

CAPE MANUFACTURING LTD.

V-242338-1

12 3/4" OD x 3'-0" S/S

1440PSIG @ -20°F / 100°F

1/16" C.A.

CRN: R9415.231

549711

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS (Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only) As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

- 1. Manufactured and certified by Coriac Industries Ltd, Lot 9, County Energy Park, Lloydminster, AB T9V 3A2
2. Manufactured for Stettler Oil & Gas, PO Box 652, Stettler, Alberta, T0C 2L0
3. Location of installation "Built for Stock"
4. Type: Vertical PV-1328 R9415.231 EDS-6098 Rev. 3 N/A 2006

- 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
6. Shell: 2004 to 2005 N/A N/A
7. Seams: SA-106 B 0.688" 0.0625" 11-3/4" 3'-0" S/S
8. Heads: (a) Matl. SA-516-70N (b) Matl. SA-516-70N

Table with 10 columns: 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)

- 9. MAWP 1440 N/A psi at max. temp 100 N/A F
Min. design metal temp. -20 F at 1440 psi. Hydro, pneu., or comb. test pressure 2160 psi
10. Nozzles, inspection, and safety valve openings:

Table with 9 columns: Purpose (Inlet, Outlet, Drain), No., Diameter or Size, Type, Matl., Nom. Thk., Reinforcement Matl., How Attached, Location

- 11. Supports: Skirt Yes Lugs N/A Legs N/A Other N/A Attached Bottom, Welded
12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: N/A

CERTIFICATE OF SHOP/FIELD 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. 30498
Expires August 26, 2007
Date APR 06 2006 Co. Name Coriac Industries Signed [Signature] (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION
Vessel constructed by Universal Industries Corp. at Lloydminster, Alberta
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 ABSA
have inspected the component described in this Manufacturer's Data Report on APR 06 2006, 20
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 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 loss of any kind arising from or connected with this inspection.
Date APR 06 2006 Signed [Signature] (Authorized Inspector) Commissions AB54(R) (Nat'l. Board (incl. endorsements), State, Prov. and No.)



the pressure equipment safety authority

BOILERS AND PRESSURE VESSELS
REPAIR OR ALTERATION REPORT

AB-40 (Side A) 2019-12

(A) #: 549711

OWNER EQUIP. NO:

REPAIR ORG. JOB NO: V-242338-1

REPAIR []

and/or

ALTERATION [x]

Partial []

Final [x]

1. Name of Organization doing Repair/Alteration CAPE Manufacturing Ltd.
Address LSD: 16-01-40-16-W4M Halkirk, AB. T0C 1M0, Canada AQP No. & Expiry Date AQP No.1529 & August 20, 2026
2. Name of Owner Chadwick Energy Services
Address #200, 3605 29th Street NE Calgary, AB. T1Y 5W4, Canada
Location of Installation CAPE yard LSD: 16-01-40-16-W4M Halkirk, AB. (stock)

3. Boiler/Pressure Vessel Description Vertical Scrubber CRN R9415.2
Manufacturer's Name Corlac Industries Ltd. Serial No. PV-1328

4. Original Design Conditions:
a) Vessel/Shellside/Boiler: Max Allowable Working Press. 1440 psig Min/Max Design Temp -20°F / 100°F
b) Jacket/Tubeside: Max Allowable Working Press. Min/Max Design Temp /
5. New Design Conditions:
a) Vessel/Shellside/Boiler: Max Allowable Working Press. 1440 psig Min/Max Design Temp -20°F / 100°F
b) Jacket/Tubeside: Max Allowable Working Press. Min/Max Design Temp /

6. Description of defects (location and types of deterioration that resulted in the repair/alteration).
No defects

7. Original Code Edition and Addenda ASME Sect. VIII Div.1 Year 2004 Addenda 2005

8. Code Edition and Addenda used for performing the work ASME Sect. VIII Div.1 Year 2023 Addenda

9. Description of Work performed. (Step by step description of repair/alteration method used. Attach additional pages as required, and reference any additional documents used to provide the required information; such as repair or alteration procedures, drawings, and specifications.)
-Replace 1" TOL on top head (C7) with 2" TOL (C7R).
-MPI new hole in head and where N/P bracket will be welded to shell.
-Add new TOL and N/P bracket using approved welding procedures and qualified welders.
-Perform MPI on all areas that had weld added.
-Hydro scrubber to 2160 psig
-Install nameplate to bracket and have witnessed by A.I.

10. Heat Treatment: Preheat Temp 100°F Post Weld HT (Temp./Time) N/A Other

11. Non Destructive Examination (Specify type and extent).
MPI new hole in head and where N/P bracket attaches to shell.
MPI new TOL and N/P bracket after being welded to shell.

12. Pressure Test
Vessel/Shellside/Boiler Tubeside/Jacket
a) Hydrostatic 2160 psig
b) Other Test

(A) #: 549711

OWNER EQUIP. NO. _____

13. Material - List any material used in repair/alteration and any base material welded on:

Item	Material Specifications	Thickness / Schedule	Diameter	Item	Material Specifications	Thickness / Schedule	Diameter
Shell/Drums	SA-106B	0.688"	12.75" OD	Heads/ Ends	SA-516-70N	0.625"	12.75" OD
Tubesheet				Tubes			
Nozzles				Flanges/Fittings	2" NPT Threadolet SA-105N	Class 3000	2.375" ID

14. Welding Procedures -- Alberta Registration Number WP- 3326.2 WPS Numbers used: Cape-4/Cape-12

15. Welded Replacement Parts: Attached are Manufacturer's Partial Data Reports or Repair/Alteration Reports properly identified and signed by Authorized Inspector for the following items of this report: (Welded parts supplied by others).

16. Responsibility Owner/Client. Identify below items that the owner/client has assumed responsibility for. Note (2)

- a) Alteration Design Submission _____ b) Repair/Alteration Procedure: _____ c) Material Control _____
 d) Welding Control _____ e) NDE _____ f) Heat Treatment _____ g) Pressure Test _____

Note 2: Owner/client must have a valid Alberta Quality Program (AQP), for the scope of work, to assume responsibility for function c, d, e, f, or g.

17. REMARKS:

18. **CERTIFICATE OF COMPLIANCE**

We certify that the statements made in this Report are correct and that all design, material, construction and workmanship on this repair/alteration conform to the requirements of the Alberta Safety Codes Act and Regulations and the AB-513.

a) For all items except for items identified in 16:
CAPE Manufacturing Ltd.

(Repair/Alteration Organization Name)
AQP#1529 Expires AUG.20, 2026

(AQP Number & Expiry Date)

(Signature & Date)
Jason Wettler 12/19/24

(Print Name)
Jason Wettler

b) For items identified in 16 only:

(Owner/Client Organization Name)

(AQP Number & Expiry Date)

(Signature & Date)

(Print Name)

19. DATE WORK WAS COMPLETED: 12/19/24

20. **CERTIFICATE OF INSPECTION**

I have inspected the repairs and/or alterations described in this report. To the best of my knowledge, this work has been done in accordance with the Safety Codes Act and Regulations and the requirements established in AB-513.

a) In-service Inspector (ISI) Certification
 (When the repair is inspected by an ISI per the requirements established in AB-513)

b) ABSA Safety Codes Officer Certification
 (When work is inspected by ABSA).

Owner-User/Inspection Company Name _____ AQP# _____

In-Service Inspector Signature & Date _____

In-Service Inspector Name (Please Print) _____

In-Service Inspector Alberta Cert # _____

Alberta Boilers Safety Association
 Jason Miller
 NB 1334 ABSA SCO
 000004404
 Signature & Date: 12/19/24
 Print Name & Designation of Powers Number: _____

Report Reviewed and Accepted by ABSA SCO :

Print Name & Designation of Powers Number _____

ABSA SCO Signature & Date _____

WD-5

STANDARD TOLERANCES

FABRICATION:

GENERAL DEVIATION: ± 1/8"
 OVERALL LENGTH: ± 1/4"
 ANGULAR: ± 1°

WELD PREPARATION:

LAND: 1/16" ± 1/32"
 ROOT GAP: 1/8" ± 1/16"
 ANGULAR: ± 15°

WPS: CAPE-4

WPS: CAPE-12

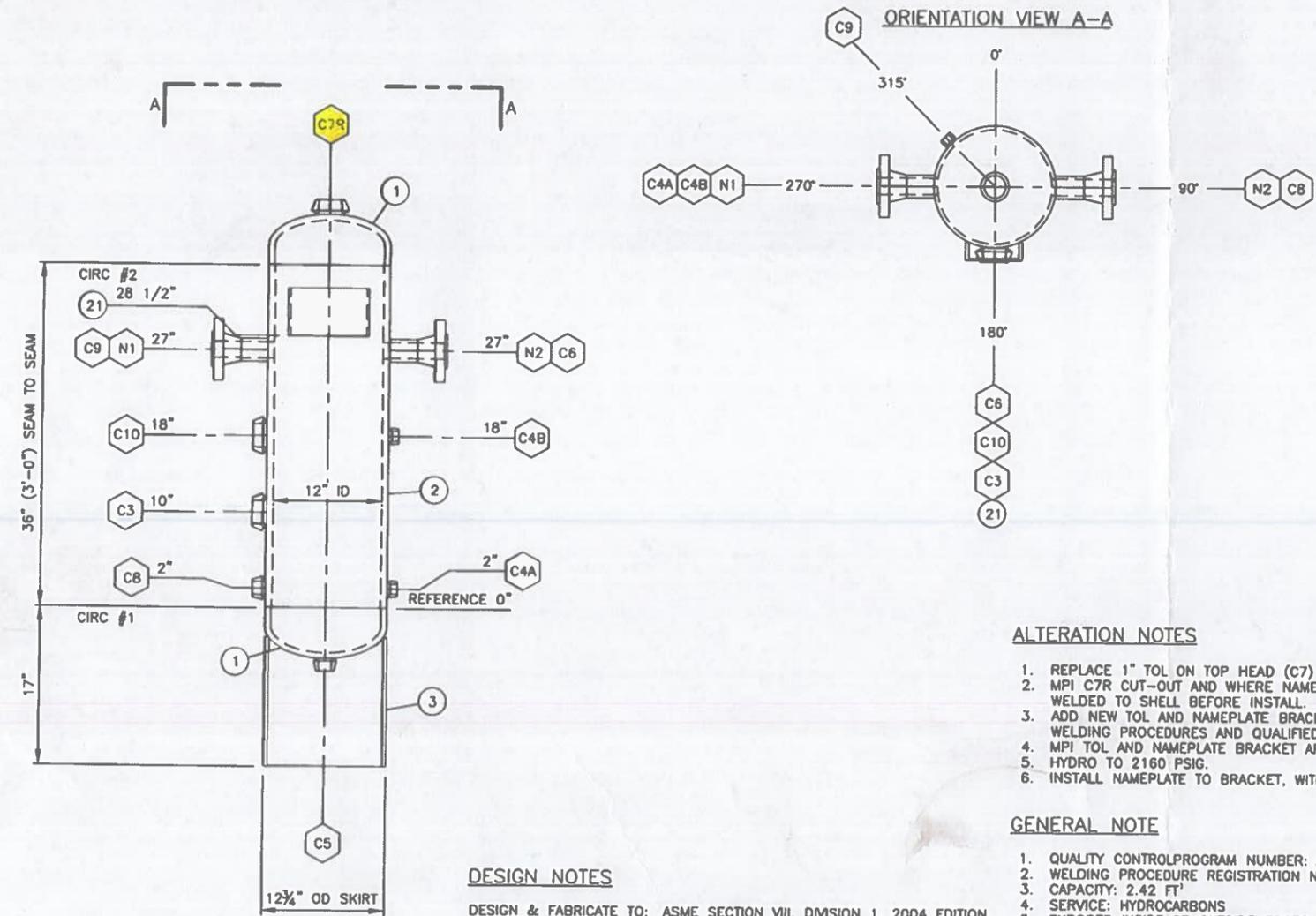
Issued For Construction

Issued to Fab. Manager *re Oct 7 2024*

Released for Fabrication *for Oct. 7, 2024*

SHOP

MARK	QTY.	SIZE	SCH	CLASS & TYPE	SERVICE	MINIMUM PROJECTION		WELD SIZE			WELD DETAIL	BOM ITEM NO.
						INSIDE	OUTSIDE	A	B	C		
N1	1	2"	160	600 RFWN	INLET	-	6"	-	-	-	-	5, 7
N2	1	2"	160	600 RFWN	GAS OUTLET	-	-	-	-	-	-	5, 7
C3	1	2"	NPT	3000 TOL	LC	-	-	-	-	-	-	10
C4A	2	3/4"	NPT	3000 TOL	LG	-	-	-	-	-	-	12
C5	1	1"	NPT	3000 TOL	DRAIN	-	-	-	-	-	-	11
C6	1	3/4"	NPT	3000 TOL	PI	-	-	-	-	-	-	12
C7R	1	2"	NPT	3000 TOL	VENT/INSPECTION	-	-	3/8"	-	-	-	9
C8	1	1"	NPT	3000 TOL	DUMP	-	-	-	-	-	-	11
C9	1	1"	NPT	3000 TOL	RELIEF	-	-	-	-	-	-	11
C10	1	2"	NPT	3000 TOL	LSHH	-	-	*	-	-	-	5 13



BILL OF MATERIALS				
ITEM	QTY.	COMMENT	DESCRIPTION	MATERIAL
1	2	HEADS	PLATE - 12 3/4" OD x 3/4" THK 2:1 SE (0.625" min)	SA-516-70N
2	1	SHELL	PIPE - 12" SCH 80 (.688") x 3'-0" LG	SA-106B
3	1	SKIRT	PIPE - 12" SCH STD (.375")	EXISTING
4				
5	2	N1-2	FLANGE - 2" CLASS 600 x SCH 160 BORE	EXISTING
6				
7	2	N1-2	PIPE - 2" SCH 160 (.344")	EXISTING
8				
9	1	C7R	THREADOLET - 2"-NPT CLASS 3000 ON 12"	SA-105N
10	1	C3	THREADOLET - 2"-NPT CLASS 3000 ON 12"	EXISTING
11	3	C5, C8-9	THREADOLET - 1"-NPT CLASS 3000 ON 12"	EXISTING
12	3	C4, C6	THREADOLET - 3/4"-NPT CLASS 3000 ON 12"	EXISTING
13	1	C10	THREADOLET - 2"-NPT CLASS 3000 ON 12"	EXISTING
14				
15				
16				
17				
18				
19				
20				
21	1	NAME PLATE	STANDARD NAME PLATE AND BRACKET	EXISTING
22				

ALTERATION NOTES

- REPLACE 1" TOL ON TOP HEAD (C7) WITH 2" TOL (C7R).
- MPI C7R CUT-OUT AND WHERE NAMEPLATE BRACKET WILL BE WELDED TO SHELL BEFORE INSTALL.
- ADD NEW TOL AND NAMEPLATE BRACKET USING APPROVED WELDING PROCEDURES AND QUALIFIED WELDERS.
- MPI TOL AND NAMEPLATE BRACKET AFTER WELDING.
- HYDRO TO 2160 PSIG.
- INSTALL NAMEPLATE TO BRACKET, WITNESSED BY SCO.

GENERAL NOTE

- QUALITY CONTROL PROGRAM NUMBER: AQP-1529
- WELDING PROCEDURE REGISTRATION NUMBER: WP-3326.2
- CAPACITY: 2.42 FT³
- SERVICE: HYDROCARBONS
- EXPOSED INSIDE OR OUTSIDE EDGES OF NOZZLES OR OPENINGS SHALL HAVE AN 1/8" MINIMUM RADIUS.
- ALL BOLT HOLES TO STRADDLE CENTERLINES.
- CLEAN AND COVER ALL OPENINGS FOR SHIPMENT.
- EXTERNAL SURFACE PREPARATION: SSPC-SP3
- EXTERNAL COATING: ONE COAT CLOVERDALE PRIMER
- USE WELD PROCEDURE (CAPE-12) FOR ALL TACK WELDS.
- CRN: R9415.231
- S/N: PV-1328
- A#: 549711

DESIGN NOTES

DESIGN & FABRICATE TO: ASME SECTION VIII, DIVISION 1, 2004 EDITION, 2005 ADDENDA
 MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP): 1440 PSIG
 DESIGN TEMPERATURE: 100°F
 MINIMUM DESIGN METAL TEMPERATURE: -20°F AT 1440 PSIG
 IMPACT TESTS: PER U1-A
 RADIOGRAPHY: SPOT PER UW-11(a)5(b) (RT-2)
 PREHEAT: 100°F
 PWHT PER UCS-56: NO
 HYDROSTATIC TEST PRESSURE: 2160 PSIG
 CORROSION ALLOWANCE: 1/16"
 WEIGHT EMPTY: 400 LBS
 WEIGHT FULL OF WATER: 700 LBS

CAPE MANUFACTURING LTD.
 BOX 216, HALKIRK, AB T0C 1M0
 TELEPHONE: (403) 884-2442 EMAIL: SALES@CAPEMFG.COM

CLIENT: STOCK
 DATE: 24-08-21
 JOB NO: CML-242338
 DRAWN BY: KG
 CHECKED BY: *[Signature]*
 DWG NO: CML-242338V-1
 REV: 0

VERTICAL SCRUBBER VESSEL
 12 3/4" OD x 3'-0" s/s
 1440 PSIG AT -20°F / 100°F

REV	DATE	REVISION	BY	APP	APP BY:
0	24-10-03	ISSUED FOR CONSTRUCTION	KG	<i>[Signature]</i>	

The information contained herein is the confidential property of CAPE Manufacturing Ltd. and is not for publication. The information is issued on the understanding that no part thereof shall be copied or communicated to a third party without authorization in writing from CAPE Manufacturing Ltd.



Repair / Alteration Inspection Checklist

Boiler/Vessel Title	Manufacturer/Serial Number	Alberta (A) No.
12 3/4" OD x 3'-0" S/S Vertical Scrubber	PV-1328	549711
AI REVIEW:		REVIEW DATE: 09/05/24

Indicate Sequence Numbers And Hold Points Which Are Applicable By

Seq.	Operations	Hold Points	Comments	Rep. Org.	ABSA AI	Owner Insp.
1	Repair/Alteration Procedure Accepted by Authorized Inspector	**		9W 09/05/24	12/19/24	
2	Welding Procedures Registered for Welding to be done	*		9W 09/05/24	09/05/24	
3	Welders have valid Alberta P.Q. Card for work to be done	*		9W 09/05/24	12/19/24	
4	Cracks MT/PT check after removal	*	WELD PREPS	DE 12/11/2024	12/19/24	
5a	Materials to be used - checked against PO/Drawing			9W 12/09/24		
5b	- material identified with correct SA/SB specifications			9W 12/09/24		
5c	- material test reports checked against specifications			12/11/2024		
6a	Fit up - shell courses-flush patches-heads					
6b	- tubesheet /shell - firetube					
6c	- nozzles and fittings			9W 12/10/24		
7	Radiographic Examination					
8	Ultrasonic Examination/MT/PT	*		DE 12/11/2024	12/19/24	
9	Internal Visual after welding	**		9W 12/11/24	12/19/24	
10	External Visual after welding	*		9W 12/11/24	12/19/24	
11	Heat Treatment					
12	Hardness Tests					
13	Hydrostatic Pressure Test	**	Gauge No.'s CAP-5006 CAP-5008	9W 12/19/24	12/19/24	
14	Alternative Test (Specify)					
15	Alberta Repair/Alteration Form AB-40 completed	**		9W 12/19/24	12/19/24	
16	Repair/Alteration Nameplate attached	*		9W 12/19/24	12/19/24	

OUTLINE SKETCH

MATERIAL USED IN REPAIR/ALTERATION

(Record Welders' Symbols and Heat No.'s, Radiograph ID. No.'s) Attach separate sketch if required.	Item	Mat'l Spec	Plate & Heads Heat & Plate#	Thk.	Sch.	Rating
	Shell/Patches					
	Heads/End					
	Tubesheet					
	Firetube					
	Nozzles					
	Fittings					
	Flanges					

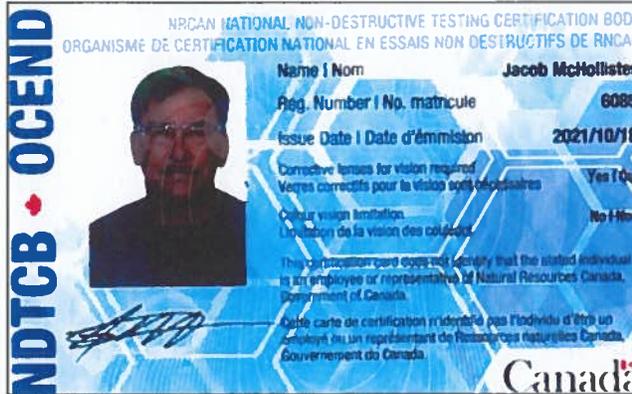


Travel Sheet (Back) 242338V-1

MATERIAL THICKNESS VERIFICATION AND IDENTIFICATION				WPS #/ WELD I.D. / WELDER SYMBOLS / FIT-UP						
Description	Thickness	Material Spec. & Grade	Heat & Plate Identifier or I.D. Number	Weld I.D.	Welder Symbol	Fit-Up Exam.	Weld I.D.	Welder Symbol	Fit-Up Exam.	Verify Type 1 Joint
Shell #1				L -			C -			
ITEM #				L -			C -			
Shell # 2				L -			C -			
ITEM #				L -			C -			
Shell #				L -			C -			
ITEM #				L -			C -			
Head #1							C-1			
ITEM #							C -			
Head #2							C-2			
ITEM #							C -			
Boot #1 Shell							C -			
Boot #1Head							C -			
Boot #2 STUB							C -			
Boot #2Head							C -			
Consumable										

						WPS# / WELDER SYMBOLS / FIT-UP			
Mark	Mat. I.D.	Neck	Fitting	Flange	Repad or Attachment	Cat. B	Cat. C	Cat. D	Pad OD
C7R	Spec.-Grd.		SA-105N			Z			
VENT/ INSP.	Thk./Rating		2" TOL CL 3000			CAPE - 12			
	Heat# or ID		51185			<i>[Signature]</i>			
	Spec.-Grd.		SA-36/SS			Z			
	Thk./Rating		STANDARD NAME PLATE AND BRACKET			CAPE- 12			
	Heat# or ID		EHK			<i>[Signature]</i>			
	Spec.-Grd.								
	Thk./Rating								
	Heat# or ID								
	Spec.-Grd.								
	Thk./Rating								
	Heat# or ID								
	Spec.-Grd.								
	Thk./Rating								
	Heat# or ID								
	Spec.-Grd.								
	Thk./Rating								
	Heat# or ID								
	Spec.-Grd.								
	Thk./Rating								
	Heat# or ID								

Jacob McHollister	CGSB 48.9712	Level II	RT - MT	#6085
	SNT	Level II	RT - MT - PT- HT UT Digital Thickness	#6085



HUNT INSPECTION LTD. **SNT CERTIFICATION #6085**

Jacob McHollister

has met the requirements of SNT certification in accordance with *Hunt Inspection Ltd.* written practice PQ-1 Rev. 22 that meets the requirements of ASNT recommended practice SNT-TC-1A 2020 edition, in the nondestructive testing methods listed on the reverse side of this card.

HUNT INSPECTION LTD. **SNT CERTIFICATION #6085**

Technician: **Jacob McHollister**

SNT Method	Level	Initial Cert. Date	Re Cert. Date	Expiry Date
RT	II	Jan. 05, 2005	Dec. 30, 2019	Dec. 29, 2024
MT	II	Jan. 18, 2005	Dec. 30, 2019	Dec. 29, 2024
PT	II	Jan. 22, 2007	Dec. 30, 2019	Dec. 29, 2024
UT-DT	II	Apr. 15, 2017	Dec. 30, 2019	Dec. 29, 2024
HT	II	Jan. 03, 2019	Dec. 30, 2019	Dec. 29, 2024

Name of Level III Examiner & Certifying Authority: **Joel Norman**
 Signature of Level III Examiner & Certifying Authority: *J. Norman*

Date of Issue: **April 25, 2024**

JG
 APR 26 2024

**NDT PERSONNEL CERTIFICATION TO THE STANDARD
CAN/CGSB 48.9712-2022 & ASNT SNT-TC-1A 2020
ANNUAL EYE EXAMINATION REPORT**

In accordance with the Standard CAN/CGSB 48.9712 "Non-destructive Testing – Qualification and Certification of Personnel" and ASNT recommended practice SNT-TC-1A, this Eye Examination Report, consisting of three vision requirements: Near Vision, Distance Vision, and Colour Vision for examination in any of the of NDT Methods

APPLICANT'S NAME: JACOB MCHOLLISTER **REGISTRATION NUMBER:** #6085

I am submitting for the following: (Please check)

EXAMINATION RENEWAL RE-CERTIFICATION

NEAR VISION ACUITY: shall permit reading of a Jaeger number 1 or equivalent letters at not less than 30.5 cm with one or both eyes, either corrected or uncorrected.

I CONFIRM THAT THE CANDIDATE:

- Meets the requirement without correction
- Meets the requirement with correction
- Does not meet

Dorrin Hunt
Examiners Name


Examiners Signature

President
Appointment/Title

January 4, 2024
Date of Eye Examination

COLOUR & GRAYSCALE CONTRAST DIFFERENTIATION

The following tests must be completed:

- (1) Colours using the HHR 4th Edition 24 tablet test for colour blindness for the NDT method(s) concerned.
- (2) Grayscale using Skerik Grey Scale test or a calibrated step tablet, density strip with a minimum of 10 steps for the NDT method(s) concerned.

I CONFIRM THAT THE CANDIDATE CAN DISTINGUISH BETWEEN THE COLOURS AND CONTRASTS OF THE ABOVE TESTS IN THE NDT METHOD(S) CONCERNED:

Dorrin Hunt
Examiners Name


Examiners Signature

President
Appointment/Title

January 4, 2024
Date of Eye Examination


JAN 08 2024

MT - PT - UT INTERPRETATION REPORT

Invoice #:

JHM24129

Report #:

JHM24129-4MT

Page:

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Hunt Inspection Ltd. - Offices

Stettler, Alberta

Box 248, Stettler, AB, T0C 2L0
PH: 403-742-4868

Lacombe, Alberta

PH: 403-740-9211

web: www.huntinspection.com

Technician Sign: 

Technician Certification

JACOB MCHOLLISTER
SNT LEVEL II
CGSB 48.9712
LEVEL II #6085

Assistant:

Kolby Armstrong

Date:

December 9, 2024

Client:

Cape Manufacturing Ltd.

Location:

Halkirk Facility

Reg. Hours	O.T. Hours	Total Hours	K.M.
0.75	/	0.75	10

Acceptance Code:

AMSE Sec. VIII, Div. 1 (2023)

Specification:

Appendix 6

Hunt QC Procedure:

MT-1 Rev.15

Technique:

1

Contractor:

Cape

Job#:

CML-242338-1

A.F.E.#:

P.O.#:

549711

A#:

Ser#:

PV-1328

Field Weld Number (s)	Size	Thickness	Material	Welder Symbol	Remarks	Accept	Reject
ITEMS INSPECTED: 12" Scrubber Before Welding							
MT1	12"	.688"	C	/	ID Plate Area	✓	
MT2	2"	TOL	C	/	At C7R (Head)	✓	
						✓	



REVIEWED

DEC 11 2024

Comments: No relevant indications found at time of final inspection. Photos indicate area of inspection (100% of designated area inspected)

Material Legend	Equipment	Inspection Information	Report Acceptance
C = Carbon Steel	Parker B300 AC Yoke	Method: MT - Wet Visible, Black On White	Client Rep. <u>Darcy Erion</u> Client Rep. Sign: <u>Darcy Erion</u>
S = Stainless Steel	Ardrox 8901W White Contrast Paint	Lighting: Visible Light > 100 fc	
C/S = Carbon Steel to Stainless Steel	Ardrox 8032 Black Magnetic Particle Suspension	Surface Condition: As Ground	
A = Aluminum	Certified 10LB Lift Test Block	Surface Temperature: 15 C Current: A.C. Daily Yoke Verification: 10 lb Lift at 9" Leg Spacing - <input checked="" type="checkbox"/> Pass	

MT - PT - UT INTERPRETATION REPORT

Invoice #:

JHM24131

Report #:

JHM24131-4MT

Page:

1 of 1

Hunt Inspection Ltd. - Offices

Stettler, Alberta

Box 248, Stettler, AB, T0C 2L0
PH: 403-742-4868

Lacombe, Alberta

PH: 403-740-9211

web: www.huntinspection.com

Technician Sign: 

Technician Certification

JACOB MCHOLLISTER
SNT LEVEL II
CGSB 48.9712
LEVEL II #6085

Assistant:

Chase Anderson

Date:

December 10, 2024

Client:

Cape Manufacturing Ltd.

Location:

Halkirk Facility

Reg. Hours	O.T. Hours	Total Hours	K.M.
0.75	/	0.75	10

Acceptance Code:

AMSE Sec. VIII, Div. 1 (2023)

Specification:

Appendix 6

Hunt QC Procedure:

MT-1 Rev.15

Technique:

1

Contractor:

Cape

Job#:

CML-242338-1

A.F.E.#:

P.O.#:

549711

A#:

Ser#:

PV-1328

Field Weld Number (s)	Size	Thickness	Material	Welder Symbol	Remarks	Accept	Reject
ITEMS INSPECTED: 12" Scrubber After Welding							
MT1A	12"	.688"	C	Z	ID Plate Welds	✓	
MT2A	2"	TOL	C	Z	At C7R (Head)	✓	
						✓	



REVIEWED
DEC 11 2024

Comments: No relevant indications found at time of final inspection. Photos indicate typical area of inspection (100% of welds inspected)

Material Legend	Equipment	Inspection Information	Report Acceptance
C = Carbon Steel	Parker B300 AC Yoke Ser: 11615	Method: MT - Wet Visible, Black On White	Client Rep. <u>Darcy Erion</u>
S = Stainless Steel	Ardrox 8901W White Contrast Paint Lot: 65050322	Lighting: Visible Light > 100 fc	
C/S = Carbon Steel to	Ardrox 8032 Black Magnetic Particle Suspension Lot: 65041823	Surface Condition: As Ground	Client Rep. Sign: <u>Darcy Erion</u>
Stainless Steel	Certified 10LB Lift Test Block Ser: 1121	Surface Temperature: 15 C Current: A.C.	
A = Aluminum		Daily Yoke Verification: 10 lb Lift at 9" Leg Spacing - <input checked="" type="checkbox"/> Pass	



Exhibit 18.2: Pressure Test Affidavit

CAPE MANUFACTURING LTD.
PRESSURE TEST AFFIDAVIT

ISSUED: V-242338-1		DATE: Dec.19,2024	
LOCATION	ISSUED	CAPE MANUFACTURING LTD.	
DESIGN PRESSURE 1440 psi	TEST PRESSURE REQUIRED 2160 psi	GAUGE NO'S USED: Two (2)	
TEST HOLD TIME REQUIRED 60 Minutes	ID NO: CAP-5006	RANGE: 0-5000 psi	
	ID NO: CAP-5008	RANGE: 0-5000 psi	
TEST MEDIUM Water	MEDIUM TEMPERATURE REQUIRED 50F		
PRESSURE INCREASE NOT TO EXCEED 1,000 kPa / MINUTE			
DESCRIPTION EQUIPMENT / SYSTEM			
- Hydro Test 1 (One) 12 3/4"OD X 3'-0" S/S Vertical Scrubber Vessel.			
NOTES:			
1. EQUIPMENT / SYSTEM TO BE INSPECTED BY QUALITY CONTROL REPRESENTATIVE AND AUTHORIZED INSPECTOR BEFORE HYDROSTATIC TEST.			
2. SEAL ALL NOZZLES USING BLANK FLANGES AND GASKETS - NO GREASE OR OTHER COMPOUNDS TO BE APPLIED TO GASKET SURFACE.			
3. COUPLINGS AND WELD-O-LETS ETC. TO BE PLUGGED AND TEFLON TAPE OR WHITELEAD MIXTURE MAY BE USED FOR SEALING.			
4. PROVIDE AT LEAST ONE (1) VENT OPENING AT HIGHEST POINT DURING FILLING.			
5. WATER TEMPERATURES SHOULD BE AS SPECIFIED BUT NOT LESS THAN 30F ABOVE MINIMUM DESIGN METAL TEMPERATURES OR MORE THAN 120F FOR ALLOY STEELS.			
6. MINIMUM OF TWO CALIBRATED GAUGES, INSTALLED ON THE EQUIPMENT TESTED.			
7. TEST GAUGES SHOULD SHOW CALIBRATION DATE WITHIN 12 MONTHS OF DATE OF FIRST USE.			
8. TEST PRESSURE SHOULD BE HELD AS SPECIFIED BEFORE VIEWING.			
CONTRACTOR		OWNER INSPECTOR	
CAPE MANUFACTURING LTD.			
<i>Tristan van Landbergen</i>			
TEST COMPLETED BY	DATE: Dec.19,2024	PRINT OR TYPE NAME HERE	DATE:
<i>[Signature]</i>			
SIGN		SIGN	
		AUTHORIZED INSPECTOR	
QUALITY CONTROL WITNESS	DATE: Dec.19,2024	PRINT OR TYPE NAME HERE	DATE
<i>[Signature]</i>			
SIGN		SIGN	

Certificate of Calibration

Harvie Instruments Ltd. certifies this gauge has been calibrated using measurement standards traceable to the National Research Council, the National Institute of Standards and Technology, or derived from accepted values of natural physical constants.

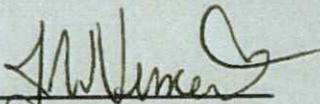
Pressure Standard #1 TB-1 Dead Weight Tester 573
 Pressure Standard #2 TB-2

Client: Cape Manufacturing Ltd.	Date: May 8, 2024
Device: Wet Pressure Gauge	Cal Due: May 7, 2025 <i>FIRST USED AUG 21, 2024 DH</i>
Serial #: CAP 5008	Make: Winters
Pressure Range: 5,000 PSI	Device Accuracy Rating +/- 1.0 % of Full Span

Final Comparison Results					
Step #	% Scale	Standard PSI	Gauge PSI	Deviation PSI	% of Full Span
1	0	0	0	0.0	0
2	10	500.0	494.0	-6.0	-0.12
3	20	1,000.0	1,002.0	2.0	0.04
4	40	2,000.0	2,003.0	3.0	0.06
5	60	3,000.0	3,019.0	19.0	0.38
6	80	4,000.0	4,045.0	45.0	0.90
7	100	5,000.0	5,050.0	50.0	1.00
8	50	2,500.0	2,515.0	15.0	0.30
9	0	0	0	0.0	0.00
Maximum Deviation				50.0	1.00

ACCEPTED AT STATED ACCURACY

Calibrated / Certified by or under the direct supervision of:



 J. Vincent
 Calibration Technician

Remarks: Gauge was received out of accuracy. It was adjusted or repaired as required and returned to accuracy. Any number of factors can cause the gauge to drift out of tolerance at any time following its calibration.



6879A - 52 Ave
 Red Deer, AB. Canada T4N 4L2

Ph: 403-347-6001

Certificate of Calibration

Harvie Instruments Ltd. certifies this gauge has been calibrated using measurement standards traceable to the National Research Council, the National Institute of Standards and Technology, or derived from accepted values of natural physical constants.

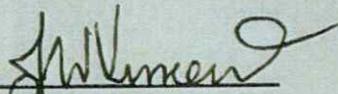
Pressure Standard #1 TB-1 Dead Weight Tester 573
 Pressure Standard #2 TB-2

Client: Cape Manufacturing Ltd.	Date: May 8, 2024
Device: Wet Pressure Gauge	Cal Due: May 7, 2025
Serial #: CAP 5006	<i>FIRST USED AUG 21, 2024</i>
Pressure Range: 5,000 PSI	Make: GT <i>DM</i>
	Device Accuracy Rating
	+/- 1.0 % of Full Span

Final Comparison Results					
Step #	% Scale	Standard PSI	Gauge PSI	Deviation PSI	% of Full Span
1	0	0	0	0.0	0
2	10	500.0	477.0	-23.0	-0.46
3	20	1,000.0	982.0	-18.0	-0.36
4	40	2,000.0	1,980.0	-20.0	-0.40
5	60	3,000.0	2,981.0	-19.0	-0.38
6	80	4,000.0	3,978.0	-22.0	-0.44
7	100	5,000.0	4,962.0	-38.0	-0.76
8	50	2,500.0	2,480.0	-20.0	-0.40
9	0	0	0	0.0	0.00
Maximum Deviation				38.0	0.76

ACCEPTED AT STATED ACCURACY

Calibrated / Certified by or under the direct supervision of:



 J. Vincent
 Calibration Technician

Remarks:
 Any number of factors can cause the gauge to drift out of tolerance at any time following its calibration.



6879A - 52 Ave
 Red Deer, AB. Canada T4N 4L2

Ph: 403-347-6001

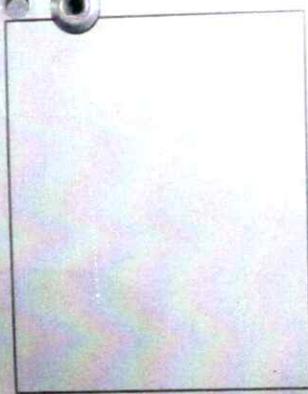


Name Plate Facsimile

*NOTE: The "NB STAMP" and the National Board serial number shall only be marked on nameplates if the item is registered with the National Board.

*	NB		
	<p>ALTERED BY</p> <p>CAPE</p> <p>MANUFACTURING LTD.</p> <p>ALTERED DECEMBER 2024</p>		
YEAR BLT.	2006	SERIAL No.	PV-1328
VESSEL TYPE	12 3/4" OD X 3'-0" S/S VERTICAL SCRUBBER VESSEL		
M.A.W.P	1440	PSI	AT 100 oF
M.D.M.T.	-20	oF	AT 1440 PSI
SHELL TK.	0.688	IN	HEAD TK. 0.625 IN
CRN	R9415.231	C.A.	0.0625 IN
A#:			
CAPE JOB # V-242338-1			
Mailing Address: Box 216 Halkirk Alberta Canada T0C 1M0			

Markings shall be produced by casting, etching, embossing, debossing, stamping or engraving and the characters must be either indented or raised at least 0.004 inches (0.10 mm). Letters and numbers must be at least 5/32" high.



ALTERED BY

ALTERED
DECEMBER 2024



CAPE MANUFACTURING LTD.

YEAR BLT

SERIAL NO.

VESSEL TYPE

M.A.W.P. PSI

AT °F

M.D.M.T. °F

AT PSI

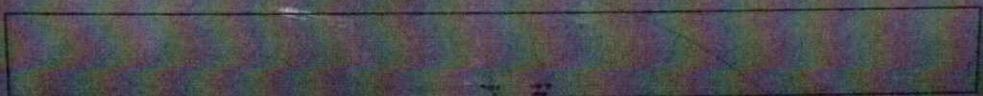
SHELL TK. IN

HEAD TK. IN

CRN

C.A. IN

A#



CAPE JOB# V-242338-1

MAILING ADDRESS: BOX 216 HALKIRK ALBERTA T0C 1M0

Alberta

33404

ABSA

the pressure equipment safety authority

Grade "B" Pressure Welder's
Certificate of Competency

This is to certify that **Cole Sutley**
has satisfied the requirements of the Pressure Welders Regulations under
the Safety Codes Act and is hereby issued this certificate of competency



W-75982

File no.

Dated at Edmonton
June 16, 2023


Administrator

"Z"
Stamp



WELDER QUALIFICATION RECORD (WQR)

Welder's Name Cole Sutley ABSA File No.: W-75982 Stamp# Z
 Identification of WPS followed by welder during welding of test coupon: CAPE-12(rev3) W.P. Reg. #WP 3326.2
 Base material(s) welded: SA-106 GRD-B Thickness: 15.875mm X Test Coupon Prod. Weld

Testing Conditions and Qualification Limits

Welding Variables (QW-350)	Actual Values		Range Qualified	
	GMAW	GMAW(MC)	GMAW	GMAW(MC)
Welding Process(es) Used:	SEMI AUTO	SEMI AUTO	SEMI AUTO	SEMI AUTO
Type of Welding (e.g., Manual, Semi-Automatic) Used:				
Base Metal P or S Number: To P or S Number:	P-1		P1-P15F,P34,P4X	
Plate <input checked="" type="checkbox"/> Tube (enter diameter if pipe or tube):	64 mm		25 mm min. O.D.	
Backing (metal, weld metal, double-welded, etc.):	NONE	WELD METAL	With/Without	With
Filler Metal or Electrode Specification(s) (SFA) (info only):	5.18	5.18		
Filler Metal or Electrode Classification(s) (info only):	ER70S-2	ER70C-6M		
Filler Metal or Electrode F-Number (s):	F6	F6 (MC)	F6	F6 (MC)
Filler Type (solid/metal or flux cored/powder) (GTAW or PAW):	N/A		N/A	
Consumable Insert for GTAW or PAW:	N/A		N/A	
Deposit Thickness for each process:				
Process 1: GMAW 3 Layers minimum <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	F6 2.79		F6 3.07mm	
Process 2: GMAW(MC) 3 Layers minimum <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	F6(MC)13.085mm		F6(MC)MTBW	
Welding Position (2G, 6G, 3F, etc.):	6G	2G	All	Flat Hor
Progression (Uphill or Downhill):	DOWNHILL	N/A	DOWNHILL	N/A
Fuel Gas for OFW, Inert Gas Backing for GTAW, PAW, GMAW:	None		With/without	With
Transfer Mode (spray/globular or pulse to short circuit-GMAW):	SHORT-CIRCUIT / Spray		SHORT-CIRCUIT/SP,G,P	
GTAW Current Type/Polarity (AC, DCEP, DCEN):	N/A		N/A	

Results

Visual Examination of Fit up Root Gap: 6mm Tack Welds: Bridge (Length: 10mm Number: 2)
 Root Pass: (Describe Discontinuity if Unacceptable): Acceptable
 Completed Weld: (Describe defects if Unacceptable): Acceptable
 Bend Test: Transverse Root and Face [QW-462.3(a)] Longitudinal Root and Face QW-462.3(b) Side [QW 462.2]
 Pipe Bend Specimen, corrosion resistant overlay [QW462.5(c)] Plate Bend Specimen, corrosion resistant overlay [QW462.5(d)]
 Macro Test for Fusion [QW462.5(b)] Macro Test for Fusion [QW462.5(e)]

Type	Result	Type	Result	Type	Result
Side BEND 1	Acceptable	Side BEND 2	Acceptable		
Side BEND 3	Acceptable	Side BEND 4	Acceptable		

(For alternative qualification of groove welds by radiography to QW-191)

R.T. Results: _____ U.T Results: _____
 Fillet Weld Fracture Test (Describe location, nature and size of any crack or tearing of specimen): N/A
 Length and Per Cent of Defects: N/A inches N/A

Record Information

Film or Specimens Evaluated by: Lee Yasinski Company: Red Deer Polytechnic
 Welding supervised by: Jim Gonda
 Mechanical tests conducted by: Lee Yasinski Laboratory test no.: _____

We certify that the statements in this record are correct and that the test coupons were prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

ACCREDITED ORGANIZATION: RED DEER POLYTECHNIC AOQP No.: 7114 Expiry Date MARCH 26 /2024
 Certified by: _____ Examiner File No: E-00326 Date: DEC 12th,2023
 Company Representative: Jim Gonda Examiner Lee Yasinski
 P.Q. Card No. (When issued): 4825 Performance Test Reference No.: _____
 Test Coupon I.D. No.: LY-2 Date Coupon is to be retained to: Jan 12th,2024



WELDER QUALIFICATION RECORD (WQR)

Welder's Name Cole Sutley ABSA File No.: W- 75982 Stamp No.: Z
 Identification of WPS followed by welder during welding of test coupon: CAPE-1SR(REV 1) W.P. Reg. #WP 3326.2
 Base material(s) welded: SA 106 GRD B Thickness: 15.875mm xTest Coupon Prod. Weld

Testing Conditions and Qualification Limits

Welding Variables (QW-350)	Actual Values	Range Qualified
Welding Process(es) Used:	SMAW	SMAW
Type of Welding (e.g., Manual, Semi-Automatic) Used:	MANUAL	MANUAL
Base Metal P or S Number: To P or S Number:	P-1	P1-P15F,P34,P4X
<input type="checkbox"/> Plate <input checked="" type="checkbox"/> Tube (enter diameter if pipe or tube):	64 mm	25 mm min O.D.
Backing (metal, weld metal, double-welded, etc.):	NONE WELD METAL	With/Without With
Filler Metal or Electrode Specification(s) (SFA) (info only):	SFA 5.1	
Filler Metal or Electrode Classification(s) (info only):	E6010 E7018	
Filler Metal or Electrode F-Number (s):	F3 / F4	F3 / F4
Filler Type (solid/metal or flux cored/powder) (GTAW or PAW):	N/A	N/A
Consumable Insert for GTAW or PAW:	N/A	N/A
Deposit Thickness for each process:		
Process 1: SMAW F3 3 Layers minimum <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	F3 2.875 mm	F3 5.75mm
Process 2: SMAW F4 3 Layers minimum <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	F4 13mm	F4 MTBW
Welding Position (2G, 6G, 3F, etc.):	6G	ALL
Progression (Uphill or Downhill):	UPHILL	UPHILL
Fuel Gas for OFW, Inert Gas Backing for GTAW, PAW, GMAW:	N/A	N/A
Transfer Mode (spray/globular or pulse to short circuit-GMAW):	N/A	N/A
GTAW Current Type/Polarity (AC, DCEP, DCEN):	N/A	N/A

Results

Visual Examination of Fit up Root Gap: 3mm Tack Welds: Bridge (Length: 10mm Number: 3)
 Root Pass: (Describe Discontinuity if Unacceptable): Acceptable
 Completed Weld: (Describe defects if Unacceptable): Acceptable
 Bend Test: Transverse Root and Face [QW-462.3(a)] Longitudinal Root and Face QW-462.3(b)] Side [QW 462.2]
 Pipe Bend Specimen, corrosion resistant overlay [QW462.5(c)] Plate Bend Specimen, corrosion resistant overlay [QW462.5(d)]
 Macro Test for Fusion [QW462.5(b)] Macro Test for Fusion [QW462.5(e)]

Type	Result	Type	Result	Type	Result
SIDE BEND 1	Acceptable	SIDE BEND 2	Acceptable		
SIDE BEND 3	Acceptable	SIDE BEND 4	Acceptable		

For alternative qualification of groove welds by radiography to QW-191)

R.T. Results: _____ U.T Results: _____
 Fillet Weld Fracture Test (Describe location, nature and size of any crack or tearing of specimen): N/A
 Length and Per Cent of Defects: N/A inches N/A

Record Information

Film or Specimens Evaluated by: Lee Yasinski Company: Red Deer Polytechnic
 Welding supervised by: Jim Gonda
 Mechanical tests conducted by: Lee Yasinski Laboratory test no.: _____

We certify that the statements in this record are correct and that the test coupons were prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

ACCREDITED ORGANIZATION: RED DEER POLYTECHNIC AOQP No.: 7114 Expiry Date MARCH 26, 2024

Certified by: Jim Gonda Examiner File No: E-00326 Date: Dec 12th, 2023
 Company Representative: Jim Gonda Examiner Lee Yasinski
 P.Q. Card No. (When issued:): 4105 Performance Test Reference No.: _____
 Test Coupon I.D. No.: LY-6 Date Coupon is to be retained to: Jan 12th, 2024

Red Deer Polytechnic
Box 5005, Red Deer Alberta
T4N 5H5

7114
A.O.Q.P.No

WELDER PERFORMANCE QUALIFICATION CARD

Cole Sutley **W-75982**
[Name] [ABSA File No.]

This card is issued pursuant to the Safety Codes Act and Pressure Welder's Regulations. The performance qualification is in accordance with Section IX, A.S.M.E. Code and subject to the limitations on the reverse side.

Dec 12th, 2023
Date of Test

Lee Yasinski
Examiner (Print/Type)

[Signature]
Signature of Welder

CARD **4825**

PERFORMANCE QUALIFICATION CARD NO. 4825

Process(es) <u>GMW GMW(ac)</u>	Materials (P. No.) <u>P1-P15F, P34, P4X</u>
Filler Metal Group (F.No.) <u>F6 F6(MC)</u>	Min. Outside Pipe Diameter <u>25mm</u>
Max Deposited Weld Metal <u>3.07mm MTBW</u>	Position(s) Qualified <u>All Flat/Vert</u>
Backing <u>with/without with</u>	Backing Gas <u>with/without</u>
Progression <u>Downhill N/A</u>	

Dec 12th, 2025 [Signature] E-00326
P.Q. Expiry Date Weld Examiner Signature Certification No.

Red Deer Polytechnic
Box 5005, Red Deer Alberta
T4N 5H5

7114
A.O.Q.P.No

WELDER PERFORMANCE QUALIFICATION CARD

Cole Sutley **W-75982**
[Name] [ABSA File No.]

This card is issued pursuant to the Safety Codes Act and Pressure Welder's Regulations. The performance qualification is in accordance with Section IX, A.S.M.E. Code and subject to the limitations on the reverse side.

Dec 12th, 2023
Date of Test

Lee Yasinski
Examiner (Print/Type)

[Signature]
Signature of Welder

CARD **4105**

PERFORMANCE QUALIFICATION CARD NO. 4105

Process(es) <u>SMAW SMAW</u>	Materials (P. No.) <u>P1-P15F, F34, P4X</u>
Filler Metal Group (F.No.) <u>F3 F4</u>	Min. Outside Pipe Diameter <u>25mm</u>
Max Deposited Weld Metal <u>5.75mm MTBW</u>	Position(s) Qualified <u>All</u>
Backing <u>With/Without With</u>	Backing Gas <u>N/A</u>
Progression <u>Uphill Uphill</u>	

Dec 12th, 2025 [Signature] E-00326
P.Q. Expiry Date Weld Examiner Signature Certification No.

TACK WELDS

Tack welds may be used on welded parts to hold edges in proper alignment until final welds are made and shall use an appropriate qualified welding procedure.

REMOVAL

Insofar as practicable, tack welds shall be removed completely when they have completed their purpose. Removal shall be by grinding and shall completely remove tack weld material exposing sound base metal. Surfaces shall be inspected by the welder to be free from defects as to prevent inclusion of any impurities into the weld joint.

INCORPORATION

Tack welds to be left in place shall be:

- (a) made by qualified welders to an appropriate qualified welding procedure.
- (b) made at the root of the joint with the same electrode as that used in the root pass.
- (c) completely fused with the root pass.
- (b) cleaned to sound metal and blended into surrounding metal along their entire length.
- (b) satisfactorily visually inspected by the welder before incorporation into the final weld.
Inspection shall be over the entire length of the tack weld (including stopping and starting ends) and shall ensure full fusion, complete penetration and that it be free from defects (slag, cracks, porosity etc).

