAWTF: °F
		Pipe/Plate
		PLATE

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
20 SHELL	2016	CA	T Min
Shape: Cylindrical	Min	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg	0.000	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments: INCLUSION NOTED	Nominal 0.778	Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
25 SHELL	2016	CA	T Min
Shape: Cylindrical	Min	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg	0.000	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:	Nominal 0.778	Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
30 SHELL	2016	CA	T Min
Shape: Cylindrical	Min	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg	0.000	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:	Nominal 0.778	Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
35 SHELL	2016	CA	T Min
Shape: Cylindrical	Min	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg	0.000	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments: INCLUSION NOTED	Nominal 0.778	Remaining Life:
			Retirement Date:



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Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: MAWTF: 115 °F
		MAWTF: °F
		Pipe/Plate
		PLATE

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
40 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.804	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.806	Nominal 0.778	LTICR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
45 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.800	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.808	Nominal 0.778	LTICR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
50 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.796	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.806	Nominal 0.778	LTICR in/yr 0.0000
Spec: ASME VIII Div.1	Comments: INCLUSION NOTED		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
55 SHELL	2016	CA	T Min
Shape: Cylindrical	Min 0.798	Flag 0.778	STCR in/yr 0.0000
OD: 108	Avg 0.802	Nominal 0.778	LTICR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:



Ultrasonic Corrosion Survey

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Survey Name: Canadian Natural

Date: Sep 6, 2016

Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: PSI
	MAWTF: 115 °F	MAWTF: °F
		Pipe/Plate PLATE

TML Description	Baseline	Flange ANSI:	Material: SA-516-70
60 HEAD	2016	CA	T Min
Shape: Ellipsoidal	Min 0.852	Flag 0.772	STCR in/yr 0.0000
OD: 108	Avg 0.864	Nominal 0.772	LTCR in/yr 0.0000
Spec: ASME VIII Div.1	Comments:		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-106-B
65 PIPING	2016	CA	T Min
Shape: Straight Pipe	Min 0.233	Flag 0.207	STCR in/yr 0.0000
OD: 4.5	Avg 0.239	Nominal 0.237	LTCR in/yr 0.0001
Spec: ASME B31.3	Comments: ASSUMED NOMINAL		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-106-B
70 PIPING	2016	CA	T Min
Shape: Straight Pipe	Min 0.244	Flag 0.207	STCR in/yr 0.0000
OD: 4.5	Avg 0.250	Nominal 0.237	LTCR in/yr 0.0000
Spec: ASME B31.3	Comments: ASSUMED NOMINAL		Remaining Life:
			Retirement Date:

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
75 PIPING	2016	CA	T Min
Shape: 90° Elbow	Min 0.150	Flag 0.135	STCR in/yr 0.0000
OD: 2.375	Avg 0.159	Nominal 0.154	LTCR in/yr 0.0001
Spec: ASME B31.3	Comments: ASSUMED NOMINAL		Remaining Life:
			Retirement Date:



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Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: MAWTF: 115 °F
		MAWTF: °F
		Pipe/Plate
		PLATE

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
80 PIPING	2016	Flag	CA
Shape: 90° Elbow	Min	0.135	0.019
OD: 2.375	Avg	0.139	0.154
Spec: ASME B31.3	Comments: ASSUMED NOMINAL, EROSION NOTED	T Min	0.100
		STCR in/yr	0.0000
		LTCR in/yr	0.0008
		Remaining Life:	40 Yrs
		Retirement Date:	2056

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
85 PIPING	2016	Flag	CA
Shape: 90° Elbow	Min	0.135	0.019
OD: 2.375	Avg	0.150	0.154
Spec: ASME B31.3	Comments: ASSUMED NOMINAL, CORROSION NOTED	T Min	0.100
		STCR in/yr	0.0000
		LTCR in/yr	0.0007
		Remaining Life:	46 Yrs
		Retirement Date:	2062

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
90 PIPING	2016	Flag	CA
Shape: 90° Elbow	Min	0.191	0.027
OD: 2.375	Avg	0.214	0.218
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	T Min	0.0000
		STCR in/yr	0.0004
		LTCR in/yr	0.0004
		Remaining Life:	
		Retirement Date:	

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
95 PIPING	2016	Flag	CA
Shape: 90° Elbow	Min	0.135	0.019
OD: 2.375	Avg	0.155	0.154
Spec: ASME B31.3	Comments: ASSUMED NOMINAL	T Min	0.0000
		STCR in/yr	0.0002
		LTCR in/yr	
		Remaining Life:	
		Retirement Date:	



Ultrasonic Corrosion Survey

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Inspector: D. Skeard

LSD: 06-28-034-15 W4M	Area: ENDIANG	Location: PLANT
Jur #: A0218190	Tag Number:	Vessel Name: PROPANE BULLET
CRN: C4936.2134	Year Built: 1984	Serial Number: 26904A
RT: 2	Vessel CA: 0.000 in	Manufacturer: WESTERN ROCK BIT CO LTD
	Shell MAWP: 250 PSI	Tube MAWP: MAWTF: 115 °F
		MAWTF: °F
		Pipe/Plate
		PLATE

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
100 PIPING	2016	Flag	CA Nominal T Min STCR in/yr LTCR in/yr
Shape: 90° Elbow	Min 0.199	0.191	0.027 0.218 0.0000 0.0006
OD: 2.375	Avg 0.211		Remaining Life:
Spec: ASME B31.3	Comments: ASSUMED NOMINAL, EROSION NOTED		Retirement Date:

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
105 PIPING	2016	Flag	CA Nominal T Min STCR in/yr LTCR in/yr
Shape: 90° Elbow	Min 0.209	0.189	0.027 0.216 0.0000 0.0002
OD: 3.5	Avg 0.219		Remaining Life:
Spec: ASME B31.3	Comments: ASSUMED NOMINAL		Retirement Date:

TML Description	Baseline	Flange ANSI: Unknown	Material: SA-234-WPB
110 PIPING	2016	Flag	CA Nominal T Min STCR in/yr LTCR in/yr
Shape: 90° Elbow	Min 0.159	0.135	0.019 0.154 0.0000 0.0000
OD: 2.375	Avg 0.164		Remaining Life:
Spec: ASME B31.3	Comments: ASSUMED NOMINAL		Retirement Date: