

# Certificate of Authorization Permit

## Quality Management System

Expiry Date: **December 9, 2016**

Reg. No.: **AQP-5046**

### CAMERON MEASUREMENT SYSTEMS DIVISION

7944 - 10 STREET N.E.  
CALGARY, ALBERTA

having complied with the provisions of the SAFETY CODES ACT, is hereby authorized to perform the activities identified in the following table:

|                 | <u>Construction</u> | <u>Repair</u> | <u>Alter</u> |
|-----------------|---------------------|---------------|--------------|
| <b>Fittings</b> |                     |               |              |
| Category F      | Shop                | Shop          | Shop         |



*As a condition of this permit, the holder is required to participate in interim audits by a safety codes officer to verify that the quality management system is being maintained in a manner acceptable to a safety codes officer.*

Dated at Edmonton, this 6th day of December, 2013



Chief Inspector and Administrator

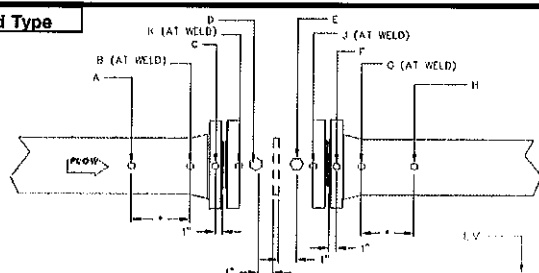
**Certificate No.: 9601**

### Meter Tube Calibration Record

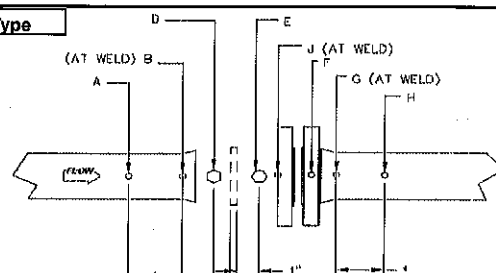
#### General Specifications

|                         |                                       |                     |                 |
|-------------------------|---------------------------------------|---------------------|-----------------|
| Customer:               | RJV Gas Field Services                | Date:               | January 7, 2014 |
| Location:               | Husky Oil Operations                  | P.O. Number:        | 130524          |
| Serial No.              | 12016646509                           | Work Order No.      | 120166465       |
| Assembly Part No.       | 9A-MR_53_0128C                        | Part No.            | 40553-33221     |
| Orifice Fitting:        | 3" 600# Sch 80 Dual Chamber Meter Run | Meter Tube Type No. | 2               |
| Str. Vane / Flow Cond.: |                                       | Yes                 | X               |
|                         |                                       | No                  |                 |

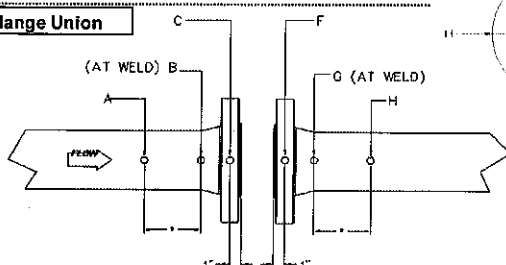
#### Type 1 Flanged Type



#### Type 2 Flangeweld Type



#### Type 3 Orifice Flange Union

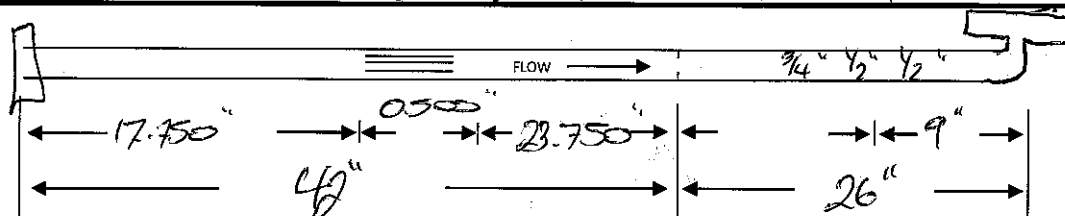


#### Type 4 weldneck Type Valve or Door

Check Location Point A-B-D on Upstream Tube,  
Point E-G-H on Downstream Tube

\*Cross section 'A' and 'H' shall be one pipe diameter  
except if such Cross Section falls within the lifting or weld  
it shall be made 1' inside the pipe

| Location                                     | Upstream Meter Tube |       |       |       |   | Downstream Meter Tube                          |       |       |       |       |
|----------------------------------------------|---------------------|-------|-------|-------|---|------------------------------------------------|-------|-------|-------|-------|
|                                              | A                   | B     | C     | D     | K | E                                              | F     | G     | H     | J     |
| V                                            | 2.900               | 2.914 |       | 2.902 |   | 2.901                                          | 2.890 | 2.900 | 2.895 | 2.903 |
| LV                                           | 2.902               | 2.915 |       | 2.901 |   | 2.900                                          | 2.889 | 2.895 | 2.898 | 2.902 |
| RV                                           | 2.898               | 2.908 |       | 2.902 |   | 2.902                                          | 2.890 | 2.895 | 2.902 | 2.898 |
| H                                            | 2.902               | 2.912 |       | 2.901 |   | 2.901                                          | 2.890 | 2.901 | 2.900 | 2.899 |
| Average                                      | 2.901               | 2.910 |       | 2.902 |   | 2.901                                          | 2.890 | 2.898 | 2.899 | 2.901 |
| Upstream Mean Average to Stamp on I.D. Plate |                     |       | 2.902 |       |   | Downstream Mean Average to Stamp on I.D. Plate |       |       | 2.901 |       |



|                |          |                    |                 |     |            |     |
|----------------|----------|--------------------|-----------------|-----|------------|-----|
| AGA/API Figure | 3 (2000) | Meter Tap Location | Upstream        | N/A | Downstream | N/A |
| Remarks:       | 68*      | Inspector:         | Chris Robertson |     |            |     |

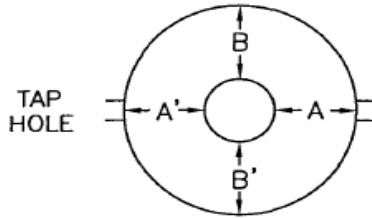
**Cameron Measurement Systems**

3707 - 97th Street

Edmonton, Alberta, Canada T6E 6J2

**QUALITY CONTROL  
INSPECTION REPORT**Customer: RJV Gas Field Svcs.Date: January 31, 2014Location: Husky Oil OperationsPurchase Order No.: 130524Serial No.: 12016646509Orifice Fitting: 3" 600# Sch 80 Dual Chamber Meter RunAssembly No.: 9A-MR\_53\_0128CHydrostatic Test Pressure: 2225

Meter Tube Design Standard API 14.3

Duration: 15 Minutes**ECCENTRICITY**Horizontal  $(A - A')/2$ .....

0.003"

0.004"

Vertical  $(B - B')/2$ .....

0.003"

0.003"

Measurement Instrument:

Mitutoyo Dial Indicator**PRESSURE TAP HOLE VARIATION**

Distance from Plate &amp; Hole Diameter

| Upstream | Hole   | Downstream | Hole   |
|----------|--------|------------|--------|
| 1.005"   | 0.375" | 0.999"     | 0.375" |

Measurement Instrument:

PAV Electronic Depth Gauge**SURFACE ROUGHNESS****Roughness Measurement Location**

Upstream Tube, One Pipe Diameter from Weld

Upstream at Pressure Tap Hole

Downstream at Pressure Tap Hole

Downstream 1" from End of Flange

Microinches

|     |
|-----|
| 48  |
| 40  |
| 100 |
| 100 |

Measurement Instrument:

Mitutoyo 212 Surftester**DIFFERENTIAL TEST**Water Hydrostatic Method at 50 psiDuration 5 Minutes Minimum

Visual: No Leaks

Measurement Instrument:

McDaniels Gauge 0 -100 psiWork Order #: 120166465Lorne Dagg / Fiona O'Neill

## NUFLO™ DUAL CHAMBER ORIFICE FITTING

PART NO.   
SERIAL NO.   
SIZE  BORE   
SWP  FLG   
TRIM

CRN (ASME CODE) 0F01120.2C

 **CAMERON**  
EDMONTON, ALBERTA, CANADA

### TO REMOVE PLATE FROM CHAMBER

1. CLOSE ORIFICE CHAMBER (INDEX ORIFICE OUT OF OPERATION).
2. OPEN BLEED VALVE.
3. OPEN CHAMBER LID (REMOVE TWO TOP NUTS ONLY).
4. REMOVE ORIFICE PLATE (PRY ON HOLES IN RETAINER HANDLE).

### TO PLACE ORIFICE PLATE IN OPERATION

1. REPLACE ORIFICE WITH OUTLET ON PLATE AND SEAL ON RETAINER FACING UPWARD.
2. CLOSE LID.
3. CLOSE BLEED VALVE.
4. OPEN EQUALIZING VALVE.
5. OPEN ORIFICE CHAMBER (INDEX ORIFICE INTO OPERATION).
6. CLOSE EQUALIZING VALVE.

## NUFLO™ METER RUN

ASSY.  
NO.

SERIAL NO.

U/S  
DIA.

D/S  
DIA.

PIPE SIZE

SCH

RATING

AGA / API

MAT'L

DATE

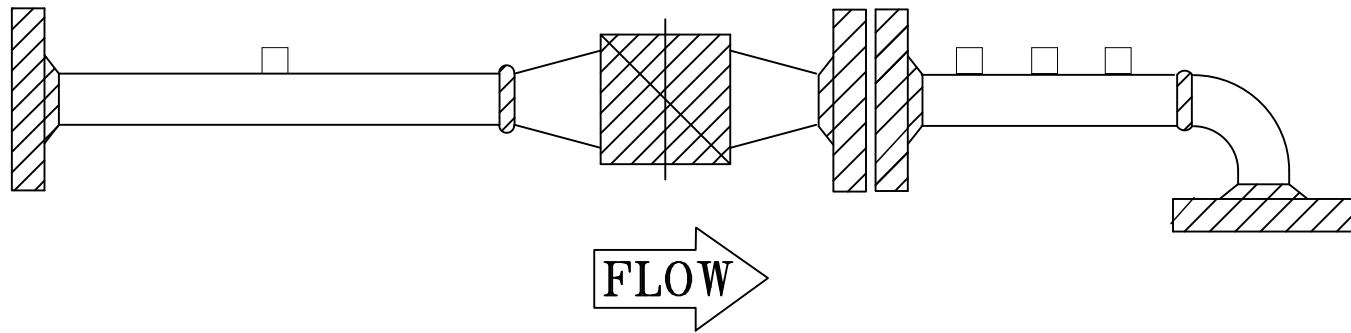
W.O. NO.

CALIBRATION  
CERT'D BY

CRN (ASME CODE) 0F01120.2C

 **CAMERON**  
EDMONTON, ALBERTA, CANADA

# WELD AND RADIOGRAPHY IDENTIFICATION MAP



DESCRIPTION: \_\_\_\_\_

SERIAL No.: \_\_\_\_\_

CUSTOMER: \_\_\_\_\_

P/O No.: \_\_\_\_\_ TAG No.: \_\_\_\_\_

W/O No.: \_\_\_\_\_ END USER: \_\_\_\_\_

RADIOGRAPHY UNIT: \_\_\_\_\_

WELDER: \_\_\_\_\_ FILE No.: \_\_\_\_\_

DATE: \_\_\_\_\_

SYMBOL: \_\_\_\_\_ QUALITY ASSURANCE INSPECTOR



**CAMERON MEASUREMENT SYSTEMS**

**7944 - 10th STREET N.E.**

**CALGARY, AB. T2E 8W1**



A.O.Q.P. No. 7106 (c)

**LUDWIG ASSOCIATES LTD.**

Materials and Welding Consulting

**WELDER PERFORMANCE QUALIFICATION CARD**Name: **Jeff Harrington**ABSA File No.: **W - 23651**

This card is issued pursuant to the Alberta Safety Codes Act and the Pressure Welders Regulation. The performance qualification is in accordance with ASME Section IX of the ASME Code and subject to the limitations on the reverse side.

August 10, 2012

Date of Test

Signature of Welder or Machine Operator

**Colin Burnette**

Welding Examiner

Card No.: **01758****PERFORMANCE QUALIFICATION****01758**

|                           |                 |           |                       |                                |
|---------------------------|-----------------|-----------|-----------------------|--------------------------------|
| Process(es)               | GMAW            | SMAW      | Materials (P.No)      | P1                             |
| Filler Metal Group (F.No) | F6              | F4        | Min. Outside Diameter | 1.0 in. O.D.                   |
| Max. Deposited Weld Metal | 0.110 in.       | 0.672 in. | Position(s) Qualified | F6: SP 0-45°, Flat<br>F4: Flat |
| Backing                   | With or Without | With      | Backing Gas           | With or Without                |
| Progression               | Downhill        | N/A       |                       |                                |

August 10, 2014

P.Q. Expiry Date

Welding Examiner Signature

E-00391

Examiner File No.

**SGS**

A.O.Q.P. No. 7106 (c)

**LUDWIG****WELDER PERFORMANCE QUALIFICATION CARD**Name: **Jeff Harrington**ABSA File No.: **W - 23651**

This card is issued pursuant to the Alberta Safety Codes Act and the Pressure Welders Regulation. The performance qualification is in accordance with ASME Section IX of the ASME Code and subject to the limitations on the reverse side.

November 22, 2013

Date of Test

Signature of Welder or Machine Operator

**Rob Cormier**

Welding Examiner

Card No.: **13013****PERFORMANCE QUALIFICATION****13013**

|                           |                 |      |                       |                                |
|---------------------------|-----------------|------|-----------------------|--------------------------------|
| Process(es)               | GMAW            | FCAW | Materials (P.No)      | P1                             |
| Filler Metal Group (F.No) | F6              | F6   | Min. Outside Diameter | 1.0 in. O.D.                   |
| Max. Deposited Weld Metal | 0.110 in.       | MAX  | Position(s) Qualified | GM: SP 0-45°, Flat<br>FC: Flat |
| Backing                   | With or Without | With | Backing Gas           | With or Without                |
| Progression               | Downhill        | N/A  |                       |                                |

November 22, 2015

P.Q. Expiry Date

Welding Examiner Signature

E-00441

Examiner File No.



19699

**Grade "B" Pressure Welder's  
Certificate of Competency**

This is to certify that **Jeff Harrington**  
having complied with provisions of the Safety Codes Act, is authorized to engage  
in pressure welding in accordance with the prescribed Regulations.

Dated at Edmonton  
April 01, 2006

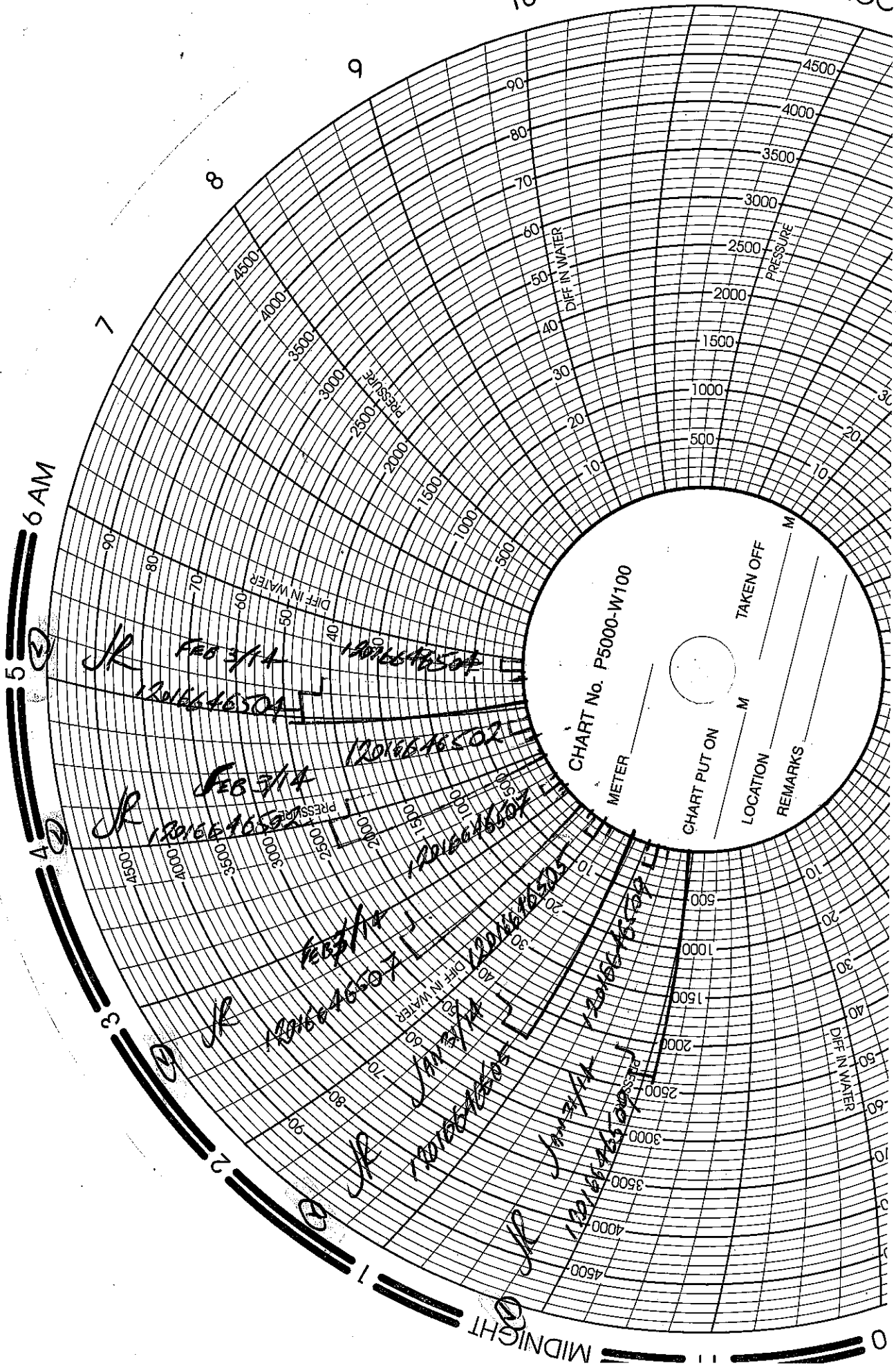


W-23651

File no

Chief Inspector and Administrator





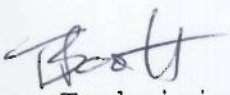
MST1201  
11/15/13

Highland Foundry Ltd.  
CHEMICAL AND PHYSICAL ANALYSIS

Page 1  
14:53:30

Product# . . . : 40713-001  
Customer Part#: 9A-40713-001-00000  
Customer . . . : CAMERON SHARED SERVICE CENTER  
ACCOUNTS PAYABLE  
PO BOX 3312  
HOUSTON TX 77253-3312  
USA

Order/Item# . . : 38411 / 2  
Customer P.O.#: 4503940759

Approved by: Patricia Booth   
Quality Assurance Technician

Heat Treatment: 1700 Deg F, 3 Hours, Air Cool

| Melt#   | Quantity | Date     | Heat Treat | BATCH # | :   | Specification       |
|---------|----------|----------|------------|---------|-----|---------------------|
| 3-11684 | 6        | 10/31/13 |            | 4MM     | - - | ASTM A216 GRADE WCB |

C H E M I C A L S

|         |         |         |         |
|---------|---------|---------|---------|
| C :.230 | MN:.970 | SI:.540 | P :.018 |
| S :.011 | NI:.060 | CR:.240 | MO:.020 |
| CU:.070 | V :.006 |         |         |

P H Y S I C A L S

|              |      |              |      |
|--------------|------|--------------|------|
| YIELD KSI    | 57.2 | TENSILE KSI  | 84.8 |
| ELONGATION % | 28   | RED OF AR. % | 51   |

CE = 0.45



MATERIAL TEST REPORT

9670-187th Street, Surrey, BC Canada V4N 3N6  
Phone 604•888•8444 Fax 604•888•3634  
www.highlandfoundry.com

ISO 9001 CERTIFIED



# Hardness Test Report



OUR REPUTATION IS STAINLESS®

|                                          |                               |              |            |
|------------------------------------------|-------------------------------|--------------|------------|
| Customer                                 | Cameron Measurement Systems   | PO Number    | 4503940759 |
| Part Number<br>Description<br>& other ID | 40713-001<br>3" DUAL CH. BODY | Order Number | 38411 / 2  |
| Material Specification                   | ASTM A216 Grade WCB           | Date         | 11/18/13   |
| Inspection Method                        | ASTM E10                      | Qty          | 36         |

Equipment Used: Portable King Brinell Tester

Type of Ball: Regular ☐ Carbide ☒

Load: 3000 kg

Holding Time: 10 sec

Hardness Required: 237 Max Brinell ☒ Rockwell ☐

| Heat No. / Batch No. | % of Batch Tested | Hardness Obtained |
|----------------------|-------------------|-------------------|
| 1-11731 / 1MG        | 10%               | 167, 163          |
| 4-11174 / 2MG        | 10%               | 156, 159          |
| 3-11684 / 4MM        | 10%               | 167, 167          |
| 1-11676 / 7LU        | 10%               | 156, 163          |
|                      |                   |                   |
|                      |                   |                   |
|                      |                   |                   |
|                      |                   |                   |
|                      |                   |                   |

Remarks:

Tested By:

Max Zanazovsky  
Inspector

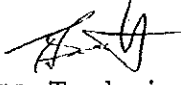
MST1201  
12/18/13

Highland Foundry Ltd.  
CHEMICAL AND PHYSICAL ANALYSIS

Page 1  
10:16:34

Product# . . . : 40703-005  
Customer Part#: 9A-40703-005-00000  
Customer . . . : CAMERON SHARED SERVICE CENTER  
ACCOUNTS PAYABLE  
PO BOX 3312  
HOUSTON TX 77253-3312  
USA

Order/Item# . . : 38466 / 14  
Customer P.O.#: 4510215775

Approved by: Patricia Booth   
Quality Assurance Technician

Heat Treatment: 1700 Deg F, 3 Hours, Air Cool

| Melt#   | Quantity | Date     | Heat Treat | BATCH # | : | Specification       |
|---------|----------|----------|------------|---------|---|---------------------|
| 2-11492 | 50       | 12/02/13 |            | 3MX     | - | ASTM A216 GRADE WCB |

| C H E M I C A L S |         |         |         |
|-------------------|---------|---------|---------|
| C :.200           | MN:.800 | SI:.500 | P :.023 |
| S :.014           | NI:.060 | CR:.220 | MO:.020 |
| CU:.070           | V :.010 |         |         |

| P H Y S I C A L S |      |              |      |
|-------------------|------|--------------|------|
| YIELD KSI         | 51.5 | TENSILE KSI  | 77.2 |
| ELONGATION %      | 35   | RED OF AR. % | 65   |

CE = 0.39



### MATERIAL TEST REPORT

9670-187th Street, Surrey, BC Canada V4N 3N6  
Phone 604•888•8444 Fax 604•888•3634  
www.highlandfoundry.com

ISO 9001 CERTIFIED

# Hardness Test Report



OUR REPUTATION IS STAINLESS™

|                                          |                              |              |            |
|------------------------------------------|------------------------------|--------------|------------|
| Customer                                 | Cameron Measurement Systems  | PO Number    | 4510215775 |
| Part Number<br>Description<br>& other ID | 40703-005<br>3" DUAL CH. LID | Order Number | 38466 / 14 |
| Material Specification                   | ASTM A216 Grade WCB          | Date         | 12/16/13   |
| Inspection Method                        | ASTM E10                     | Qty          | 50         |

Equipment Used: Portable King Brinell Tester

Type of Ball: Regular ☐ Carbide ☒

Load: 3000 kg

Holding Time: 10 sec

Hardness Required: 237 Max Brinell ☒ Rockwell ☐

| Heat No. / Batch No. | % of Batch Tested | Hardness Obtained          |
|----------------------|-------------------|----------------------------|
| 2-11492 / 3MX        | 10%               | 174, 170, 174,<br>174, 174 |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |
|                      |                   |                            |

Remarks:

Tested By:

Dustin Bain  
Inspector

7# 20221-001

# ASCOMETAL



Département Métallurgie Qualité  
Case des Doms - Boite postale #1  
59811 Dunkerque Cedex 2  
Téléphone 03 28 29 60 00  
Téléfax 03 28 29 60 03

## DOCUMENT DE CONTROLE

Inspection Documents / Prüfbescheinigungen

Inspection Certificate 3.1  
NF EN 10204  
2004

Livraison  
N° Contrôle 80175838 / 000005  
030000211705

Date 18.04.2012  
Date d'édition 22.05.2012

|                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                            |                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ORDRE DE FABRICATION<br>WORKS ORDER NUMBER<br>AFFAIRE SUIVIE PAR<br>YOUR CONTACT IS / BEARBEITER<br>N/REFERENCE<br>ASCOMETAL ORDER<br>V/REFERENCE<br>YOUR ORDER / IHMI ZECHNUNG<br>QUANTITE<br>QUANTITY / MENGE<br>PRODUIT<br>PRODUCT DESCRIPTION / BESCHREIBUNG<br>SPECIFICATION CLIENT<br>SPECIFICATION - SPEZIFIKATION<br>IND<br>REV. ENTREE<br>SPECIFICATIONS SUPP. | H5855AE<br>ORPHEE GINETTE<br>501203504 / 000010 (70047196)<br>SOC-13504 76P10S174 ( 5497)<br>06.02.2012<br>8,971 TO<br>A105 ROL. ROUNDS CLESS TURN 6,750 IN NORMALISED<br>CORUS 0876-010R<br>SANS<br>DATE 06.11.2002<br>DATA DATUM<br>SANS | COULÉE H5855<br>CAST - SCHÜSSELZ<br>DESTINATAIRE DOCUMENT<br>DOCUMENT FOR SUPPLIER<br>Société<br>ENCORE METALS<br>EDMONTON<br>ALBERTA T6E 0A1<br>Canada<br>MARQUE<br>CCU<br>D000002218 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Analyse chimique de coulée / Ladie analysis / Schmelzeanalyse

| Elément (%)          | Elément  | Teil  | C     | Mn     | Si    | Cr    | Ni    | Mo    | Cu    | P     | S     | Al    |
|----------------------|----------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mini                 | Spec min | Min   |       | 0,600  | 0,150 |       |       |       |       |       |       |       |
| Valeur               | Actual   | Werte | 0,180 | 1,167  | 0,201 | 0,238 | 0,089 | 0,024 | 0,092 | 0,005 | 0,022 | 0,020 |
| Maxi                 | Spec max | Max   | 0,270 | 1,350  | 0,300 | 0,300 | 0,400 | 0,120 | 0,400 | 0,035 | 0,040 |       |
| Elément              | Elément  | Teil  | V     | Cb     |       |       |       |       |       |       |       |       |
| Mini                 | Spec min | Min   |       |        |       |       |       |       |       |       |       |       |
| Valeur               | Actual   | Werte | 0,044 | 0,0130 |       |       |       |       |       |       |       |       |
| Maxi                 | Spec max | Max   | 0,080 | 0,0200 |       |       |       |       |       |       |       |       |
| Contraintes groupées |          |       |       |        |       |       |       |       |       |       |       |       |
| Elément              |          |       | Mini  | Valeur | Maxi  |       |       |       |       |       |       |       |
| CEq                  |          |       |       | 0,448  | 0,450 |       |       |       |       |       |       |       |
| Ni+Cr+Mo+Cu          |          |       |       | 0,443  | 1,000 |       |       |       |       |       |       |       |
| Cr+Mo                |          |       |       | 0,262  | 0,320 |       |       |       |       |       |       |       |

### Caractéristiques mécaniques / Mechanical properties / Mechanische Kennwerte

Traction / tensile test / Zugversuch  
Nappe / Batch number / Los number : 1853  
Diameter of test specimen (in)  
mid radius tested  
Longitudinal test  
Tensile test temperature (°F)

0,50

70

| Elément | Elément  | Teil     | Ys 2% | UTS   | E (2in) | RA |
|---------|----------|----------|-------|-------|---------|----|
| Unité   | Unit     | Meinheit | PSI   | PSI   | %       | %  |
| Mini    | Spec min | Min      | 45000 | 70000 | 22,0    | 30 |
| Valeur  | Actual   | Werte    | 51925 | 78924 | 31,2    | 69 |
| Maxi    | Spec max | Max      |       | 95000 |         |    |

Résilience / Impact test / Kerbschlagproben  
Nappe / Batch number / Los number : 1853  
notch test 10 x 10  
Mid radius testing  
Charpy V notch  
Longitudinal test  
Impact test temperature (°F)

-50

|         |          |          |
|---------|----------|----------|
| Elément | Element  | Teil     |
| Unité   | Unit     | Meinheit |
| Mini    | Spec min | Min      |
| Valeur  | Actual   | Werte    |
| Maxi    | Spec max | Max      |

HEAT # H5855AE  
P.O.# P105174  
R# R115089  
ITEM # 549763

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande, respectent la directive européenne 2009/51/CE du 18 septembre 2009 et présentent un niveau de radioactivité au plus égal à la radioactivité ambiante.

We hereby certify, the above mentioned products are compliant with the order requirements, are respectful of the September, 18th 2009 - 2009/51/CE - european directive, and have a radioactivity level which does not exceed that present in the environment.

Wir bestätigen hiermit dass die oben genannten Fertigerzeugnisse den Bestehungsanforderungen, der EU-Richtlinie 2009/51/CE vom 18. September 2009 entsprechen und die gefertigten Produkte keine Radioaktivität, die Höher ist als natürliche Strahlung der Umwelt, aufweisen.

ASCOMETAL SAS  
au capital de 63 285 430 EUR

Siège social : Immeuble le Collisée - 8, avenue de l'arche, Faubourg de l'Arche, 92419 COURBEVOIE Cedex

331 048 132 RCS Nanterre

# ASCOMETAL



Département Métallurgie Qualité  
Usine des Dunas - Bellefleur 41  
59341 Dunkerque Cedex 2  
Téléphone 03 28 29 60 00  
Télécopie 03 28 29 60 03

## DOCUMENT DE CONTROLE

Inspection Documents / Prüfbescheinigungen

Inspection Certificate 3.1

NFEN 10204 / DIN EN 10204  
2004 / 2004

ISO 9001  
2004

Livraison  
N° Contrôle

80179838 / 000005  
030000211705

Date  
Date d'édition

18.04.2012  
22.05.2012

|                                                                |                                                 |                                 |            |                                                        |            |
|----------------------------------------------------------------|-------------------------------------------------|---------------------------------|------------|--------------------------------------------------------|------------|
| <b>ORDRE DE FABRICATION</b><br>WORK ORDER NUMBER: WORKSTELLUNG | H5855AE                                         | <b>COULEE</b><br>CAST: SCHMELZE | H5855      | <b>DESIGNATURE DOCUMENT</b><br>DOCUMENT FOR: EMPFÄNGER |            |
| <b>APPAIRE SUIVIE PAR</b><br>YOUR CONTACT IS: BEZUGSSTELLE     | ORPHEE GINETTE                                  |                                 |            | <b>Société</b><br>ENCORE METALS                        |            |
| <b>N/REFERENCE</b><br>ASCOMETAL ORDER: WERKSTELLUNG            | 501203504 / 000010 (70047196)                   |                                 |            | <b>EDMONTON</b>                                        |            |
| <b>V/REFERENCE</b><br>YOUR ORDER: IHRE ZUHILF                  | SOC-13504 76P105174 ( 5497)<br>06.02.2012       |                                 |            | <b>ALBERTA T6E 0A1</b>                                 |            |
| <b>QUANTITE</b><br>QUANTITY / MENGE                            | 8,971 TO NUANCE A105<br>GRAD: PHOSPHORE         |                                 |            | <b>CANADA</b>                                          |            |
| <b>PRODUIT</b><br>PRODUCT DESCRIPTION: BESCHREIBUNG            | A105 ROL. ROUNDS CLESS TURN 6,750 IN NORMALISED |                                 |            |                                                        |            |
| <b>SPECIFICATION CLIENT</b><br>SPECIFICATION: SPECIFICATION    | CORUS 0876-010R                                 |                                 |            |                                                        |            |
| <b>IND</b><br>REV: KATWURF                                     | SANS                                            | <b>DATE</b><br>DATE: DATUM      | 06.11.2002 | <b>CCU</b>                                             | D000002118 |
| <b>SPECIFICATIONS SUPP.</b>                                    | SANS                                            |                                 |            |                                                        |            |

|                                                               |       |              |       |                   |                                          |
|---------------------------------------------------------------|-------|--------------|-------|-------------------|------------------------------------------|
| <b>Traitement thermique / Heat treatment / Wärmbehandlung</b> |       |              |       |                   |                                          |
| Traitement<br>Norm. temp.                                     | T Min | T<br>1652 °F | T Max | Durée<br>3,50 hrs | Refroidissement<br>Normalized air cooled |

|                                                                               |                     |             |         |  |  |
|-------------------------------------------------------------------------------|---------------------|-------------|---------|--|--|
| <b>Dureté de surface sur barres / Bars surface hardness / Stäbe Randhärte</b> |                     |             |         |  |  |
| Elément<br>Mini                                                               | Elément<br>Spec min | Teil<br>Min | BHN top |  |  |
| Valeur                                                                        | Actual              | Werte       | 167     |  |  |
| Maxi                                                                          | Spec max            | Max         | 187     |  |  |

|                                                                                                                                                                                                                                                                              |           |             |           |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|-----------|--|--|
| <b>Autres résultats / Other results / Andere Prüfergebnisse</b>                                                                                                                                                                                                              |           |             |           |  |  |
| Elément<br>Grain size M-Quaid Ehn                                                                                                                                                                                                                                            | Mini<br>5 | Valeur<br>7 | Maxi<br>8 |  |  |
| Electric furnace - vacuum degassed<br>Conforms to NACE MR 01-75<br>Ultrasonic testing 100% satisfactory<br>Conforms to ASTM A105 - A350LF2<br>Conforms to ASTM A696 gr C - ASME SA696 gr C<br>Conforms to API 6A type 4SK - PSI-1-3 cl I.<br>Conforms to ASME SA105/SA350LF2 |           |             |           |  |  |
| Continuous cast<br>Produit en France / Product of France / In Frankreich hergestellt                                                                                                                                                                                         |           |             |           |  |  |

Visa du chef de service  
Stamp of inspection supervisor  
Der Werkssachverständige  
Anne Fasquelle

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande, respectent la directive européenne 2000/53/CE du 18 septembre 2000 et présentent un niveau de radioactivité au plus égal à la radioactivité ambiante.

ASCOMETAL SAS  
au capital de 65 385 430 EUR

331 048 132 RCS Nanterre

We hereby certify the above mentioned products are complying with the order requirements, are in respect of the September, 18th 2000 - 2000/53/CE - european directive, and have a radioactivity level which does not exceed that present in the environment.

Siege social : Immeuble le Colisée - 8, avenue de l'Arche, Faubourg de l'Arche, 92419 COURBEVOIE Cedex

Wir bestätigen hiermit dass die obengenannten Erzeugnisse den Bestimmungsvorgaben, der EU-Richtlinie 2000/53/CE vom 18 September 2000 entsprechen, und die gelieferten Produkte keine Radioaktivität die höher ist als natürliche Strahlung der Umwelt aufweisen.



CLIENTE / Customer / Client

**CCTF CORPORATION (EDMONTON)**  
5407 - 53 AVENUE NW  
EDMONTON, AB T6B 3G2  
CANADA

# CERTIFICADO DE INSPECCION

Inspection Certificate - Certificat de Réception

DIN EN 10204 / 3.1  
ISO 10474 / 3.1

FECHA:  
Date:

06/09/2013

N.º  
No.

159617

HOJA:  
Page:

1



Management Systems certified by LRQA

ULMA FORJA S.COOP.

PRODUCTO  
Article - Produit

FLANGES

SU PEDIDO N.º

Your Order No. 4893119-00

Votre Cde. N.º

DE

of. - de 31/05/2013

Certified acc. FED 97/23/EC+AD2000-WO  
by TÜV Rheinland  
N.º 01 202 E/Q 02 7443

Bº Zubillaga, 3 - Apdo. 14  
20560 ONATI (Gipuzkoa) SPAIN  
Tel.: 34 - 943 780552  
Fax: 34 - 943 781808  
E-mail: ulma@ulmapiping.com

NORMAS APLICABLES  
Requirements - Normes Applicables

ASME B16.5-13

MATERIAL CORRESPONDIENTE ASME SA105-10 add.11, ASTM A105N-12

Material Correspondent - Qualité

MODO DE FUSION (\*)

Steel Making - Elaboration de l'acier

E = Elec. Y = Oxígeno básico

NACE MR0175/ISO15156-2-09 & MR0103-12

Clause 7.2.1.4, Annex A.2 and SSC Region 3.

CSA-Z245.12-09 Gr.248 CAT I-S8 (WN & BLIND FLANGES ONLY)

MARCA DEL FABRICANTE  
Mark of factory  
Marque du fabricant



Packing List: 104607

DEPARTAMENTO QUALITY ASSURANCE

Section

Département

| PARTIDA<br>Item<br>Poste | CANTIDAD<br>Quantity<br>Quantité | DESCRIPCION<br>Description<br>Description | OBSERVACIONES<br>Remarks<br>Observations<br>(*) | COLADA N.º<br>Heat No<br>N.º Coulée | RESISTENCIA<br>T.Strength<br>Resist Rupt<br>N/mm2 | LIMITE ELAST.<br>Y.Strength<br>0.2 %<br>N/mm2 | ALARGAM.<br>Elongation<br>Alongement<br>Lo: 4 d<br>% | ESTRICCION<br>Red. Area<br>Striction<br>% | RESILIENCIA<br>Impact test<br>Résilience<br>Joules | CHARPY V 10x10mm<br>MEDIA<br>Average<br>Moyenne<br>°C | DUREZA<br>Hardness<br>Dureté<br>HBW |
|--------------------------|----------------------------------|-------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------------------|------------------------------------------------------|-------------------------------------------|----------------------------------------------------|-------------------------------------------------------|-------------------------------------|
| 21 7530250               | 420                              | WN 3 600LB XS/80 RF A105N                 | NE                                              | B29T3                               | 516                                               | 320                                           | 33,20                                                | 52,90                                     |                                                    |                                                       | 154 159                             |
| 21 7530250               | 580                              | WN 3 600LB XS/80 RF A105N                 | NE                                              | B30T3                               | 519                                               | 309                                           | 31,70                                                | 53,40                                     |                                                    |                                                       | 152 157                             |
| 22 7530277               | 288                              | WN 6 600LB XS/80 RF A105N                 | NE                                              | B28T3                               | 508                                               | 315                                           | 31,80                                                | 52,60                                     |                                                    |                                                       | 147 153                             |
| 30 7531079               | 72                               | BLIND 6 600LB RF A105N                    | NE                                              | B02T3                               | 507                                               | 303                                           | 29,70                                                | 56,90                                     |                                                    |                                                       | 150 155                             |

| COLADA N.º<br>Heat No<br>N.º Coulée | COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------|-----------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                     | C %                                                                   | Si %  | Mn %  | P %   | S %   | Cr %  | Ni %  | Mo %  | Nb %  | V %   | Cu %  | Al %  | Ti %  | N %   | CEq % |
| B02T3                               | 0,210                                                                 | 0,160 | 0,890 | 0,012 | 0,012 | 0,050 | 0,130 | 0,018 | 0,006 | 0,001 | 0,290 | 0,000 | 0,000 | 0,000 | 0,400 |
| B28T3                               | 0,210                                                                 | 0,160 | 0,860 | 0,014 | 0,013 | 0,060 | 0,130 | 0,022 | 0,004 | 0,001 | 0,270 | 0,000 | 0,000 | 0,000 | 0,397 |
| B29T3                               | 0,200                                                                 | 0,150 | 0,910 | 0,013 | 0,012 | 0,060 | 0,090 | 0,019 | 0,006 | 0,001 | 0,340 | 0,000 | 0,000 | 0,000 | 0,396 |
| B30T3                               | 0,190                                                                 | 0,160 | 0,880 | 0,012 | 0,012 | 0,080 | 0,110 | 0,032 | 0,008 | 0,002 | 0,360 | 0,000 | 0,000 | 0,000 | 0,391 |

- Las dimensiones y la condición superficial se hallaron satisfactorias.  
- Dimension and surface condition were found acceptable.  
- Les dimensions et états de surface sont satisfaisants.

- Los materiales citados cumplen las normas aplicables.  
- Manufacturing requirements are satisfied.  
- Les normes applicables sont respectées.

EL INSPECTOR  
Works Inspector - L'Inspecteur



ULMA FORJA S.COOP.  
Dpto. de Garantía de calidad  
Quality Assurance Dept.

(\*) OBSERVACIONES:  
Remarks  
Observations

N\_NORMALIZED AT 900 C AND ALLOWED TO COOL IN STILL AIR



# INSPECTION CERTIFICATE

(MILL TEST)

CHUP HSIN ENTERPRISE CO., LTD.

Customer: TRANS AM PIPING PRODUCTS LTD.  
Product : SEAMLESS CARBON STEEL BUTT WELD FITTINGS  
Spec : ASME SA/ASTM A234 WPB-05a  
CSA Z245.11-96 Gr241 CAT.1 NACE MR 0175-2003\*\*

17, TUNG LI ROAD HSIAO KANG  
KAHSIUNG, TAIWAN R.O.C.  
TEL: (07) 831-9157  
FAX: (07) 831-2942, 821-7500

Certificate No : 09900095-0401  
Order No : CT-11-458  
Date : 2011/11/22

| Specification for Raw Material |                        |      |      | Specification for Inspection |       |      |          | Visual Examination |          |       |                  | Dimensional Inspection |                     |       |       |                      |                            |                               |                                                           |
|--------------------------------|------------------------|------|------|------------------------------|-------|------|----------|--------------------|----------|-------|------------------|------------------------|---------------------|-------|-------|----------------------|----------------------------|-------------------------------|-----------------------------------------------------------|
| ASTM A106 GR.B                 |                        |      |      | ASME B16.9-2003              |       |      |          | GOOD               |          |       |                  | GOOD                   |                     |       |       |                      |                            |                               |                                                           |
| Item                           | Description            |      |      | Quantity                     |       |      | Heat ID. |                    | Heat No. |       | Raw Material Mfg |                        | Raw Certificate NO. |       |       |                      |                            |                               |                                                           |
| 12                             | 45 E L/R STD SEAMLESS  | 10   |      |                              |       |      | 4590     |                    | 014590   |       | TIANJIN          |                        | 11081006            |       |       |                      |                            |                               |                                                           |
| 12                             | 45 E L/R STD SEAMLESS  | 10   |      |                              |       |      | 5413     |                    | 1015413  |       | SUMITOMO         |                        | WYYL7675            |       |       |                      |                            |                               |                                                           |
| 13                             | 45 E L/R STD SEAMLESS  | 14   |      |                              |       |      | A410     |                    | 1133410  |       | HENG YANG        |                        | 2011-01-0624-4.     |       |       |                      |                            |                               |                                                           |
| 33                             | 90 E S/R STD SEAMLESS  | 16   |      |                              |       |      | 5455     |                    | 205455   |       | TIANJIN          |                        | 11031120            |       |       |                      |                            |                               |                                                           |
| 36                             | 180 E L/R STD SEAMLESS | 3    |      |                              |       |      | A740     |                    | 314740   |       | BAOSHAN          |                        | 1105300002400       |       |       |                      |                            |                               |                                                           |
| 66                             | 90 E L/R XS SEAMLESS   | 3    |      |                              |       |      | 6044     |                    | 316044   |       | BAOSHAN          |                        | 1108050015200       |       |       |                      |                            |                               |                                                           |
| Specifi-<br>cation             | Chemical Composition % |      |      |                              |       |      |          |                    |          |       |                  |                        | Tension Test        |       |       | HARD<br>NESS<br>TEST | Heat<br><br>Treatment      | Magnetic<br>Particle<br>Exam. | Remark                                                    |
|                                | C                      | Si   | Mn   | P                            | S     | Cu   | Ni       | Cr                 | Mo       | V     | Nb               | C.E.                   | Y.S.                | T.S.  | E     |                      |                            |                               |                                                           |
|                                | ×100                   | ×100 | ×100 | ×1000                        | ×1000 | ×100 | ×100     | ×100               | ×100     | ×1000 | ×1000            | ×100                   | P.S.I               | P.S.I | %     | HB                   |                            |                               |                                                           |
|                                | MIN                    |      | 10   | 29                           |       |      |          |                    |          |       |                  |                        |                     | 35000 | 60000 | 30                   |                            |                               |                                                           |
| MAX                            | 30                     |      | 106  | 50                           | 58    | 40   | 40       | 40                 | 15       | 80    | 20               | 50                     |                     | 95000 |       | 197                  |                            |                               |                                                           |
| 12                             | 17                     | 23   | 105  | 12                           | 3     | 7    | 3        | 8                  | 3        | 0     | 0                | 36                     | 49334               | 74000 | 45    | 136                  | 620℃ TO 980℃<br>HOT FORMED |                               | [DIN 50049/3.1B]<br>EN10204 3.1<br>**& ISO 15156-<br>2009 |
| 12                             | 19                     | 20   | 86   | 12                           | 8     | 2    | 1        | 3                  | 0        | 0     | 0                | 33                     | 44300               | 64500 | 40    | 135                  |                            |                               |                                                           |
| 13                             | 15                     | 22   | 85   | 11                           | 8     | 7    | 2        | 3                  | 1        | 3     | 1                | 30                     | 51511               | 67500 | 51    | 136                  |                            |                               |                                                           |
| 33                             | 15                     | 23   | 68   | 6                            | 4     | 7    | 3        | 3                  | 2        | <1    | <1               | 27                     | 39177               | 66000 | 48    | 134                  |                            |                               |                                                           |
| 36                             | 19                     | 23   | 55   | 8                            | 3     | 6    | 4        | 5                  | 3        | <1    | <1               | 29                     | 43240               | 71500 | 33    | 134                  |                            |                               |                                                           |
| 66                             | 18                     | 25   | 55   | 8                            | 3     | 4    | 3        | 4                  | 2        | <1    | <1               | 28                     | 42224               | 67600 | 36    | 138                  |                            |                               |                                                           |

C.E = C+MN/6+(CR+MO+V)/5+(NI+CU)/15

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with the requirements of above specifications and purchaser's order.

Chief of Quality Assurance Section

*L. S. Tsai*



Manufacturer of Piping and Pressure Vessel Components

4404 Haygood St - Houston, TX 77022

Phone: 713-695-3633 Fax: 713-695-3528

A Bonney Forge Company

Page 48 of 52

Sold To: TRANS AM PIPING PRODUCTS  
 LTD  
 9335 ENDEAVOR DRIVE S.E.  
 CALGARY AB T3S 0A1

MTR #: 238,725

PO #: CI-12-523

Sales Order #: C001213717

Date: 09/25/2012

This product has not come in direct contact with mercury or any of its compounds, nor with any mercury-containing device employing a single boundary of containment. No welding performed.

We certify that the contents of this report are correct and accurate, and that all test results and operations performed by WFI or its subcontractors are in compliance with the material specification and requirements of the referenced code or standard, and that the material conforms to the dimensional requirements of the order. This document is in accordance with EN10204 3.1.

Material: A/SA105N 09

| Item | Quantity | Description                           |
|------|----------|---------------------------------------|
| 4    | 1,000    | 36 - 1 1/2 X 3/4 3M THP ←<br>A/SA105N |
| 17   | 2,500    | 36 - 1 1/2 X 3/4 3M SWP<br>A/SA105N   |

#### Chemical Composition

| Ladle | C     | CR   | CU    | MN   | MO    | NB    | NI   | P     |
|-------|-------|------|-------|------|-------|-------|------|-------|
|       | 0.201 | 0.06 | 0.140 | 0.97 | 0.007 | 0.012 | 0.03 | 0.012 |
|       | S     | SI   | V     |      |       |       |      |       |
|       | 0.019 | 0.18 | 0.004 |      |       |       |      |       |

Carbon Equivalency: Ladle 0.39

| Product | Tensile PSI | Yield PSI | Elong % | RA %  | Hardness |
|---------|-------------|-----------|---------|-------|----------|
|         | 73,500      | 47,200    | 29.00   | 59.00 | 141 BHN  |

Normalized

IAW NACE MR0175/ ISO 15156- 2009



Manufacturer of Piping and Pressure Vessel Components

4404 Haygood St - Houston, TX 77022

Phone: 713-695-3633 Fax: 713-695-3528

A Bonney Forge Company

Page 2 of 2

Sold To: TRANS AM PIPING PRODUCTS  
 LTD  
 9335 ENDEAVOR DRIVE S.E.  
 CALGARY AB T3S 0A1

MTR #: 246,756

PO #: CI-13-124

Sales Order #: C001300902

Date: 02/05/2013

This product has not come in direct contact with mercury or  
 any of its compounds, nor with any mercury-containing  
 device employing a single boundary of containment. No  
 welding performed.

We certify that the contents of this report are correct and  
 accurate, and that all test results and operations performed  
 by WFI or its subcontractors are in compliance with the  
 material specification and requirements of the referenced  
 code or standard, and that the material conforms to the  
 dimensional requirements of the order. This document is in  
 accordance with EN10204 3.1.

### Certified Material Test Report

Heat Code: 58962

Material: A/SA105N 09

| Item | Quantity | Description                       |
|------|----------|-----------------------------------|
| 4    | 34       | 36 - 3/4 X 1/2 3M THP<br>A/SA105N |

#### Chemical Composition

| Ladle | C     | CR   | CU    | MN   | MO    | NE    | NI   | P     |
|-------|-------|------|-------|------|-------|-------|------|-------|
|       | 0.200 | 0.04 | 0.070 | 1.05 | 0.005 | 0.012 | 0.02 | 0.009 |
|       | S     | SI   | V     |      |       |       |      |       |
|       | 0.019 | 0.20 | 0.004 |      |       |       |      |       |

Carbon Equivalency: Ladle 0.39

| Product | Tensile PSI | Yield PSI | Elong % | RA %  | Hardness |
|---------|-------------|-----------|---------|-------|----------|
|         | 79,000      | 47,700    | 28.00   | 63.00 | 159 BHN  |

Normalized

IAW NACE MR0175/ISO 15156-2009

Marie Dehmer  
 Quality Assurance Representative



Manufacturer of Piping and Pressure Vessel Components

4404 Haygood St - Houston, TX 77022

Phone: 713-695-3633 Fax: 713-695-3528

A Bonney Forge Company

Page 16 of 20

Sold To: TRANS AM PIPING PRODUCTS  
 LTD  
 9335 ENDEAVOR DRIVE S.E.  
 CALGARY AB T3S 0A1

MTR #: 258,027

PO #: CI-13-444

Sales Order #: C001311061

Date: 07/26/2013

This product has not come in direct contact with mercury or  
 any of its compounds, nor with any mercury-containing  
 device employing a single boundary of containment. No  
 welding performed.

We certify that the contents of this report are correct and  
 accurate, and that all test results and operations performed  
 by WFI or its subcontractors are in compliance with the  
 material specification and requirements of the referenced  
 code or standard, and that the material conforms to the  
 dimensional requirements of the order. This document is in  
 accordance with EN10204 3.1.

### Certified Material Test Report

Heat Code: 59065

Material: A/SA105N 09

| Item | Quantity | Description                       |
|------|----------|-----------------------------------|
| 3    | 750      | 36 - 3/4 X 1/2 3M THP<br>A/SA105N |

#### Chemical Composition

| Ladle | C     | CR   | CU    | MN   | MO    | NB    | NI   | P     |
|-------|-------|------|-------|------|-------|-------|------|-------|
|       | 0.200 | 0.11 | 0.060 | 1.07 | 0.012 | 0.013 | 0.02 | 0.007 |
| S     | SI    | V    |       |      |       |       |      |       |
|       | 0.019 | 0.19 | 0.004 |      |       |       |      |       |

Carbon Equivalency: Ladle 0.41

| Product | Tensile PSI | Yield PSI | Elong % | RA %  | Hardness |
|---------|-------------|-----------|---------|-------|----------|
|         | 79,500      | 49,500    | 28.00   | 66.00 | 163 BHN  |

Normalized

IAW NACE MR0175/ ISO 15156- 2009

Marie Dehmer

Quality Assurance Representative





3020 FORON RD.  
1121 HARRISON AV PMB 293  
CENTRALIA WA 98531

# Material Test Report

Manufactured by:  
Salzgitter Mannesmann PreciS  
BP77 ZI VITRY MAROLLES  
Vitry-le-Francois  
(Vitry) FRANCE, 51303

Customer Order No: 4503903181

Scot Order No: 786478.02

|                                                                        |                                                     |                                            |
|------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|
| CAMERON MEASUREMENT SYSTEMS<br>5003-93RD STREET<br>EDMONTON AB T6E 5S9 | Material Supplier:<br>Part Number:<br>Scot Rec. No: | 99129.00<br>9A-C1609-024-04200<br>10124154 |
|------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|

|                         |                   |                                         |
|-------------------------|-------------------|-----------------------------------------|
| Heat Number: 9012973946 | Grade:            | Dimensions: 3.500" OD 2.900" ID X 25R30 |
| Scot Spec: MS-          | ASTM Spec: A106-B | Other Spec: MS00022-H                   |

Description: CDS NORMALIZED STEEL TUBING

| Chemical Analysis | C     | Mn    | P     | S     | Si    | Cu   | Ni    | Cr    | Mo    | V     | CE     |
|-------------------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|--------|
|                   | 0.159 | 0.763 | 0.013 | 0.004 | 0.201 | 0.13 | 0.084 | 0.165 | 0.053 | 0.002 | 0.3448 |
|                   |       |       |       |       |       |      |       |       |       |       |        |
|                   |       |       |       |       |       |      |       |       |       |       |        |

## Mechanical Test Results

| Yield Strength:(PSI) | Tensile Strength:(PSI) | Elongation:(%) in 2" G.L. | ROA:(%) | Hardness |
|----------------------|------------------------|---------------------------|---------|----------|
| 46952                | 70728                  | 37.51                     | ( )     |          |

## Charpy Impact Energy

| Energy ( ) |   | Shear Area (%) |   |     |
|------------|---|----------------|---|-----|
| Temp       | 1 | 2              | 3 | Avg |
|            |   |                |   |     |
|            |   |                |   |     |

The reported analysis and test results are certified to be the same as furnished to us by our supplier.  
All records and test reports covering the above materials are on file at Scot Industries and may be examined by your personnel or by any agent authorized by you.

|              |
|--------------|
| Eddy Current |
| OK           |

*Young Woo Lee*  
Quality Assurance

07/19/13