



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                               |                                                                                                                                                                     |                                    |                                                            |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6 | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         | <b>Mill Order No.</b> 41-491119-03 | <b>Shipping Manifest:</b> AR239887                         |
|                                                                                               | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                                    | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |
|                                                                                               | <b>Size:</b> 0.562 X 113.0 X 383.0 (IN)                                                                                                                             |                                    | <b>Cert No:</b> 081596750<br>(Page 1 of 1)                 |

| Tested Pieces: |             |                     |            | Tensiles:   |              |     |                    |            | Charpy Impact Tests |                                |  |  |  |                      |              |        |            |            |            | BDWTT<br>Tmp %Shr |  |
|----------------|-------------|---------------------|------------|-------------|--------------|-----|--------------------|------------|---------------------|--------------------------------|--|--|--|----------------------|--------------|--------|------------|------------|------------|-------------------|--|
| Heat<br>Id     | Piece<br>Id | Tested<br>Thickness | Tst<br>Loc | YS<br>(KSI) | UTS<br>(KSI) | %RA | Elong %<br>2in 8in | Tst<br>Dir | Hardness            | Abs. Energy(FTLB)<br>1 2 3 Avg |  |  |  | % Shear<br>1 2 3 Avg |              |        |            | Tst<br>Tmp | Tst<br>Dir |                   |  |
| E7B111         | B18         | 0.568 (DISCRT)      | C<br>C     | 52          | 73           |     | 26                 | T          |                     | 119 138 164 140<br>76 70 63 70 |  |  |  |                      | -45F<br>-45F | L<br>T | 10.<br>10. |            |            |                   |  |

| Chemical Analysis |     |     |      |       |     |        |        |     |     |     |     |      |      |      |       |       | ORGN |
|-------------------|-----|-----|------|-------|-----|--------|--------|-----|-----|-----|-----|------|------|------|-------|-------|------|
| Heat<br>Id        | C   | Mn  | P    | S     | Si  | Tot Al | Sol Al | Cu  | Ni  | Cr  | Mo  | Cb   | V    | Ti   | B     | N     |      |
| E7B111            | .18 | .92 | .010 | <.001 | .24 | .027   | .026   | .26 | .14 | .11 | .04 | .002 | .005 | .011 | .0002 | .0074 | USA  |

KILLED STEEL  
MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.

KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE  
MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
NORMALIZED PLATES. HEATED AT 1665F FOR 26 MINUTES.  
TEST COUPONS TAKEN FROM HEAT TREATED PLATE.

PRODUCTS SHIPPED:

|            |         |       |         |      |            |         |       |         |      |
|------------|---------|-------|---------|------|------------|---------|-------|---------|------|
| E7B111 B18 | 6704697 | PCES: | 1, LBS: | 6898 | E7B111 B18 | 6704700 | PCES: | 1, LBS: | 6898 |
| E7B111 B18 | 6704701 | PCES: | 1, LBS: | 6898 | E7B111 B18 | 6704698 | PCES: | 1, LBS: | 6898 |
| E7B111 B18 | 6704703 | PCES: | 1, LBS: | 6898 | E7B111 B18 | 6704702 | PCES: | 1, LBS: | 6898 |
| E7B111 B18 | 6704699 | PCES: | 1, LBS: | 6898 |            |         |       |         |      |

WE HEREBY CERTIFY THAT THIS MATERIAL WAS  
TESTED IN ACCORDANCE WITH, AND MEETS THE  
REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION

Justin Ward +1 251 662 4400  
SENIOR METALLURGIST - PRODUCT

(P) Cust Part #:



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------|------------------|------------------------------------------------------------|------------------------|--------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|-----------------------------|--|--|--|--------------------------|----------------|--------------------------------------------------------------|-----------------------|------------|---------------|---------------|-----------|-----------|------------|-------------|-----------|----------|-----------|------------|----------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|--|--|--|--|--|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                | <b>Mill Order No.</b> 41-491119-03 |                  | <b>Shipping Manifest:</b> AR239890                         |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                |                                    |                  | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |                        | <b>Cert No:</b> 081596770<br>(Page 1 of 1) |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | <b>Size:</b> 0.562 X 113.0 X 383.0 (IN)                                                                                                                             |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                                                                                                                                                                     |                | <b>Tensiles:</b>                   |                  |                                                            |                        | <b>Charpy Impact Tests</b>                 |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Piece Id</b> | <b>Tested Thickness</b>                                                                                                                                             | <b>Tst Loc</b> | <b>YS (KSI)</b>                    | <b>UTS (KSI)</b> | <b>%RA</b>                                                 | <b>Elong % 2in 8in</b> | <b>Tst Dir</b>                             | <b>Hardness</b> | <b>Abs. Energy(FTLB)</b><br>1 2 3 Avg                                                                                            |  |  |  | <b>% Shear</b><br>1 2 3 Avg |  |  |  | <b>Tst Tmp</b>           | <b>Tst Dir</b> | <b>Tst Siz (mm)</b>                                          | <b>BDWTT Tmp %Shr</b> |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | B16             | 0.568 (DISCRT)                                                                                                                                                      | C              | 50                                 | 72               |                                                            | 27                     | T                                          |                 | 135 123 122 127<br>112 84 96 97                                                                                                  |  |  |  |                             |  |  |  | -45F                     | L              | 10.                                                          |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                                                                                                                                                     | C              |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  | -45F                     | T              | 10.                                                          |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  | <b>Chemical Analysis</b> |                |                                                              |                       |            |               |               |           |           |            | <b>ORGN</b> |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  | <b>C</b>                 | <b>Mn</b>      | <b>P</b>                                                     | <b>S</b>              | <b>Si</b>  | <b>Tot Al</b> | <b>Sol Al</b> | <b>Cu</b> | <b>Ni</b> | <b>Cr</b>  | <b>Mo</b>   | <b>Cb</b> | <b>V</b> | <b>Ti</b> | <b>B</b>   | <b>N</b> |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  | .18                      | .92            | .010                                                         | <.001                 | .24        | .027          | .026          | .26       | .14       | .11        | .04         | .002      | .005     | .011      | .0002      | .0074    | USA   |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 26 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:</p> <table><tr><td>E7B111 B16</td><td>6704871</td><td>PCES:</td><td>1, LBS:</td><td>6898</td><td>E7B111 B16</td><td>6704870</td><td>PCES:</td><td>1, LBS:</td><td>6898</td></tr><tr><td>E7B111 B16</td><td>6704869</td><td>PCES:</td><td>1, LBS:</td><td>6898</td><td>E7B111 B16</td><td>6704868</td><td>PCES:</td><td>1, LBS:</td><td>6898</td></tr><tr><td>E7B111 B16</td><td>6704875</td><td>PCES:</td><td>1, LBS:</td><td>6898</td><td>E7B111 B16</td><td>6704874</td><td>PCES:</td><td>1, LBS:</td><td>6898</td></tr><tr><td>E7B111 B16</td><td>6704873</td><td>PCES:</td><td>1, LBS:</td><td>6898</td><td></td><td></td><td></td><td></td><td></td></tr></table> |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       | E7B111 B16 | 6704871       | PCES:         | 1, LBS:   | 6898      | E7B111 B16 | 6704870     | PCES:     | 1, LBS:  | 6898      | E7B111 B16 | 6704869  | PCES: | 1, LBS: | 6898 | E7B111 B16 | 6704868 | PCES: | 1, LBS: | 6898 | E7B111 B16 | 6704875 | PCES: | 1, LBS: | 6898 | E7B111 B16 | 6704874 | PCES: | 1, LBS: | 6898 | E7B111 B16 | 6704873 | PCES: | 1, LBS: | 6898 |  |  |  |  |  |
| E7B111 B16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6704871         | PCES:                                                                                                                                                               | 1, LBS:        | 6898                               | E7B111 B16       | 6704870                                                    | PCES:                  | 1, LBS:                                    | 6898            |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6704869         | PCES:                                                                                                                                                               | 1, LBS:        | 6898                               | E7B111 B16       | 6704868                                                    | PCES:                  | 1, LBS:                                    | 6898            |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6704875         | PCES:                                                                                                                                                               | 1, LBS:        | 6898                               | E7B111 B16       | 6704874                                                    | PCES:                  | 1, LBS:                                    | 6898            |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6704873         | PCES:                                                                                                                                                               | 1, LBS:        | 6898                               |                  |                                                            |                        |                                            |                 |                                                                                                                                  |  |  |  |                             |  |  |  |                          |                |                                                              |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                                                                                                                                                                     |                |                                    |                  |                                                            |                        |                                            |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |  |  |  |                             |  |  |  |                          |                | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |                       |            |               |               |           |           |            |             |           |          |           |            |          |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |



# Test Certificate

12400 Highway 43 North, Axis, Alabama 36505, US

Form TC1: Revision 2: Date 23 Apr 2014

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|----------------------------|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------|-----------|------------------------------|--------------|--------------------------------------------|------------|----------------|----------------|---------------------|--------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                            |                 |                         |                | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                  |            |                            | <b>Mill Order No.</b> 41-491119-04 |                 |                                                                                                                                        |           | <b>Shipping Manifest:</b> AR239891                         |           |                              |              |                                            |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                  |            |                            |                                    |                 |                                                                                                                                        |           | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |           |                              |              | <b>Cert No:</b> 081596773<br>(Page 1 of 1) |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                | <b>Size:</b> 0.437 X 113.0 X 383.0 (IN)                                                                                                                             |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         |                | <b>Tensiles:</b>                                                                                                                                                    |                  |            |                            | <b>Charpy Impact Tests</b>         |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Piece Id</b> | <b>Tested Thickness</b> | <b>Tst Loc</b> | <b>YS (KSI)</b>                                                                                                                                                     | <b>UTS (KSI)</b> | <b>%RA</b> | <b>Elong %<br/>2in 8in</b> | <b>Tst Dir</b>                     | <b>Hardness</b> | <b>Abs. Energy(FTLB)<br/>1 2 3 Avg</b>                                                                                                 |           |                                                            |           | <b>% Shear<br/>1 2 3 Avg</b> |              |                                            |            | <b>Tst Tmp</b> | <b>Tst Dir</b> | <b>Tst Siz (mm)</b> | <b>BDWTT<br/>Tmp %Shr</b>                                    |  |  |  |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | B17             | 0.442 (DISCRT)          | C 54<br>C      | 75                                                                                                                                                                  |                  |            | 27                         | T                                  |                 | 125 118 101 115<br>113 74 83 90                                                                                                        |           |                                                            |           |                              | -45F<br>-45F | L<br>T                                     | 10.<br>10. |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         |                | <b>Chemical Analysis</b>                                                                                                                                            |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                | <b>ORGN</b>         |                                                              |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                | <b>C</b>                                                                                                                                                            | <b>Mn</b>        | <b>P</b>   | <b>S</b>                   | <b>Si</b>                          | <b>Tot Al</b>   | <b>Sol Al</b>                                                                                                                          | <b>Cu</b> | <b>Ni</b>                                                  | <b>Cr</b> | <b>Mo</b>                    | <b>Cb</b>    | <b>V</b>                                   | <b>Ti</b>  | <b>B</b>       | <b>N</b>       |                     |                                                              |  |  |  |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                         |                | .18                                                                                                                                                                 | .92              | .010       | <.001                      | .24                                | .027            | .026                                                                                                                                   | .26       | .14                                                        | .11       | .04                          | .002         | .005                                       | .011       | .0002          | .0074          | USA                 |                                                              |  |  |  |  |  |  |  |  |  |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 21 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:<br/>E7B111 B17 6704662 PCES: 1, LBS: 5364 E7B111 B17 6704661 PCES: 1, LBS: 5364</p> |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                                                              |  |  |  |  |  |  |  |  |  |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS<br>TESTED IN ACCORDANCE WITH, AND MEETS THE<br>REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |           |                                                            |           |                              |              |                                            |            |                |                |                     | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |  |  |  |  |  |  |  |  |  |



# Test Certificate

12400 Highway 43 North, Axis, Alabama 36505, US

Form TC1: Revision 2: Date 23 Apr 2014

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         |                |                                                                                                                                                                     |                  |            |                        |                                    |                 |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|------------------------|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------|-----------|-----------------------------|-----------|--------------------------------------------|----------|----------------|----------------|--------------------------------------------------------------|--------------------------|---------|-------|---------|------|------------|---------|-------|---------|------|-------------|---------|-------|---------|------|------------|---------|-------|---------|------|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                  |            |                        | <b>Mill Order No.</b> 41-491119-04 |                 |                                                                                                                                  |           | <b>Shipping Manifest:</b> AR239890                         |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         |                | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                  |            |                        |                                    |                 |                                                                                                                                  |           | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |           |                             |           | <b>Cert No:</b> 081596771<br>(Page 1 of 1) |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         |                | <b>Size:</b> 0.437 X 113.0 X 383.0 (IN)                                                                                                                             |                  |            |                        |                                    |                 |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                         |                | <b>Tensiles:</b>                                                                                                                                                    |                  |            |                        | <b>Hardness</b>                    |                 |                                                                                                                                  |           | <b>Charpy Impact Tests</b>                                 |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Piece Id</b> | <b>Tested Thickness</b> | <b>Tst Loc</b> | <b>YS (KSI)</b>                                                                                                                                                     | <b>UTS (KSI)</b> | <b>%RA</b> | <b>Elong % 2in 8in</b> | <b>Tst Dir</b>                     | <b>Hardness</b> | <b>Abs. Energy(FTLB)</b><br>1 2 3 Avg                                                                                            |           |                                                            |           | <b>% Shear</b><br>1 2 3 Avg |           |                                            |          | <b>Tst Tmp</b> | <b>Tst Dir</b> | <b>Tst Siz (mm)</b>                                          | <b>BDWTT Tmp %Shr</b>    |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | B17             | 0.442 (DISCRT)          | C              | 54                                                                                                                                                                  | 75               |            | 27                     | T                                  |                 | 125                                                                                                                              | 118       | 101                                                        | 115       |                             |           |                                            |          | -45F           | L              | 10.                                                          |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         | C              |                                                                                                                                                                     |                  |            |                        |                                    |                 | 113                                                                                                                              | 74        | 83                                                         | 90        |                             |           |                                            |          | -45F           | T              | 10.                                                          |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | B12             | 0.443 (DISCRT)          | C              | 53                                                                                                                                                                  | 75               |            | 24                     | T                                  |                 | 124                                                                                                                              | 120       | 125                                                        | 123       |                             |           |                                            |          | -50F           | L              | 10.                                                          |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                         | C              |                                                                                                                                                                     |                  |            |                        |                                    |                 | 75                                                                                                                               | 53        | 80                                                         | 69        |                             |           |                                            |          | -50F           | T              | 10.                                                          |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         |                |                                                                                                                                                                     |                  |            |                        |                                    |                 |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              | <b>Chemical Analysis</b> |         |       |         |      |            |         |       |         |      | <b>ORGN</b> |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | <b>C</b>                | <b>Mn</b>      | <b>P</b>                                                                                                                                                            | <b>S</b>         | <b>Si</b>  | <b>Tot Al</b>          | <b>Sol Al</b>                      | <b>Cu</b>       | <b>Ni</b>                                                                                                                        | <b>Cr</b> | <b>Mo</b>                                                  | <b>Cb</b> | <b>V</b>                    | <b>Ti</b> | <b>B</b>                                   | <b>N</b> |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | .18                     | .92            | .010                                                                                                                                                                | <.001            | .24        | .027                   | .026                               | .26             | .14                                                                                                                              | .11       | .04                                                        | .002      | .005                        | .011      | .0002                                      | .0074    |                |                |                                                              | USA                      |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | .18                     | .92            | .008                                                                                                                                                                | .001             | .24        | .027                   | .026                               | .26             | .18                                                                                                                              | .10       | .05                                                        | .001      | .005                        | .011      | .0002                                      | .0079    |                |                |                                                              | USA                      |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 21 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:</p> <table><tr><td>W7B608 B12</td><td>6704651</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>W7B608 B12</td><td>6704650</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111 B17</td><td>6704653</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B17</td><td>6704665</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr></table> |                 |                         |                |                                                                                                                                                                     |                  |            |                        |                                    |                 |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              | W7B608 B12               | 6704651 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704650 | PCES: | 1, LBS: | 5364 | E7B111 B17  | 6704653 | PCES: | 1, LBS: | 5364 | E7B111 B17 | 6704665 | PCES: | 1, LBS: | 5364 |
| W7B608 B12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6704651         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | W7B608 B12       | 6704650    | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| E7B111 B17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6704653         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B17       | 6704665    | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                                            |           |                             |           |                                            |          |                |                |                                                              |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                         |                |                                                                                                                                                                     |                  |            |                        |                                    |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |           |                                                            |           |                             |           |                                            |          |                |                | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |                          |         |       |         |      |            |         |       |         |      |             |         |       |         |      |            |         |       |         |      |



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|----------------------------|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------|-----------|------------------------------|--------------|--------------------------------------------|------------|----------------|----------------|---------------------|---------------------------|--------------------------------------------------------------|-----|---------|-------|---------|------|--------|-----|---------|-------|---------|------|--------|-----|---------|-------|---------|------|--------|-----|---------|-------|---------|------|--------|-----|---------|-------|---------|------|--|--|--|--|--|--|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         |                | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                  |            |                            | <b>Mill Order No.</b> 41-491119-04 |                 |                                                                                                                                        |           | <b>Shipping Manifest:</b> AR239886                         |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                  |            |                            |                                    |                 |                                                                                                                                        |           | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |           |                              |              | <b>Cert No:</b> 081596743<br>(Page 1 of 1) |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                | <b>Size:</b> 0.437 X 113.0 X 383.0 (IN)                                                                                                                             |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                         |                | <b>Tensiles:</b>                                                                                                                                                    |                  |            |                            |                                    |                 |                                                                                                                                        |           | <b>Charpy Impact Tests</b>                                 |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Piece Id</b> | <b>Tested Thickness</b> | <b>Tst Loc</b> | <b>YS (KSI)</b>                                                                                                                                                     | <b>UTS (KSI)</b> | <b>%RA</b> | <b>Elong %<br/>2in 8in</b> | <b>Tst Dir</b>                     | <b>Hardness</b> | <b>Abs. Energy(FTLB)<br/>1 2 3 Avg</b>                                                                                                 |           |                                                            |           | <b>% Shear<br/>1 2 3 Avg</b> |              |                                            |            | <b>Tst Tmp</b> | <b>Tst Dir</b> | <b>Tst Siz (mm)</b> | <b>BDWTT<br/>Tmp %Shr</b> |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B17             | 0.442 (DISCRT)          | C<br>C         | 54<br>75                                                                                                                                                            |                  |            | 27                         | T                                  |                 | 125 118 101 115<br>113 74 83 90                                                                                                        |           |                                                            |           |                              | -45F<br>-45F | L<br>T                                     | 10.<br>10. |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                | <b>Chemical Analysis</b>                                                                                                                                            |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                | <b>ORGN</b>         |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                         |                | <b>C</b>                                                                                                                                                            | <b>Mn</b>        | <b>P</b>   | <b>S</b>                   | <b>Si</b>                          | <b>Tot Al</b>   | <b>Sol Al</b>                                                                                                                          | <b>Cu</b> | <b>Ni</b>                                                  | <b>Cr</b> | <b>Mo</b>                    | <b>Cb</b>    | <b>V</b>                                   | <b>Ti</b>  | <b>B</b>       | <b>N</b>       |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                         |                | .18                                                                                                                                                                 | .92              | .010       | <.001                      | .24                                | .027            | .026                                                                                                                                   | .26       | .14                                                        | .11       | .04                          | .002         | .005                                       | .011       | .0002          | .0074          | USA                 |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 21 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:</p> <table><tr><td>E7B111</td><td>B17</td><td>6704664</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111</td><td>B17</td><td>6704666</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111</td><td>B17</td><td>6704654</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111</td><td>B17</td><td>6704663</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111</td><td>B17</td><td>6704655</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                           | E7B111                                                       | B17 | 6704664 | PCES: | 1, LBS: | 5364 | E7B111 | B17 | 6704666 | PCES: | 1, LBS: | 5364 | E7B111 | B17 | 6704654 | PCES: | 1, LBS: | 5364 | E7B111 | B17 | 6704663 | PCES: | 1, LBS: | 5364 | E7B111 | B17 | 6704655 | PCES: | 1, LBS: | 5364 |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B17             | 6704664                 | PCES:          | 1, LBS:                                                                                                                                                             | 5364             | E7B111     | B17                        | 6704666                            | PCES:           | 1, LBS:                                                                                                                                | 5364      |                                                            |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B17             | 6704654                 | PCES:          | 1, LBS:                                                                                                                                                             | 5364             | E7B111     | B17                        | 6704663                            | PCES:           | 1, LBS:                                                                                                                                | 5364      |                                                            |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B17             | 6704655                 | PCES:          | 1, LBS:                                                                                                                                                             | 5364             |            |                            |                                    |                 |                                                                                                                                        |           |                                                            |           |                              |              |                                            |            |                |                |                     |                           |                                                              |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                         |                |                                                                                                                                                                     |                  |            |                            |                                    |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS<br>TESTED IN ACCORDANCE WITH, AND MEETS THE<br>REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |           |                                                            |           |                              |              |                                            |            |                |                |                     |                           | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |        |     |         |       |         |      |  |  |  |  |  |  |



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|------------------------|------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------|----------|-----------------------------|----------|--------------------------------------------|-------------|----------------|----------------|---------------------|-----------------------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|--|--|--|--|--|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                         |                | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                  |               |                        | <b>Mill Order No.</b> 41-491119-04 |                 |                                                                                                                                  |           | <b>Shipping Manifest:</b> AR239888      |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                  |               |                        |                                    |                 |                                                                                                                                  |           | <b>Ship Date:</b> 16 Feb 17             |          |                             |          | <b>Cert No:</b> 081596753<br>(Page 1 of 1) |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 |                                                                                                                                  |           | <b>Size:</b> 0.437 X 113.0 X 383.0 (IN) |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                         |                | <b>Tensiles:</b>                                                                                                                                                    |                  |               |                        | <b>Charpy Impact Tests</b>         |                 |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Piece Id</b> | <b>Tested Thickness</b> | <b>Tst Loc</b> | <b>YS (KSI)</b>                                                                                                                                                     | <b>UTS (KSI)</b> | <b>%RA</b>    | <b>Elong % 2in 8in</b> | <b>Tst Dir</b>                     | <b>Hardness</b> | <b>Abs. Energy(FTLB)</b><br>1 2 3 Avg                                                                                            |           |                                         |          | <b>% Shear</b><br>1 2 3 Avg |          |                                            |             | <b>Tst Tmp</b> | <b>Tst Dir</b> | <b>Tst Siz (mm)</b> | <b>BDWTT Tmp %Shr</b> |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | B13             | 0.442 (DISCRT)          | C              | 53                                                                                                                                                                  | 74               |               | 26                     | T                                  |                 | 123                                                                                                                              | 176       | 131                                     | 143      |                             |          |                                            |             | -50F           | L              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                    |                 | 117                                                                                                                              | 81        | 86                                      | 95       |                             |          |                                            |             | -50F           | T              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | B14             | 0.443 (DISCRT)          | C              | 53                                                                                                                                                                  | 74               |               | 27                     | T                                  |                 | 143                                                                                                                              | 155       | 114                                     | 137      |                             |          |                                            |             | -45F           | L              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                    |                 | 90                                                                                                                               | 102       | 80                                      | 91       |                             |          |                                            |             | -45F           | T              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | B12             | 0.443 (DISCRT)          | C              | 53                                                                                                                                                                  | 75               |               | 24                     | T                                  |                 | 124                                                                                                                              | 120       | 125                                     | 123      |                             |          |                                            |             | -50F           | L              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                    |                 | 75                                                                                                                               | 53        | 80                                      | 69       |                             |          |                                            |             | -50F           | T              | 10.                 |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Chemical Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>C</b>        | <b>Mn</b>               | <b>P</b>       | <b>S</b>                                                                                                                                                            | <b>Si</b>        | <b>Tot Al</b> | <b>Sol Al</b>          | <b>Cu</b>                          | <b>Ni</b>       | <b>Cr</b>                                                                                                                        | <b>Mo</b> | <b>Cb</b>                               | <b>V</b> | <b>Ti</b>                   | <b>B</b> | <b>N</b>                                   | <b>ORGN</b> |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | .18             | .92                     | .010           | <.001                                                                                                                                                               | .24              | .027          | .026                   | .26                                | .14             | .11                                                                                                                              | .04       | .002                                    | .005     | .011                        | .0002    | .0074                                      | USA         |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | .18             | .92                     | .008           | .001                                                                                                                                                                | .24              | .027          | .026                   | .26                                | .18             | .10                                                                                                                              | .05       | .001                                    | .005     | .011                        | .0002    | .0079                                      | USA         |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 21 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:</p> <table><tr><td>E7B111 B13</td><td>6704432</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B13</td><td>6704436</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111 B13</td><td>6704435</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B13</td><td>6704431</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111 B14</td><td>6704426</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B13</td><td>6704434</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111 B13</td><td>6704430</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B13</td><td>6704429</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>W7B608 B12</td><td>6704433</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>E7B111 B13</td><td>6704441</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>E7B111 B13</td><td>6704440</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>W7B608 B12</td><td>6704438</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>W7B608 B12</td><td>6704437</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>W7B608 B12</td><td>6704443</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>W7B608 B12</td><td>6704439</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td>W7B608 B12</td><td>6704444</td><td>PCES:</td><td>1, LBS:</td><td>5364</td></tr><tr><td>W7B608 B12</td><td>6704445</td><td>PCES:</td><td>1, LBS:</td><td>5364</td><td></td><td></td><td></td><td></td><td></td></tr></table> |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                | E7B111 B13          | 6704432               | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704436 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704435 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704431 | PCES: | 1, LBS: | 5364 | E7B111 B14 | 6704426 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704434 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704430 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704429 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704433 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704441 | PCES: | 1, LBS: | 5364 | E7B111 B13 | 6704440 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704438 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704437 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704443 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704439 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704444 | PCES: | 1, LBS: | 5364 | W7B608 B12 | 6704445 | PCES: | 1, LBS: | 5364 |  |  |  |  |  |
| E7B111 B13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704432         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B13       | 6704436       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704435         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B13       | 6704431       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704426         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B13       | 6704434       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704430         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B13       | 6704429       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608 B12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704433         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | E7B111 B13       | 6704441       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| E7B111 B13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704440         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | W7B608 B12       | 6704438       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608 B12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704437         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | W7B608 B12       | 6704443       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608 B12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704439         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                | W7B608 B12       | 6704444       | PCES:                  | 1, LBS:                            | 5364            |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| W7B608 B12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6704445         | PCES:                   | 1, LBS:        | 5364                                                                                                                                                                |                  |               |                        |                                    |                 |                                                                                                                                  |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                    |                 | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT                                                                     |           |                                         |          |                             |          |                                            |             |                |                |                     |                       |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |  |  |  |  |  |



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------|--------------------------------------------|----------------|---------------------|-----------------------|----------|-------------|--------------------------------------------------------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|------------|---------|-------|---------|------|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                         |                | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                  |               |                        | <b>Mill Order No.</b> 41-491119-05                         |                                                                                                                                  |                                    |                          | <b>Shipping Manifest:</b> AR239890         |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         |                | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                  |               |                        | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |                                                                                                                                  |                                    |                          | <b>Cert No:</b> 081596772<br>(Page 1 of 1) |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         |                | <b>Size:</b> 0.375 X 113.0 X 383.0 (IN)                                                                                                                             |                  |               |                        |                                                            |                                                                                                                                  |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         |                | <b>Tensiles:</b>                                                                                                                                                    |                  |               |                        | <b>Charpy Impact Tests</b>                                 |                                                                                                                                  |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Piece Id</b> | <b>Tested Thickness</b> | <b>Tst Loc</b> | <b>YS (KSI)</b>                                                                                                                                                     | <b>UTS (KSI)</b> | <b>%RA</b>    | <b>Elong % 2in 8in</b> | <b>Tst Dir</b>                                             | <b>Hardness</b>                                                                                                                  | <b>Abs. Energy(FTLB) 1 2 3 Avg</b> | <b>% Shear 1 2 3 Avg</b> | <b>Tst Tmp</b>                             | <b>Tst Dir</b> | <b>Tst Siz (mm)</b> | <b>BDWTT Tmp %Shr</b> |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | B08             | 0.381 (DISCRT)          | C 53           | 74                                                                                                                                                                  |                  |               | 26                     | T                                                          |                                                                                                                                  | 100 122 119 114                    |                          | -45F                                       | L              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  | 40 57 79 59                        |                          | -45F                                       | T              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | B09             | 0.381 (DISCRT)          | C 52           | 73                                                                                                                                                                  |                  |               | 26                     | T                                                          |                                                                                                                                  | 97 83 96 92                        |                          | -45F                                       | L              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  | 50 58 48 52                        |                          | -45F                                       | T              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | B10             | 0.380 (DISCRT)          | C 52           | 74                                                                                                                                                                  |                  |               | 23                     | T                                                          |                                                                                                                                  | 120 92 86 99                       |                          | -45F                                       | L              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         | C              |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  | 53 51 57 54                        |                          | -45F                                       | T              | 7.5                 |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| <b>Chemical Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>C</b>        | <b>Mn</b>               | <b>P</b>       | <b>S</b>                                                                                                                                                            | <b>Si</b>        | <b>Tot Al</b> | <b>Sol Al</b>          | <b>Cu</b>                                                  | <b>Ni</b>                                                                                                                        | <b>Cr</b>                          | <b>Mo</b>                | <b>Cb</b>                                  | <b>V</b>       | <b>Ti</b>           | <b>B</b>              | <b>N</b> | <b>ORGN</b> |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | .18             | .92                     | .008           | .001                                                                                                                                                                | .24              | .027          | .026                   | .26                                                        | .18                                                                                                                              | .10                                | .05                      | .001                                       | .005           | .011                | .0002                 | .0079    | USA         |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>CHARPY FULL SIZE EQUIVALENT = ABSORBED ENERGY AVG X 10 / TEST SIZE IN MM<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 19 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:</p> <table><tr><td>W7B608 B10</td><td>6704852</td><td>PCES:</td><td>1, LBS:</td><td>4603</td><td>W7B608 B10</td><td>6704859</td><td>PCES:</td><td>1, LBS:</td><td>4603</td></tr><tr><td>W7B608 B10</td><td>6704851</td><td>PCES:</td><td>1, LBS:</td><td>4603</td><td>W7B608 B09</td><td>6704845</td><td>PCES:</td><td>1, LBS:</td><td>4603</td></tr><tr><td>W7B608 B10</td><td>6704860</td><td>PCES:</td><td>1, LBS:</td><td>4603</td><td>W7B608 B10</td><td>6704861</td><td>PCES:</td><td>1, LBS:</td><td>4603</td></tr><tr><td>W7B608 B10</td><td>6704862</td><td>PCES:</td><td>1, LBS:</td><td>4603</td><td>W7B608 B08</td><td>6704572</td><td>PCES:</td><td>1, LBS:</td><td>4603</td></tr></table> |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                                            |                                                                                                                                  |                                    |                          |                                            |                |                     |                       |          |             | W7B608 B10                                                   | 6704852 | PCES: | 1, LBS: | 4603 | W7B608 B10 | 6704859 | PCES: | 1, LBS: | 4603 | W7B608 B10 | 6704851 | PCES: | 1, LBS: | 4603 | W7B608 B09 | 6704845 | PCES: | 1, LBS: | 4603 | W7B608 B10 | 6704860 | PCES: | 1, LBS: | 4603 | W7B608 B10 | 6704861 | PCES: | 1, LBS: | 4603 | W7B608 B10 | 6704862 | PCES: | 1, LBS: | 4603 | W7B608 B08 | 6704572 | PCES: | 1, LBS: | 4603 |
| W7B608 B10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6704852         | PCES:                   | 1, LBS:        | 4603                                                                                                                                                                | W7B608 B10       | 6704859       | PCES:                  | 1, LBS:                                                    | 4603                                                                                                                             |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608 B10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6704851         | PCES:                   | 1, LBS:        | 4603                                                                                                                                                                | W7B608 B09       | 6704845       | PCES:                  | 1, LBS:                                                    | 4603                                                                                                                             |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608 B10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6704860         | PCES:                   | 1, LBS:        | 4603                                                                                                                                                                | W7B608 B10       | 6704861       | PCES:                  | 1, LBS:                                                    | 4603                                                                                                                             |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| W7B608 B10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6704862         | PCES:                   | 1, LBS:        | 4603                                                                                                                                                                | W7B608 B08       | 6704572       | PCES:                  | 1, LBS:                                                    | 4603                                                                                                                             |                                    |                          |                                            |                |                     |                       |          |             |                                                              |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                |                                                                                                                                                                     |                  |               |                        |                                                            | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |                                    |                          |                                            |                |                     |                       |          |             | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |            |         |       |         |      |



# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

|                                                                                               |                                                                                                                                                                     |                                    |                                                            |                                            |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------|--------------------------------------------|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6 | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         | <b>Mill Order No.</b> 41-491119-05 | <b>Shipping Manifest:</b> AR239891                         |                                            |
|                                                                                               | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                                    | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 | <b>Cert No:</b> 081596774<br>(Page 1 of 1) |
|                                                                                               | <b>Size:</b> 0.375 X 113.0 X 383.0 (IN)                                                                                                                             |                                    |                                                            |                                            |

| Tested Pieces: |          |                  |         | Tensiles: |           |     |                    |         |          | Charpy Impact Tests            |    |     |    |                      |  |  |  |         |         |              |                   |  |
|----------------|----------|------------------|---------|-----------|-----------|-----|--------------------|---------|----------|--------------------------------|----|-----|----|----------------------|--|--|--|---------|---------|--------------|-------------------|--|
| Heat Id        | Piece Id | Tested Thickness | Tst Loc | YS (KSI)  | UTS (KSI) | %RA | Elong %<br>2in 8in | Tst Dir | Hardness | Abs. Energy(FTLB)<br>1 2 3 Avg |    |     |    | % Shear<br>1 2 3 Avg |  |  |  | Tst Tmp | Tst Dir | Tst Siz (mm) | BDWTT<br>Tmp %Shr |  |
| W7B608         | B06      | 0.381 (DISCRT)   | C       | 53        | 75        |     | 27                 | T       |          | 77                             | 78 | 103 | 86 |                      |  |  |  | -50F    | L       | 7.5          |                   |  |
|                |          |                  | C       |           |           |     |                    |         |          | 46                             | 31 | 49  | 42 |                      |  |  |  | -50F    | T       | 7.5          |                   |  |
| W7B608         | B09      | 0.381 (DISCRT)   | C       | 52        | 73        |     | 26                 | T       |          | 97                             | 83 | 96  | 92 |                      |  |  |  | -45F    | L       | 7.5          |                   |  |
|                |          |                  | C       |           |           |     |                    |         |          | 50                             | 58 | 48  | 52 |                      |  |  |  | -45F    | T       | 7.5          |                   |  |

| Heat |   |    |   |   |    |        |        |    |    |    |    |    |   |    |   |   |  | Chemical Analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ORGN |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------|---|----|---|---|----|--------|--------|----|----|----|----|----|---|----|---|---|--|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Id   | C | Mn | P | S | Si | Tot Al | Sol Al | Cu | Ni | Cr | Mo | Cb | V | Ti | B | N |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

KILLED STEEL  
MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.  
KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE  
MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
CHARPY FULL SIZE EQUIVALENT = ABSORBED ENERGY AVG X 10 / TEST SIZE IN MM  
NORMALIZED PLATES. HEATED AT 1665F FOR 19 MINUTES.  
TEST COUPONS TAKEN FROM HEAT TREATED PLATE.  
PRODUCTS SHIPPED:  
W7B608 B06 6704482 PCES: 1, LBS: 4603 W7B608 B09 6704584 PCES: 1, LBS: 4603

|     |              |                                                                                                                                  |                                                              |
|-----|--------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| (P) | Cust Part #: | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |
|-----|--------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|



# Test Certificate

12400 Highway 43 North, Axis, Alabama 36505, US

Form TC1: Revision 2: Date 23 Apr 2014

|                                                                                               |                                                                                                                                                                     |                                    |                                                            |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6 | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         | <b>Mill Order No.</b> 41-491119-05 | <b>Shipping Manifest:</b> AR239886                         |
|                                                                                               | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                                    | <b>Ship Date:</b> 16 Feb 17<br><b>Cert Date:</b> 16 Feb 17 |
|                                                                                               | <b>Size:</b> 0.375 X 113.0 X 383.0 (IN)                                                                                                                             |                                    | <b>Cert No:</b> 081596744<br>(Page 1 of 1)                 |

| Tested Pieces: |             |                     |            | Tensiles:   |              |     |                    |            | Charpy Impact Tests |                                |     |     |     |                      |  |  |  |            |            | BDWTT<br>Tmp %Shr |     |
|----------------|-------------|---------------------|------------|-------------|--------------|-----|--------------------|------------|---------------------|--------------------------------|-----|-----|-----|----------------------|--|--|--|------------|------------|-------------------|-----|
| Heat<br>Id     | Piece<br>Id | Tested<br>Thickness | Tst<br>Loc | YS<br>(KSI) | UTS<br>(KSI) | %RA | Elong %<br>2in 8in | Tst<br>Dir | Hardness            | Abs. Energy(FTLB)<br>1 2 3 Avg |     |     |     | % Shear<br>1 2 3 Avg |  |  |  | Tst<br>Tmp | Tst<br>Dir |                   |     |
| W7B608         | B08         | 0.381 (DISCRT)      | C          | 53          | 74           |     | 26                 | T          |                     | 100                            | 122 | 119 | 114 |                      |  |  |  | -45F       | L          | 7.5               |     |
|                |             |                     | C          |             |              |     |                    |            |                     |                                | 40  | 57  | 79  | 59                   |  |  |  |            | -45F       | T                 | 7.5 |

| Heat   |  | Chemical Analysis |     |      |      |     |        |        |     |     |     |     |      |      |      |       |       | ORGN |
|--------|--|-------------------|-----|------|------|-----|--------|--------|-----|-----|-----|-----|------|------|------|-------|-------|------|
| Id     |  | C                 | Mn  | P    | S    | Si  | Tot Al | Sol Al | Cu  | Ni  | Cr  | Mo  | Cb   | V    | Ti   | B     | N     |      |
| W7B608 |  | .18               | .92 | .008 | .001 | .24 | .027   | .026   | .26 | .18 | .10 | .05 | .001 | .005 | .011 | .0002 | .0079 | USA  |

KILLED STEEL  
MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.  
KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE  
MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
CHARPY FULL SIZE EQUIVALENT = ABSORBED ENERGY AVG X 10 / TEST SIZE IN MM  
NORMALIZED PLATES. HEATED AT 1665F FOR 19 MINUTES.  
TEST COUPONS TAKEN FROM HEAT TREATED PLATE.  
PRODUCTS SHIPPED:  
W7B608 B08 6704573 PCES: 1, LBS: 4603

(P) Cust Part #:

WE HEREBY CERTIFY THAT THIS MATERIAL WAS  
TESTED IN ACCORDANCE WITH, AND MEETS THE  
REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION

Justin Ward +1 251 662 4400  
SENIOR METALLURGIST - PRODUCT

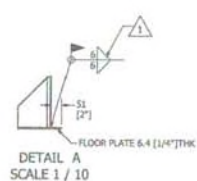
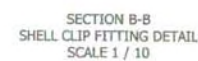
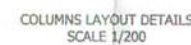
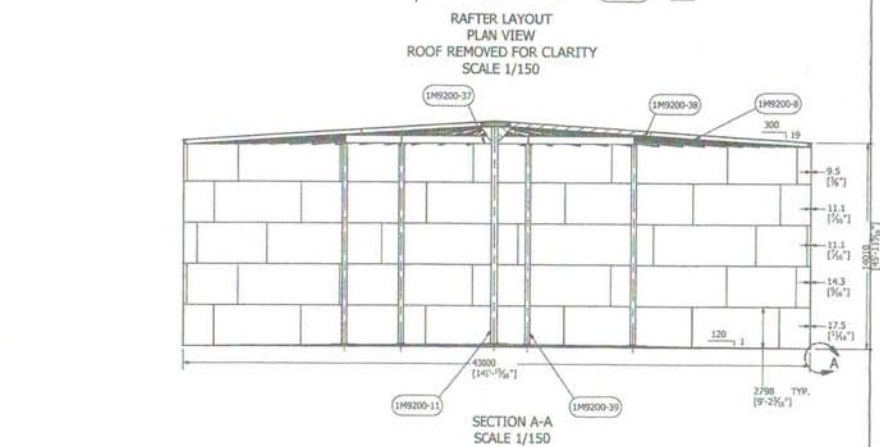


# Test Certificate

Form TC1: Revision 2: Date 23 Apr 2014

12400 Highway 43 North, Axis, Alabama 36505, US

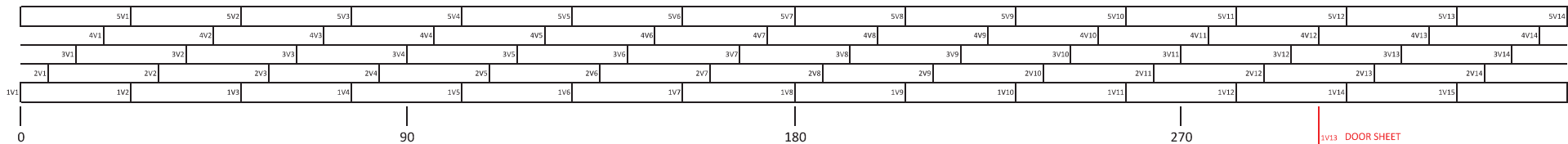
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                                                                                     |                |                                    |                  |                                            |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------|------------------|--------------------------------------------|----------------------------|----------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|----------|------------------------------|----------|----------|-------------|-----------------|----------------|--------------------------------------------------------------|---------------------------|--|--|--|--|--|--|--|--|
| <b>Customer:</b><br>SAMUEL, SON & CO. LTD<br>1250 APPLEBY LINE<br><br>BURLINGTON<br>ON L7L5G6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 | <b>Customer P.O.No.:</b> C41966 & 41-490196                                                                                                                         |                | <b>Mill Order No.</b> 41-491119-05 |                  | <b>Shipping Manifest:</b> AR239888         |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | <b>Product Description:</b> CSA G40.21(2013) 38WT/260WT - CAT<br>5;LCVN 15FT.LBS,TCVN13FT.LBS@-45F/A673-P<br>ALLOYS API650(12TH ED) TABLE 4-1 GR.IIIA<br>NORMALIZED |                | <b>Ship Date:</b> 16 Feb 17        |                  | <b>Cert No:</b> 081596754<br>(Page 1 of 1) |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                                                                                     |                | <b>Cert Date:</b> 16 Feb 17        |                  |                                            |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | <b>Size:</b> 0.375 X 113.0 X 383.0 (IN)                                                                                                                             |                |                                    |                  |                                            |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| <b>Tested Pieces:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                     |                | <b>Tensiles:</b>                   |                  |                                            |                            | <b>Charpy Impact Tests</b> |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Piece Id</b> | <b>Tested Thickness</b>                                                                                                                                             | <b>Tst Loc</b> | <b>YS (KSI)</b>                    | <b>UTS (KSI)</b> | <b>%RA</b>                                 | <b>Elong %<br/>2in 8in</b> | <b>Tst Dir</b>             | <b>Hardness</b> | <b>Abs. Energy(FTLB)<br/>1 2 3 Avg</b>                                                                                           |           |           |          | <b>% Shear<br/>1 2 3 Avg</b> |          |          |             | <b>Tst Temp</b> | <b>Tst Dir</b> | <b>Tst Siz (mm)</b>                                          | <b>BDWTT<br/>Tmp %Shr</b> |  |  |  |  |  |  |  |  |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | B06             | 0.381 (DISCRT)                                                                                                                                                      | C              | 53                                 | 75               |                                            | 27                         | T                          |                 | 77                                                                                                                               | 78        | 103       | 86       |                              |          |          |             | -50F            | L              | 7.5                                                          |                           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                                                                                     | C              |                                    |                  |                                            |                            |                            |                 | 46                                                                                                                               | 31        | 49        | 42       |                              |          |          |             | -50F            | T              | 7.5                                                          |                           |  |  |  |  |  |  |  |  |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | B07             | 0.380 (DISCRT)                                                                                                                                                      | C              | 52                                 | 75               |                                            | 27                         | T                          |                 | 88                                                                                                                               | 103       | 87        | 93       |                              |          |          |             | -45F            | L              | 7.5                                                          |                           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                                                                                                                                                                     | C              |                                    |                  |                                            |                            |                            |                 | 54                                                                                                                               | 52        | 48        | 51       |                              |          |          |             | -45F            | T              | 7.5                                                          |                           |  |  |  |  |  |  |  |  |
| <b>Chemical Analysis</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                                                                                                                                                                     |                |                                    |                  |                                            |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| <b>Heat Id</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>C</b>        | <b>Mn</b>                                                                                                                                                           | <b>P</b>       | <b>S</b>                           | <b>Si</b>        | <b>Tot Al</b>                              | <b>Sol Al</b>              | <b>Cu</b>                  | <b>Ni</b>       | <b>Cr</b>                                                                                                                        | <b>Mo</b> | <b>Cb</b> | <b>V</b> | <b>Ti</b>                    | <b>B</b> | <b>N</b> | <b>ORGN</b> |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| W7B608                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .18             | .92                                                                                                                                                                 | .008           | .001                               | .24              | .027                                       | .026                       | .26                        | .18             | .10                                                                                                                              | .05       | .001      | .005     | .011                         | .0002    | .0079    | USA         |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| <p>KILLED STEEL<br/>MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.<br/>KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE<br/>MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT<br/>CHARPY FULL SIZE EQUIVALENT = ABSORBED ENERGY AVG X 10 / TEST SIZE IN MM<br/>NORMALIZED PLATES. HEATED AT 1665F FOR 19 MINUTES.<br/>TEST COUPONS TAKEN FROM HEAT TREATED PLATE.<br/>PRODUCTS SHIPPED:<br/>W7B608 B07 6704494 PCES: 1, LBS: 4603 W7B608 B07 6704493 PCES: 1, LBS: 4603<br/>W7B608 B06 6704483 PCES: 1, LBS: 4603</p> |                 |                                                                                                                                                                     |                |                                    |                  |                                            |                            |                            |                 |                                                                                                                                  |           |           |          |                              |          |          |             |                 |                |                                                              |                           |  |  |  |  |  |  |  |  |
| (P) Cust Part #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                                                                                                                                                     |                |                                    |                  |                                            |                            |                            |                 | WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION |           |           |          |                              |          |          |             |                 |                | Justin Ward +1 251 662 4400<br>SENIOR METALLURGIST - PRODUCT |                           |  |  |  |  |  |  |  |  |



| PARTS List |          |                                                       |                |
|------------|----------|-------------------------------------------------------|----------------|
| ITEM       | ITEM QTY | Description                                           | MATERIAL       |
| IMR2008-0  | 70       | OUTER RAFTER - SEE SHT. 2                             |                |
| IMR2009-10 | 70       | SHEIL CLIP - SEE SHT. 2                               | GA3 21M - 350W |
| IMR2009-11 | 1        | CENTRA COLUMN - SEE SHT. 3                            | GA3 21M - 350W |
| IMR2009-15 | 2        | TOP INTERMEDIATE GIRDER CONNECTION PLATE - SEE SHT. 2 |                |
| IMR2009-16 | 2        | INT-MEDIATE GIRDER ANCH ASST - SEE SHT. 3             | GA3 21M - 300W |
| IMR2009-30 | 399      | INNER RAFTER - SEE SHT. 3                             |                |
| IMR2009-39 | 2        | INTERMEDIATE COLUMN - SEE SHT. 3                      |                |
| IMR2009-40 | 2        | FRSOM (FRG XL) 4" - 1574 (35.2) LG                    | GA3 21M - 300W |
| IMR2009-41 | 4        | FRSOM (FRG XL) 4" - 1574 (35.2) LG                    | GA3 21M - 300W |

| ZONE                            |                                          | REV                                                  | REVISION HISTORY         | DATE |
|---------------------------------|------------------------------------------|------------------------------------------------------|--------------------------|------|
| G7, D6, H6, E2, B5              | 1                                        | RAFTER BRACE ADDED, WELDING DETAIL ADDED IN DETAIL A | 3/31/2017                |      |
| F7, H8, F11, D6, F1, G3, F9, D3 | 4                                        | REFERENCE ANGLES CHANGED                             | 4/24/2017                |      |
| OWNER: MARIC LOGGING COMPANY    |                                          | 3/17/2017                                            | RAFTER AND COLUMN LAYOUT |      |
| OK                              | TITLE                                    |                                                      |                          |      |
| REV                             | AGNICO EAGLE - MELIADINE GOLD MINE -     |                                                      |                          |      |
| APPROVED                        | TANK #1 - 20,000GAL TANK 43M DIA X 14M H |                                                      |                          |      |
|                                 | SIZE                                     | DWG NO                                               | REV A                    |      |
|                                 | A1                                       | 295-M9                                               | 6                        |      |
|                                 | SCALE                                    | SHEET 1 OF 7                                         |                          |      |

## Tank #1 Rankin Inlet (AEM)



## VERTS (Welder ID)

|           | IN | OUT |
|-----------|----|-----|
| 1V1       | DZ | DZ  |
| 1V2       | JH | JH  |
| 1V3       | DZ | DZ  |
| 1V4       | JH | JH  |
| 1V5       | JH | JH  |
| 1V6       | JN | JN  |
| 1V7       | JN | JN  |
| 1V8       | JN | JN  |
| 1V9       | KW | KW  |
| 1V10      | KW | KW  |
| 1V11      | KW | KW  |
| 1V12      | MT | MT  |
| 1V13 DOOR | LM | LM  |
| 1V14      | DZ | DZ  |
| 1V15      | DZ | DZ  |

|      | IN | OUT |
|------|----|-----|
| 2V1  | JN | JN  |
| 2V2  | JN | JN  |
| 2V3  | JN | JN  |
| 2V4  | JN | JN  |
| 2V5  | KW | JN  |
| 2V6  | KW | JN  |
| 2V7  | KW | JN  |
| 2V8  | KW | KW  |
| 2V9  | DZ | KW  |
| 2V10 | DZ | KW  |
| 2V11 | DZ | KW  |
| 2V12 | DZ | KW  |
| 2V13 | DZ | DZ  |
| 2V14 | DZ | DZ  |

|      | IN | OUT |
|------|----|-----|
| 3V1  | JN | JN  |
| 3V2  | JN | JN  |
| 3V3  | DZ | DZ  |
| 3V4  | DZ | DZ  |
| 3V5  | DZ | DZ  |
| 3V6  | JN | JN  |
| 3V7  | JN | JN  |
| 3V8  | JN | JN  |
| 3V9  | KW | KW  |
| 3V10 | KW | KW  |
| 3V11 | KW | KW  |
| 3V12 | DZ | DZ  |
| 3V13 | DZ | DZ  |
| 3V14 | DZ | DZ  |

|      | IN | OUT |
|------|----|-----|
| 4V1  | LM | LM  |
| 4V2  | LM | LM  |
| 4V3  | LM | JN  |
| 4V4  | JN | JN  |
| 4V5  | JN | JN  |
| 4V6  | JN | JN  |
| 4V7  | CJ | TM  |
| 4V8  | CJ | TM  |
| 4V9  | CJ | TM  |
| 4V10 | DZ | DZ  |
| 4V11 | DZ | DZ  |
| 4V12 | DZ | DZ  |
| 4V13 | DZ | DZ  |
| 4V14 | LM | LM  |

|      | IN | OUT |
|------|----|-----|
| 5V1  | LM | LM  |
| 5V2  | LM | LM  |
| 5V3  | LM | LM  |
| 5V4  | JN | JN  |
| 5V5  | JN | JN  |
| 5V6  | JN | JN  |
| 5V7  | CJ | JN  |
| 5V8  | CJ | TM  |
| 5V9  | CJ | DZ  |
| 5V10 | DZ | DZ  |
| 5V11 | DZ | DZ  |
| 5V12 | DZ | DZ  |
| 5V13 | DZ | DZ  |
| 5V14 | DZ | DZ  |

## HORIZONTAL (Welder ID)

|            | IN    | OUT   |
|------------|-------|-------|
| H1         | JO    | MG    |
| DOOR SHEET | LM/DZ | LM/DZ |

|    | IN | OUT |
|----|----|-----|
| H2 | JO | MG  |

|    | IN | OUT |
|----|----|-----|
| H3 | MM | CJ  |

|    | IN | OUT |
|----|----|-----|
| H4 | MM | CJ  |

## PLATES IDENTIFICATION (heat numbers)

|      | Heat Number |
|------|-------------|
| 1V1  | W7B609B20   |
| 1V2  | W7B609B20   |
| 1V3  | W7B609B19   |
| 1V4  | W7B609B19   |
| 1V5  | W7B609B20   |
| 1V6  | W7B609B20   |
| 1V7  | W7B609B20   |
| 1V8  | W7B609B20   |
| 1V9  | W7B609B20   |
| 1V10 | W7B609B19   |
| 1V11 | W7B609B19   |
| 1V12 | W7B609B19   |
| 1V13 | W7B609B19   |
| 1V14 | W7B609B19   |
| 1V15 | W7B609B19   |

|      | Heat Number |
|------|-------------|
| 2V1  | E7B111B16   |
| 2V2  | E7B111B16   |
| 2V3  | E7B111B18   |
| 2V4  | E7B111B18   |
| 2V5  | E7B111B18   |
| 2V6  | E7B111B16   |
| 2V7  | E7B111B16   |
| 2V8  | E7B111B16   |
| 2V9  | E7B111B18   |
| 2V10 | E7B111B18   |
| 2V11 | E7B111B18   |
| 2V12 | E7B111B18   |
| 2V13 | E7B111B16   |
| 2V14 | E7B111B16   |

|      | Heat Number |
|------|-------------|
| 3V1  | E7B111B17   |
| 3V2  | E7B111B14   |
| 3V3  | E7B111B13   |
| 3V4  | W7B608B12   |
| 3V5  | E7B111B17   |
| 3V6  | E7B111B17   |
| 3V7  | W7B608B12   |
| 3V8  | E7B111B13   |
| 3V9  | E7B111B17   |
| 3V10 | W7B608B12   |
| 3V11 | W7B608B12   |
| 3V12 | E7B111B17   |
| 3V13 | W7B608B12   |
| 3V14 | E7B111B13   |

|      | Heat Number |
|------|-------------|
| 4V1  | E7B111B13   |
| 4V2  | E7B111B17   |
| 4V3  | E7B111B13   |
| 4V4  | W7B608B12   |
| 4V5  | E7B111B17   |
| 4V6  | W7B608B12   |
| 4V7  | E7B111B13   |
| 4V8  | E7B111B13   |
| 4V9  | E7B111B13   |
| 4V10 | W7B608B12   |
| 4V11 | E7B111B17   |
| 4V12 | W7B608B12   |
| 4V13 | E7B111B13   |
| 4V14 | E7B111B17   |

|      | Heat Number |
|------|-------------|
| 5V1  | W7B608B06   |
| 5V2  | W7B608B10   |
| 5V3  | W7B608B08   |
| 5V4  | W7B608B10   |
| 5V5  | W7B608B09   |
| 5V6  | W7B608B07   |
| 5V7  | W7B608B10   |
| 5V8  | W7B608B06   |
| 5V9  | W7B608B10   |
| 5V10 | W7B608B08   |
| 5V11 | W7B608B10   |
| 5V12 | W7B608B07   |
| 5V13 | W7B608B09   |
| 5V14 | W7B608B10   |

QUALITY CONTROL MANUAL

Exhibit 18, Rev A

DIMENSIONAL CHECK REPORT – ROUNDNESS

Customer: A.E.M.

Location: RANKIN INLET TK-1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(The tank shell will be checked for roundness at 12" above the tank floor. Roundness will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 5/18

Tested by: MATT MACKENZIE

Seam Test Results:

ALL MEASUREMENTS ARE ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: June 5/18

Client Representative Signature: [Signature] Date: June 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Exhibit 15c, Rev 1

## QUALITY CONTROL MANUAL

## VISUAL TEST REPORT

Customer: Agnico Eagle

Location: Rankin Inlet

Code Requiring Test: API 650 (section 8.5.2)

Reason for Test: New Construction

A weld shall be acceptable by visual examination if the inspection shows the following.

- There are no crater cracks, other surface cracks or arc strikes in or adjacent to the welded joints.
- Maximum permissible undercut is 0.4 mm (1/64 in.) in depth for vertical butt joints, vertically oriented permanent attachments, attachment welds for nozzles, manholes, flush-type openings, and the inside shell-to-bottom welds. For horizontal butt joints, horizontally oriented permanent attachments, and annular-ring butt joints, the maximum permissible undercut is 0.8 mm (1/32 in.) in depth.
- The frequency of surface porosity in the weld does not exceed one cluster (one or more pores) in any 100 mm (4 in.) of length, and the diameter of each cluster does not exceed 2.5 mm (3/32 in.).
- The reinforcement of the welds on all thicknesses:

| Plate Thickness<br>mm (in.) | Maximum Reinforcement Thickness<br>mm (in.) |                   |
|-----------------------------|---------------------------------------------|-------------------|
|                             | Vertical Joints                             | Horizontal Joints |
| ≤ 13 (1/2)                  | 2.5 (3/32)                                  | 3 (1/8)           |
| > 13 (1/2) to 25 (1)        | 3 (1/8)                                     | 5 (3/16)          |
| > 25 (1)                    | 5 (3/16)                                    | 6 (3/4)           |

Surface Condition (As Welded)

Test Solution: N/A

Test Date(s): JUNE 12/18

Tested by: MATT MACKEDZIE

Ambient Conditions: 4°

Items Tested:

SRI VERTS

Results:

NO DEFECTS WERE FOUND ALL WELDING  
ACCEPTABLE.Sub-Arc Representative Signature: [Signature] Date: JUNE 12/18Client Representative Signature: [Signature] Date: JUNE 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 16, Rev A

### DIMENSIONAL CHECK REPORT – PEAKING

Customer: AGNICO EAGLE

Location: RANKIN INLET TK. 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each vertical seam will be checked for peaking and max. peak dimension recorded for that seam.)

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Seam Test Results:

SRI VERTS - ARE ALL ACCEPTABLE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: Clem Bonice Date: June 25/18

Client: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 15c, Rev 1

## VISUAL TEST REPORT

Customer: Agnico Eagle

Location: Rankin Inlet

Code Requiring Test: API 650 (section 8.5.2)

Reason for Test: New Construction

A weld shall be acceptable by visual examination if the inspection shows the following.

- There are no crater cracks, other surface cracks or arc strikes in or adjacent to the welded joints.
- Maximum permissible undercut is 0.4 mm (1/64 in.) in depth for vertical butt joints, vertically oriented permanent attachments, attachment welds for nozzles, manholes, flush-type openings, and the inside shell-to-bottom welds. For horizontal butt joints, horizontally oriented permanent attachments, and annular-ring butt joints, the maximum permissible undercut is 0.8 mm (1/32 in.) in depth.
- The frequency of surface porosity in the weld does not exceed one cluster (one or more pores) in any 100 mm (4 in.) of length, and the diameter of each cluster does not exceed 2.5 mm (3/32 in.).
- The reinforcement of the welds on all thicknesses:

| Plate Thickness<br>mm (in.) | Maximum Reinforcement Thickness<br>mm (in.) |                   |
|-----------------------------|---------------------------------------------|-------------------|
|                             | Vertical Joints                             | Horizontal Joints |
| ≤ 13 (1/2)                  | 2.5 (3/32)                                  | 3 (1/8)           |
| > 13 (1/2) to 25 (1)        | 3 (1/8)                                     | 5 (3/16)          |
| > 25 (1)                    | 5 (3/16)                                    | 6 (1/4)           |

Surface Condition (As Welded)

Test Solution: N/A

Test Date(s): June 12 / 18

Tested by: MATT MACKENZIE

Ambient Conditions: 4°

Items Tested:

SR2 VERTS. + HORIZONTAL 1

Results:

NO DEFECTS WERE FOUND. ALL WELDING ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: June 12/18Client Representative Signature: [Signature] Date: June 28/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 16, Rev A

### DIMENSIONAL CHECK REPORT – PEAKING

Customer: AGNICO EAGLE

Location: RANKIN INLET TK-1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each vertical seam will be checked for peaking and max. peak dimension recorded for that seam.)

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Seam Test Results:

SR2 VERTS ARE ALL ACCEPTABLE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: [Signature] Date: June 25/18

Client: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 17, Rev A

### DIMENSIONAL CHECK REPORT – BANDING

Customer: AGNICO EAGLE

Location: RANKIN INLET JK 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each circumferential seam will be checked for banding and max. banding dimension recorded for that seam. Circumferential seams will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 12/18

Tested by: NATH MACKENZIE

Seam Test Results:

HORIZONTAL 1 BANDING ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: [Signature] Date: June 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 15c, Rev 1

## VISUAL TEST REPORT

Customer: Agnico Eagle

Location: Rankin Inlet

Code Requiring Test: API 650 (section 8.5.2)

Reason for Test: New Construction

A weld shall be acceptable by visual examination if the inspection shows the following.

- There are no crater cracks, other surface cracks or arc strikes in or adjacent to the welded joints.
- Maximum permissible undercut is 0.4 mm (1/64 in.) in depth for vertical butt joints, vertically oriented permanent attachments, attachment welds for nozzles, manholes, flush-type openings, and the inside shell-to-bottom welds. For horizontal butt joints, horizontally oriented permanent attachments, and annular-ring butt joints, the maximum permissible undercut is 0.8 mm (1/32 in.) in depth.
- The frequency of surface porosity in the weld does not exceed one cluster (one or more pores) in any 100 mm (4 in.) of length, and the diameter of each cluster does not exceed 2.5 mm (3/32 in.).
- The reinforcement of the welds on all thicknesses:

| Plate Thickness<br>mm (in.) | Maximum Reinforcement Thickness<br>mm (in.) |                   |
|-----------------------------|---------------------------------------------|-------------------|
|                             | Vertical Joints                             | Horizontal Joints |
| ≤ 13 (1/2)                  | 2.5 (3/32)                                  | 3 (1/8)           |
| > 13 (1/2) to 25 (1)        | 3 (1/8)                                     | 5 (3/16)          |
| > 25 (1)                    | 5 (3/16)                                    | 8 (5/16)          |

Surface Condition (As Welded)

Test Solution: N/A

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE Ambient Conditions: 4°

Items Tested:

SR3 VERTS + HORIZONTAL 2

Results:

NO DEFECTS WERE FOUND. ALL WELDING ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: JUNE 12/18Client Representative Signature: Clem Bonnell Date: JUNE 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 16, Rev A

### DIMENSIONAL CHECK REPORT – PEAKING

Customer: AGNICO EAGLE

Location: RANKIN INLET

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each vertical seam will be checked for peaking and max. peak dimension recorded for that seam.)

Test Date(s): JUNE 12 / 18

Tested by: MATT MACKENZIE

Seam Test Results:

SR3 VERTS ARE ALL ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: [Signature] Date: June 25/18

Client: \_\_\_\_\_ Date: \_\_\_\_\_

QUALITY CONTROL MANUAL

Exhibit 17, Rev A

DIMENSIONAL CHECK REPORT – BANDING

Customer: AGNICO EMBLE

Location: RAWKIN INLET TR 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each circumferential seam will be checked for banding and max. banding dimension recorded for that seam. Circumferential seams will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 12/18

Tested by: MATT MCKENZIE

Seam Test Results:

HORIZONTAL 2 BANDING ACCEPTABLE

Sub-Arc Representative Signature: Matt McKenzie Date: June 12/18

Client Representative Signature: Clem Bence Date: June 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 15c, Rev 1

## VISUAL TEST REPORT

Customer: Agnico Eagle

Location: Rankin Inlet

Code Requiring Test: API 650 (section 8.5.2)

Reason for Test: New Construction

A weld shall be acceptable by visual examination if the inspection shows the following.

- There are no crater cracks, other surface cracks or arc strikes in or adjacent to the welded joints.
- Maximum permissible undercut is 0.4 mm (1/64 in.) in depth for vertical butt joints, vertically oriented permanent attachments, attachment welds for nozzles, manholes, flush-type openings, and the inside shell-to-bottom welds. For horizontal butt joints, horizontally oriented permanent attachments, and annular-ring butt joints, the maximum permissible undercut is 0.8 mm (1/32 in.) in depth.
- The frequency of surface porosity in the weld does not exceed one cluster (one or more pores) in any 100 mm (4 in.) of length, and the diameter of each cluster does not exceed 2.5 mm (3/32 in.).
- The reinforcement of the welds on all thicknesses:

| Plate Thickness<br>mm (in.) | Maximum Reinforcement Thickness<br>mm (in.) |                   |
|-----------------------------|---------------------------------------------|-------------------|
|                             | Vertical Joints                             | Horizontal Joints |
| ≤ 13 (1/2)                  | 2.5 (3/32)                                  | 3 (1/8)           |
| > 13 (1/2) to 25 (1)        | 3 (1/8)                                     | 5 (3/16)          |
| > 25 (1)                    | 5 (3/16)                                    | 6 (1/4)           |

Surface Condition (As Welded)

Test Solution: N/A

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Ambient Conditions: 4°

Items Tested:

SR4 VERTS + HORIZONTAL 3

Results:

NO DEFECTS WERE FOUND. ALL WELDING ACCEPTABLE.

Sub-Arc Representative Signature: [Signature] Date: JUNE 12/18Client Representative Signature: [Signature] Date: JUNE 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 16, Rev A

### DIMENSIONAL CHECK REPORT – PEAKING

Customer: AGNICO EAGLE

Location: RANKIN INLET

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each vertical seam will be checked for peaking and max. peak dimension recorded for that seam.)

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Seam Test Results:

SR4 VERB ARE ALL ACCEPTABLE.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: Matt Mackenzie Date: June 12/18

Client Representative Signature: Chen Boissier Date: June 25/18

Client: \_\_\_\_\_ Date: \_\_\_\_\_

QUALITY CONTROL MANUAL

Exhibit 17, Rev A

DIMENSIONAL CHECK REPORT – BANDING

Customer: AGNICO EAGLE

Location: RANKIN INLET TR - 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each circumferential seam will be checked for banding and max. banding dimension recorded for that seam. Circumferential seams will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 12/18

Tested by: MATT MARKOWICZ

Seam Test Results:

HORIZONTAL 3 BANDING ACCEPTABLE.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: [Signature] Date: JUNE 12/18

Client Representative Signature: [Signature] Date: JUNE 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 15c, Rev 1

## VISUAL TEST REPORT

Customer: Agnico Eagle

Location: Rankin Inlet

Code Requiring Test: API 650 (section 8.5.2)

Reason for Test: New Construction

A weld shall be acceptable by visual examination if the inspection shows the following.

- There are no crater cracks, other surface cracks or arc strikes in or adjacent to the welded joints.
- Maximum permissible undercut is 0.4 mm (1/64 in.) in depth for vertical butt joints, vertically oriented permanent attachments, attachment welds for nozzles, manholes, flush-type openings, and the inside shell-to-bottom welds. For horizontal butt joints, horizontally oriented permanent attachments, and annular-ring butt joints, the maximum permissible undercut is 0.8 mm (1/32 in.) in depth.
- The frequency of surface porosity in the weld does not exceed one cluster (one or more pores) in any 100 mm (4 in.) of length, and the diameter of each cluster does not exceed 2.5 mm (3/32 in.).
- The reinforcement of the welds on all thicknesses:

| Plate Thickness<br>mm (in.) | Maximum Reinforcement Thickness<br>mm (in.) |                   |
|-----------------------------|---------------------------------------------|-------------------|
|                             | Vertical Joints                             | Horizontal Joints |
| ≤ 13 (1/2)                  | 2.5 (3/32)                                  | 3 (1/8)           |
| > 13 (1/2) to 25 (1)        | 3 (1/8)                                     | 5 (3/16)          |
| > 25 (1)                    | 5 (3/16)                                    | 6 (1/4)           |

Surface Condition (As Welded)

Test Solution: N/A

Test Date(s): June 12/18Tested by: MATT MACKENZIEAmbient Conditions: 40

Items Tested:

SR5 VERTS + HORIZONTAL 4

Results:

NO DEFECTS WERE FOUND. ALL WELDING ACCEPTABLE.Sub-Arc Representative Signature: [Signature]Date: June 12/18Client Representative Signature: [Signature]Date: June 25/18

Client Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Revision 1

March 1, 2017

## QUALITY CONTROL MANUAL

Exhibit 16, Rev A

### DIMENSIONAL CHECK REPORT – PEAKING

Customer: AGNICO EAGLE  
Location: RANKIN INLET TR 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each vertical seam will be checked for peaking and max. peak dimension recorded for that seam.)

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Seam Test Results:

SR5 VERTS ARE ALL ACCEPTABLE.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: [Signature] Date: June 25/18

Client: \_\_\_\_\_ Date: \_\_\_\_\_

QUALITY CONTROL MANUAL

Exhibit 17, Rev A

DIMENSIONAL CHECK REPORT – BANDING

Customer: AGNICO EMBLE

Location: RANKIN INLET TR-1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(Each circumferential seam will be checked for banding and max. banding dimension recorded for that seam. Circumferential seams will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 12/18

Tested by: MATT MACKENZIE

Seam Test Results:

HORIZONTAL 4 BANDING ACCEPTABLE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub-Arc Representative Signature: [Signature] Date: June 12/18

Client Representative Signature: Clem Bonea Date: June 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## QUALITY CONTROL MANUAL

Exhibit 19, Rev A

## DIMENSIONAL CHECK REPORT – PLUMBNESS

Customer: AGNICO EAGLELocation: RANKIN INLET TK 1

Equipment Tag No.:

Equipment Type:

Equipment Description:

Code Requiring Test: API 650

Reason for Test: New Construction

(The tank shell will be checked for plumb at 12" below the tank roof. Plumb measurements will be checked at 45 degree intervals or less, max. 20' spacing)

Test Date(s): JUNE 21, 18Tested by: MATT MACKENZIE

Seam Test Results:

0, 7/8", 5/8", 1/4", 1/4", 1/2", 3/8", 3/8", 1/8", 1/4", 1/4", 0, 7/8", 1/4"PLUMBNESS ACCEPTABLE ON SHELLSub-Arc Representative Signature: Matt Mackenzie Date: June 21/18Client Representative Signature: Colin Bonner Date: June 25/18

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Exhibit 15b, Rev 1

## QUALITY CONTROL MANUAL

### DIESEL TEST REPORT (SHELL)

Customer: Agnico Eagle

Location: Rankin Inlet

Equipment Tag No.: N/A

Equipment Type: N/A

Equipment Description: N/A

Code Requiring Test: API 650 (section 7.3.5)

Reason for Test: New Construction

(The shell shall be tested by painting all of the joints on the inside with a highly penetrating oil and carefully examining the outside of the joints for leakage.)

Surface Condition (As Welded)

Test Solution: Diesel

Test Date(s): June 21/18

Tested by: MAT MURKIE

Ambient Conditions: 7°

Items Tested:

SR1, SR2, SR3, SR4, SR5

Results:

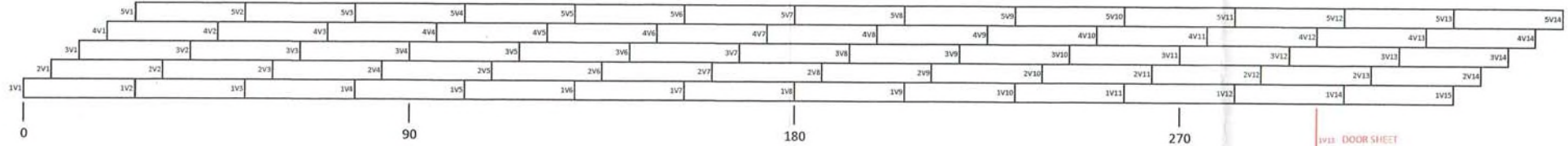
No leaks were found.

Sub-Arc Representative Signature: [Signature] Date: June 21/18

Client Representative Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Tank #1 Rankin Inlet (AEM)



NDT TECHNICIAN WILL INITIAL EACH BOX WHEN WELD IS ACCEPTABLE

B ----> BOTTOM OF THE VERT (0-6")

M ----> MIDDLE OF THE VERT (53"-59")

T ----> TOP OF THE VERT (104 3/16" - 110 3/16")

## VERTICAL SEAMS MAPPING UT

|           | B                                | M   | T   | FULL |
|-----------|----------------------------------|-----|-----|------|
| 1V1       | UT FULL BECAUSE NOZZLE INTO VERT |     |     |      |
| 1V2       | Exl                              | Exl | Exl |      |
| 1V3       | Exl                              | Exl | Exl |      |
| 1V4       | Exl                              | Exl | Exl |      |
| 1V5       | Exl                              | Exl | Exl |      |
| 1V6       | Exl                              | Exl | Exl |      |
| 1V7       | Exl                              | Exl | Exl |      |
| 1V8       | UT FULL BECAUSE NOZZLE INTO VERT |     |     | Exl  |
| 1V9       | Exl                              | Exl | Exl |      |
| 1V10      | Exl                              | Exl | Exl |      |
| 1V11      | Exl                              | Exl | Exl |      |
| 1V12      | Exl                              | Exl | Exl |      |
| 1V13 DOOR | Exl                              | Exl | Exl |      |
| 1V14      | Exl                              | Exl | Exl |      |
| 1V15      | Exl                              | Exl | Exl |      |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 2V1  | Exl | Exl | Exl |
| 2V2  | Exl | Exl | Exl |
| 2V3  | Exl | Exl | Exl |
| 2V4  | Exl | Exl | Exl |
| 2V5  | Exl | Exl | Exl |
| 2V6  | Exl | Exl | Exl |
| 2V7  | Exl | Exl | Exl |
| 2V8  | Exl | Exl | Exl |
| 2V9  | Exl | Exl | Exl |
| 2V10 | Exl | Exl | Exl |
| 2V11 | Exl | Exl | Exl |
| 2V12 | Exl | Exl | Exl |
| 2V13 | Exl | Exl | Exl |
| 2V14 | Exl | RI  | Exl |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 3V1  | Exl | Exl | Exl |
| 3V2  | Exl | Exl | Exl |
| 3V3  | Exl | Exl | Exl |
| 3V4  | Exl | Exl | Exl |
| 3V5  | Exl | Exl | Exl |
| 3V6  | Exl | RI  | Exl |
| 3V7  | Exl | Exl | Exl |
| 3V8  | Exl | Exl | Exl |
| 3V9  | Exl | Exl | Exl |
| 3V10 | Exl | Exl | Exl |
| 3V11 | Exl | Exl | Exl |
| 3V12 | Exl | Exl | Exl |
| 3V13 | Exl | RI  | Exl |
| 3V14 | Exl | Exl | Exl |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 4V1  | Exl | RI  | Exl |
| 4V2  | Exl | RI  | Exl |
| 4V3  | Exl | Exl | Exl |
| 4V4  | Exl | Exl | Exl |
| 4V5  | Exl | RI  | Exl |
| 4V6  | Exl | RI  | Exl |
| 4V7  | Exl | Exl | RI  |
| 4V8  | Exl | RI  | Exl |
| 4V9  | Exl | RI  | Exl |
| 4V10 | Exl | Exl | Exl |
| 4V11 | Exl | Exl | Exl |
| 4V12 | Exl | Exl | Exl |
| 4V13 | Exl | Exl | Exl |
| 4V14 | Exl | Exl | Exl |

|      | B   | T   |
|------|-----|-----|
| 5V1  | Exl | Exl |
| 5V2  | Exl | Exl |
| 5V3  | Exl | Exl |
| 5V4  | Exl | Exl |
| 5V5  | Exl | Exl |
| 5V6  | Exl | Exl |
| 5V7  | Exl | RI  |
| 5V8  | Exl | Exl |
| 5V9  | Exl | Exl |
| 5V10 | Exl | Exl |
| 5V11 | Exl | Exl |
| 5V12 | Exl | Exl |
| 5V13 | Exl | Exl |
| 5V14 | Exl | Exl |

## HORIZONTAL SEAMS MAPPING UT

|       |         |     |
|-------|---------|-----|
| H1V2  | 48"-54" | Exl |
| H1V8  | 60"-66" | Exl |
| H1V13 | 42"-48" | Exl |

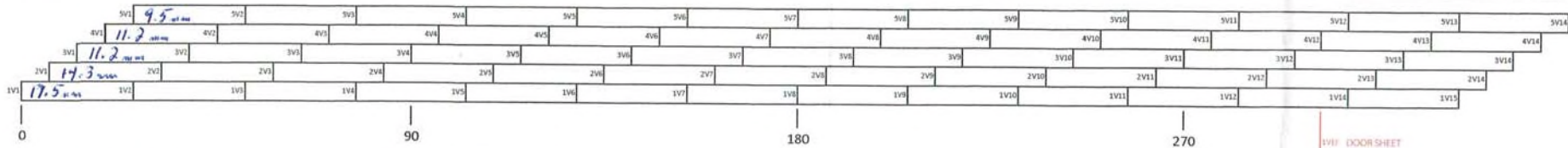
|      |         |     |
|------|---------|-----|
| H2V3 | 48"-54" | Exl |
| H2V9 | 72"-78" | Exl |

|      |         |     |
|------|---------|-----|
| H3V1 | 60"-66" | Exl |
| H3V7 | 42"-48" | Exl |

|       |         |     |
|-------|---------|-----|
| H4V5  | 30"-36" | Exl |
| H4V11 | 72"-78" | Exl |

|                                   |                       |       |             |
|-----------------------------------|-----------------------|-------|-------------|
| Sub-Arc Representative Signature: | <i>Robert K. K...</i> | Date: | June 25/18. |
| Client Representative Signature:  | <i>Clara B...</i>     | Date: | June 25/18  |
| NDT Representative Signature:     | <i>Ch...</i>          | Date: | 2018-06-23  |

## Tank #1 Rankin Inlet (AEM)



NDT TECHNICIAN WILL INITIAL EACH BOX WHEN WELD IS ACCEPTABLE

B ----> BOTTOM OF THE VERT (0-6")

M ----> MIDDLE OF THE VERT (53"-59")

T ----> TOP OF THE VERT (104 3/16" - 110 3/16")

## VERTICAL SEAMS MAPPING UT

|           | B                                | M   | T   | FULL |
|-----------|----------------------------------|-----|-----|------|
| 1V1       | UT FULL BECAUSE NOZZLE INTO VERT |     |     | Exl  |
| 1V2       | Exl                              | Exl | Exl |      |
| 1V3       | Exl                              | Exl | Exl |      |
| 1V4       | Exl                              | Exl | Exl |      |
| 1V5       | Exl                              | Exl | Exl |      |
| 1V6       | Exl                              | Exl | Exl |      |
| 1V7       | Exl                              | Exl | Exl |      |
| 1V8       | UT FULL BECAUSE NOZZLE INTO VERT |     |     | Exl  |
| 1V9       | Exl                              | Exl | Exl |      |
| 1V10      | Exl                              | Exl | Exl |      |
| 1V11      | Exl                              | Exl | Exl |      |
| 1V12      | Exl                              | Exl | Exl |      |
| 1V13 DOOR | Exl                              | Exl | Exl |      |
| 1V14      | Exl                              | Exl | Exl |      |
| 1V15      | Exl                              | Exl | Exl |      |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 2V1  | Exl | Exl | Exl |
| 2V2  | Exl | Exl | Exl |
| 2V3  | Exl | Exl | Exl |
| 2V4  | Exl | Exl | Exl |
| 2V5  | Exl | Exl | Exl |
| 2V6  | Exl | Exl | Exl |
| 2V7  | Exl | Exl | Exl |
| 2V8  | Exl | Exl | Exl |
| 2V9  | Exl | Exl | Exl |
| 2V10 | Exl | Exl | Exl |
| 2V11 | Exl | Exl | Exl |
| 2V12 | Exl | Exl | Exl |
| 2V13 | Exl | Exl | Exl |
| 2V14 | Exl | Exl | Exl |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 3V1  | Exl | Exl | Exl |
| 3V2  | Exl | Exl | Exl |
| 3V3  | Exl | Exl | Exl |
| 3V4  | Exl | Exl | Exl |
| 3V5  | Exl | Exl | Exl |
| 3V6  | Exl | Exl | Exl |
| 3V7  | Exl | Exl | Exl |
| 3V8  | Exl | Exl | Exl |
| 3V9  | Exl | Exl | Exl |
| 3V10 | Exl | Exl | Exl |
| 3V11 | Exl | Exl | Exl |
| 3V12 | Exl | Exl | Exl |
| 3V13 | Exl | Exl | Exl |
| 3V14 | Exl | Exl | Exl |

|      | B   | M   | T   |
|------|-----|-----|-----|
| 4V1  | Exl | Exl | Exl |
| 4V2  | Exl | Exl | Exl |
| 4V3  | Exl | Exl | Exl |
| 4V4  | Exl | Exl | Exl |
| 4V5  | Exl | Exl | Exl |
| 4V6  | Exl | Exl | Exl |
| 4V7  | Exl | Exl | Exl |
| 4V8  | Exl | Exl | Exl |
| 4V9  | Exl | Exl | Exl |
| 4V10 | Exl | Exl | Exl |
| 4V11 | Exl | Exl | Exl |
| 4V12 | Exl | Exl | Exl |
| 4V13 | Exl | Exl | Exl |
| 4V14 | Exl | Exl | Exl |

|      | B   | T   |
|------|-----|-----|
| 5V1  | Exl | Exl |
| 5V2  | Exl | Exl |
| 5V3  | Exl | Exl |
| 5V4  | Exl | Exl |
| 5V5  | Exl | Exl |
| 5V6  | Exl | Exl |
| 5V7  | Exl | Exl |
| 5V8  | Exl | Exl |
| 5V9  | Exl | Exl |
| 5V10 | Exl | Exl |
| 5V11 | Exl | Exl |
| 5V12 | Exl | Exl |
| 5V13 | Exl | Exl |
| 5V14 | Exl | Exl |

## HORIZONTAL SEAMS MAPPING UT

|       |         |     |
|-------|---------|-----|
| H1V2  | 48"-54" | Exl |
| H1V8  | 60"-66" | Exl |
| H1V13 | 42"-48" | Exl |

|       |         |     |
|-------|---------|-----|
| H2V3  | 48"-54" | Exl |
| H2V9  | 72"-78" | Exl |
| H2V13 | 48"-54" | Exl |

|       |         |     |
|-------|---------|-----|
| H3V1  | 60"-66" | Exl |
| H3V7  | 42"-48" | Exl |
| H3V13 | 30"-36" | Exl |

|       |         |     |
|-------|---------|-----|
| H4V5  | 30"-36" | Exl |
| H4V11 | 72"-78" | Exl |
| H4V13 | 36"-42" | Exl |

## MAG PARTICLE

|                   |     |
|-------------------|-----|
| NOZZLE M1601 (x1) | Exl |
| NOZZLE M1602 (x3) | Exl |
| NOZZLE M1614 (x6) | Exl |

|                          |     |
|--------------------------|-----|
| TEMP CONNECTION COUPLING | Exl |
| ROOF NOZZLES             | Exl |

|                    |     |
|--------------------|-----|
| SHELL MANHOLE 0"   | Exl |
| SHELL MANHOLE 90"  | Exl |
| SHELL MANHOLE 180" | Exl |
| SHELL MANHOLE 270" | Exl |

|                                |     |
|--------------------------------|-----|
| SHELL MANHOLE NECK (SEAM) 0"   | Exl |
| SHELL MANHOLE NECK (SEAM) 90"  | Exl |
| SHELL MANHOLE NECK (SEAM) 180" | Exl |
| SHELL MANHOLE NECK (SEAM) 270" | Exl |

Sub-Arc Representative Signature: *Keith H. H. H.* Date: *June 24/18*

Client Representative Signature: *Chris Brown* Date: *June 24/18*

NDT Representative Signature: *Etienne M. M. M.* Date: *2018-06-24* (SGS)



|                                        |                                               |                                              |                  |
|----------------------------------------|-----------------------------------------------|----------------------------------------------|------------------|
| Client :                               | Inukshuk Construction Ltd,                    | Date d'intervention :<br>Intervention date : | 2018-06-19 to 24 |
| Adresse/Address :                      | , PO Box 654 Rankin Inlet,<br>Nunavut X0C 0G0 | Date du rapport :<br>Report date :           | 2018-06-27       |
| Contact :                              | Marc Losier                                   | N° dossier :<br>File no :                    | INS-118016-02    |
| Entrepreneur :<br>Contractor :         | tClient                                       | Commande :<br>Order :                        | 295-1024         |
| Endroit du travail :<br>Job location : | Site Meliadine Gold Mine at<br>Rankin Inlet   |                                              |                  |