If found to be defective, tack welds shall be removed as outlined above.

STOPS & STARTS

If welding is stopped for any reason, extra care shall be taken in restarting. The stops / starts shall be ground to secure sound metal at the base of weld metal first deposited. Edges shall be blended into surrounding metal and ends feathered to produce a continuous groove surface free from abrupt ridges, valleys or discontinuities. Welders shall inspect stops and starts before incorporation into the final weld to ensure it be free from any defects and that it allows full penetration and complete fusion to the existing stop / start.



Welder Signature

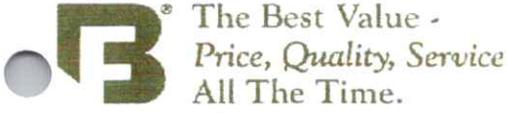
Nov 21/23

Date

CERTIFIED MILL TEST REPORT

LOG NO. F00000000198688 Page 4 of 6

BONNEY FORGE CORPORATION
P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
www.bonneyforge.com



CUSTOMER:

DATE 02/23/2024

CUSTOMER ORDER NO.:

BONNEY ORDER NO. B000339882

SHIP TO:

ITEM QUANTITY LOT NO. GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
7551916		51185	18-12X2 3M A105N THRD T	SA/A105N ✓ C 0.200 Cb 0.012 Co 0.003 Cr 0.080 Cu 0.040 Mn 1.110 Mo 0.004 Ni 0.020 ✓ P 0.005 S 0.021 Si 0.220 V 0.004 CE(Long Formula) = 0.41 T/S(Psi) 74,278 Y/S(Psi) 50,871 EL(%) 36.60 RA(%) 57.90 Brinell Hardness 139 BHN MPA 512.128 MPA 350.743 Cr+Cu+Mo+Ni+V = .148 Cr+Mo = .084
7552025	26	10 51169	8X3 3000 A105N THRD T	SA/A105N C 0.180 Co 0.009 Cr 0.160 Cu 0.250 Mn 0.990 Mo 0.020 Nb 0.004 Ni 0.070 P 0.009 S 0.018 Si 0.205 V 0.022 CE(Long Formula) = 0.41 T/S(Psi) 75,565 Y/S(Psi) 51,924 EL(%) 35.20 RA(%) 61.92 Brinell Hardness 137 BHN 137 BHN
7552572	28	25 51292	3 X 2 3000 A105N SOCK S	SA/A105N C 0.190 Cb 0.010 Co 0.003 Cr 0.120 Cu 0.020 Mn 1.020 Mo 0.002 Ni 0.010 P 0.005 S 0.015 Si 0.220 V 0.005 CE(Long Formula) = 0.39 T/S(Psi) 72,104 Y/S(Psi) 46,632 EL(%) 36.00 RA(%) 64.89 Brinell Hardness 137 BHN 137 BHN
7550026	29	25 51204	10-8 X2 3000 A105N SOCK S	SA/A105N C 0.190 Cb 0.002 Co 0.009 Cr 0.230 Cu 0.220 Mn 0.990 Mo 0.020 Ni 0.080 P 0.010 S 0.015 Si 0.209 V 0.021 CE(Long Formula) = 0.43 T/S(Psi) 76,132 Y/S(Psi) 51,289 EL(%) 35.50 RA(%) 61.34 Brinell Hardness 141 BHN 139 BHN

Qty - 12
T - 501
west Car
11/9/24 u PDW 242338V-01

ASME STAMP SEC.II

ED. 2023 ADD _____
INT. al DATE 11/09/2024

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Billie Jo Clemens
Billie Jo Clemens
Quality Assurance Representative



CERTIFIED MILL TEST REPORT

LOG NO. F00000000198688

Page 6 of 6

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

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The Best Value -
Price, Quality, Service
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CUSTOMER:

DATE 02/23/2024

CUSTOMER
ORDER NO.:

BONNEY ORDER NO. B000339882

SHIP TO:

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
------	----------	---------	--

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. THE MATERIAL SUPPLIED AS A105N MEETS THE REQUIREMENTS OF BOTH NACE MR0103/ISO 17945 - 2015 & NACE MR0175/ISO 15156-2 - 2015 EDITION.
4. CERTIFYING ASTM A105-21 / ASME SA105-21 EDITION.
5. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
6. THE UNIT OF MEASURE FOR TENSILE AND YIELD (0.2%) STRENGTH ARE REPORTED IN PSI.
7. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.

ASME STAMP SEC.II

ED. 2023 ADD _____
INT. as DATE 11/09/2024

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Billie Jo Clemens

Billie Jo Clemens
Quality Assurance Representative

ESSAK Steel Alloys Inc.

105 West Street, Suite 210, Mississauga, Ontario Canada L4W 7H4

13001-BS 2010/11/09 2010/12/31 207349

ALBERTA INDUSTRIAL METALS LTD
4021 - 70TH STREET
RED BEER ALBERTA
T4P 1N5

ALBERTA INDUSTRIAL METALS LTD
7660 49TH AVENUE
CALGARY, ALBERTA
T4P 4C6

-611052

ROLL TEST REPORTS

THIS TEST REPORT IS THE PROPERTY OF ESSAK STEEL ALLOYS INC. AND IS TO BE USED ONLY FOR THE SPECIFIC PURPOSES FOR WHICH IT WAS ISSUED. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF ESSAK STEEL ALLOYS INC.

M. McLENN

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EHK

SUPPLEMENTARY TESTS

TEST CERT 1: BRADSHAW, CA TEST CERT 2: PLATE TEST COUPON:

ASME STAMP SEC II

TEST REPORTS REQUIRED

GEN MFC

ED. 3015 ADD

200169791 CM

2010/12/31 20:08

100% QUALITY AND ENVIRONMENTAL CERTIFICATION AVAILABLE AT WWW.ESSAKSTEELALLOYS.COM
ITEMS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS

PRODUCT SHIPPED DIMENSIONS .178 MIN X 48 X COIL

COIL NUMBER	HEAT-MS	NO. PIECES	WEIGHT	COIL NUMBER	HEAT-MS	NO. PIECES	WEIGHT
75027002	0840L-52	1	37870	75027003	0840L-53	1	37960
75027004	0840L-54	1	38602				

C.E = 30

MECHANICAL PROPERTIES

HEAT	SAMPLE	GAUGE	COND	NETH	DIR	YIELD	TENSILE	ELONG
1840L	USPC	.1780	AR	2	T	65.3	75.0	20(2-)

ASME STAMP SEC. II

CHEMICAL PROPERTIES

HEAT	C	MN	P	S	CR	NI	CU	MO	AL
1840L	0.17	0.86	0.009	0.005	0.04	0.02	0.01	0.03	0.00

ASME STAMP SEC. II

PO. 988599 ALBERTA Industrial metals
NAME PLT Bkings - 00
- 180

THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT IN THE PARTICULAR CASE FOR WHICH THIS CERTIFICATE IS ISSUED THE MATERIALS CONFORMED WITH THE REQUIREMENTS AND TO THE CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES OF SUCH STEEL AS OF CORRESPONDANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS ON VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE USED FOR ANY PURPOSE INCLUDING DESIGN OF C-ROLL FORMS AS MENTIONING THE ACTUAL STRENGTH OF SUCH STEEL.

ASME STAMP SEC II

ED. 2017 ADD

CM2-160527ax

INT. 09 DATE 02/01/2018

ED. 2019 ADD

DATE 04/02/2020