Page 1 de/of 6

|                                                                                                                                                                                                                                                                                                                                           |                          |                                                                       |                          |                                         |                                                      |                         |                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------|--------------------------|-----------------------------------------|------------------------------------------------------|-------------------------|-------------------------------------|
| INSP. VISUELLE<br>VISUAL INSP.                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> | MAGNÉTOSCOPIE<br>MAGNETIC PARTICLES                                   | <input type="checkbox"/> | RESSUAGE<br>LIQUID PENETRANT            | <input type="checkbox"/>                             | ULTRASONS<br>ULTRASONIC | <input checked="" type="checkbox"/> |
| <b>DESCRIPTION :</b><br><br><b>Project: Meliadine Gold Mine (Agnico Eagle).</b><br><br>Ultrasonic inspection in accordance to API 650 Tank No 1 at Site Rankin Inlet<br><br>Note: The client is opting to use an ultrasonic testing, instead of radiographic testing                                                                      |                          |                                                                       |                          |                                         |                                                      |                         |                                     |
| <b>INSP. VISUELLE / VISUAL INSP.</b>                                                                                                                                                                                                                                                                                                      |                          | <b>NORME :<br/>SPECIFICATION :</b>                                    |                          |                                         | <b>N° équip. :<br/>Equip. no :</b>                   |                         |                                     |
| <b>MAGNÉTOSCOPIE<br/>MAGNETIC PARTICLES</b>                                                                                                                                                                                                                                                                                               |                          | <b>NORME :<br/>SPECIFICATION :</b>                                    |                          |                                         | <b>N° équip. :<br/>Equip. no :</b>                   |                         |                                     |
| Ampérage : Culasse/Yoke                                                                                                                                                                                                                                                                                                                   |                          | Continue                                                              |                          |                                         | Humide                                               |                         |                                     |
| Amperage :                                                                                                                                                                                                                                                                                                                                |                          | Continuous                                                            |                          |                                         | Wet                                                  |                         |                                     |
| Longitudinale                                                                                                                                                                                                                                                                                                                             |                          | Circulaire                                                            |                          |                                         | C.C.                                                 |                         |                                     |
| Longitudinal <input type="checkbox"/>                                                                                                                                                                                                                                                                                                     |                          | Circular <input type="checkbox"/>                                     |                          |                                         | D.C. <input type="checkbox"/>                        |                         |                                     |
| Sèche                                                                                                                                                                                                                                                                                                                                     |                          | Résiduelle                                                            |                          |                                         | Sèche                                                |                         |                                     |
| Dry                                                                                                                                                                                                                                                                                                                                       |                          | Residual                                                              |                          |                                         | Dry                                                  |                         |                                     |
| Démagnétisée                                                                                                                                                                                                                                                                                                                              |                          | C.A.                                                                  |                          |                                         | Démagnétisée                                         |                         |                                     |
| Demagnetized                                                                                                                                                                                                                                                                                                                              |                          | A.C.                                                                  |                          |                                         | Demagnetized                                         |                         |                                     |
| <b>RESSUAGE<br/>LIQUID PENETRANT</b>                                                                                                                                                                                                                                                                                                      |                          | <b>NORME :<br/>SPECIFICATION :</b>                                    |                          |                                         | <b>N° équip. :<br/>Equip. no :</b>                   |                         |                                     |
| Pénétrant/Penetrant :                                                                                                                                                                                                                                                                                                                     |                          | Émulsifiant/Emulsifier :                                              |                          |                                         | Révélateur/Developer :                               |                         |                                     |
| Temps/Time :                                                                                                                                                                                                                                                                                                                              |                          | Temps/Time :                                                          |                          |                                         | Temps/Time :                                         |                         |                                     |
| <b>ULTRASONS / ULTRASONIC</b>                                                                                                                                                                                                                                                                                                             |                          | <b>NORME :<br/>SPECIFICATION :</b> API 650                            |                          |                                         |                                                      |                         |                                     |
| <b>ÉTALONNAGE/CALIBRATION :</b>                                                                                                                                                                                                                                                                                                           |                          |                                                                       |                          |                                         |                                                      |                         |                                     |
| Bloc/Block : ASME                                                                                                                                                                                                                                                                                                                         |                          | Trou/Hole : 3/32                                                      |                          |                                         | C.A.D. /D.A.C. : <input checked="" type="checkbox"/> |                         |                                     |
| <b>APPAREIL/EQUIPMENT :</b>                                                                                                                                                                                                                                                                                                               |                          |                                                                       |                          |                                         |                                                      |                         |                                     |
| Instrument : USM GO+                                                                                                                                                                                                                                                                                                                      |                          | Couplant : Ecogel                                                     |                          |                                         | Échelle/Sweep length : 150mm                         |                         |                                     |
| N° équip./Equip. no : UT-92                                                                                                                                                                                                                                                                                                               |                          | Palpeur/Transducer : 0 Ø, 1/2"Ø, 5Mhz and 70 Ø, 0.75 X0.625", 2,25Mhz |                          |                                         |                                                      |                         |                                     |
| <b>RÉSULTATS/RESULTS :</b><br><br><b>Ultrasonic inspection performed on TANK No. 1 :</b> <ul style="list-style-type: none"><li>43M Diameter, 5 rings</li><li>The first ring plate thickness is 17.5mm</li><li>Other plates thickness were 14.3mm, 11.2mm, 11.2mm and 9.5mm</li></ul><br>Remark: Visual inspection was performed by client |                          |                                                                       |                          |                                         |                                                      |                         |                                     |
| <b>Techniciens :<br/>Technicians :</b>                                                                                                                                                                                                                                                                                                    |                          | <b>Assistants:</b>                                                    |                          | <b>Approuvé par :<br/>Approved by :</b> |                                                      |                         |                                     |
| Etienne Munger                                                                                                                                                                                                                                                                                                                            |                          |                                                                       |                          | Patrick Brodeur<br>Technical Supervisor |                                                      |                         |                                     |
| CGSB 48.9712 MT Level 2 UT/PT niv.1                                                                                                                                                                                                                                                                                                       |                          | Qualification                                                         |                          | CSA W178.2 niv.3                        |                                                      |                         |                                     |

Ce rapport ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite de SGS CANADA inc.

Le présent rapport est émis par la Société conformément à ses Conditions Générales de Service accessibles sur <http://www.sgs.ca/fr-FR/Terms-and-Conditions.aspx>

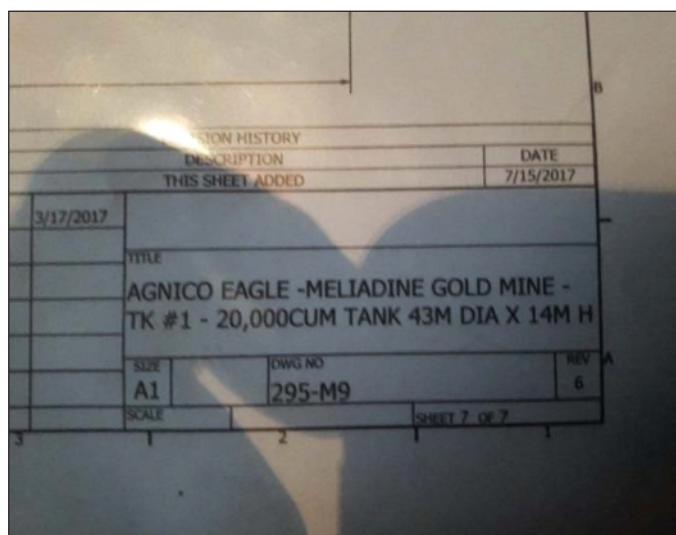
This report is confidential and shall not be reproduced without the written approval of SGS CANADA Inc

This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.ca/en/Terms-and-Conditions.aspx>

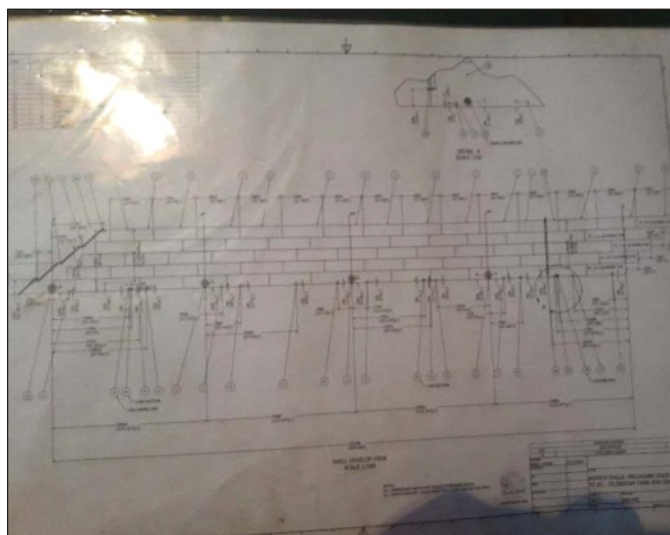
|                             |                                               |                              |                      |
|-----------------------------|-----------------------------------------------|------------------------------|----------------------|
| <b>Client :</b>             | <b>Inukshuk Construction Ltd,</b>             | <b>Date d'intervention :</b> | 2018-06-19 to 24     |
| <b>Adresse/Address :</b>    | , PO Box 654 Rankin Inlet,<br>Nunavut X0C 0G0 | <b>Intervention date :</b>   |                      |
| <b>Contact :</b>            | Marc Losier                                   | <b>Date du rapport :</b>     | 2018-06-27           |
| <b>Entrepreneur :</b>       | tClient                                       | <b>Report date :</b>         |                      |
| <b>Contractor :</b>         |                                               | <b>N° dossier :</b>          | <b>INS-118016-02</b> |
| <b>Endroit du travail :</b> | Site Meliadine Gold Mine at Rankin Inlet      | <b>File no :</b>             |                      |
| <b>Job location :</b>       |                                               | <b>Commande :</b>            | 295-1024             |
|                             |                                               | <b>Order :</b>               |                      |

| Item inspected                   | UT Inspection                                                                                                                                                                     | Results                                              |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Intersection(T)150mm each weld   | All Intersections Accepted                                                                                                                                                        | Accepted<br>After 12 repairs intersections<br>Note 1 |
| Vertical weld spot first ring    | – two spots (Bottom and middle) on each vertical weld<br>-The viatical 1V1 and 1V8 100% of vertical weld because nozzles                                                          | Accepted                                             |
| Vertical weld – Ring 2 to ring 5 | One spot (middle) on the each vertical welds                                                                                                                                      | Accepted<br>After 3 repair spots<br>Note 1           |
| Horizontal weld                  | 3 spots on first horizontal weld (including spot of door plate longer 250mm) and 3 spots on 3 other horizontal welds (total 12 spots)                                             | Accepted                                             |
| Door plate                       | <ul style="list-style-type: none"> <li>- Two intersections</li> <li>- Two spots (bottom and middle) on each vertical weld</li> <li>- One spot 250mm on horizontal weld</li> </ul> |                                                      |

Note1: The repair spots requirements extension, it was done according to article 8.1.6 the standard - API 650



DWG 295-M9 (TANK No 1)



DWG for manholes on shell

|                      |                                     |                    |               |                       |                      |
|----------------------|-------------------------------------|--------------------|---------------|-----------------------|----------------------|
| <b>Techniciens :</b> | Etienne Munger                      | <b>Assistants:</b> |               | <b>Approuvé par :</b> | Patrick Brodeur      |
| <b>Technicians :</b> |                                     |                    |               | <b>Approved by :</b>  | Technical Supervisor |
|                      | CGSB 48.9712 MT Level 2 UT/PT niv.1 |                    | Qualification |                       | CSA W178.2 niv.3     |

Ce rapport ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite de SGS CANADA inc.  
 Le présent rapport est émis par la Société conformément à ses Conditions Générales de Service accessibles sur <http://www.sgs.ca/fr-FR/Terms-and-Conditions.aspx>  
 This report is confidential and shall not be reproduced without the written approval of SGS CANADA Inc  
 This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.ca/en/Terms-and-Conditions.aspx>

|                      |                                               |                       |                  |
|----------------------|-----------------------------------------------|-----------------------|------------------|
| Client :             | Inukshuk Construction Ltd,                    | Date d'intervention : | 2018-06-19 to 24 |
| Adresse/Address :    | , PO Box 654 Rankin Inlet,<br>Nunavut X0C 0G0 | Intervention date :   |                  |
| Contact :            | Marc Losier                                   | Date du rapport :     | 2018-06-27       |
| Entrepreneur :       | tClient                                       | Report date :         |                  |
| Contractor :         |                                               | N° dossier :          | INS-118016-02    |
| Endroit du travail : | Site Meliadine Gold Mine at Rankin Inlet      | File no :             |                  |
| Job location :       |                                               | Commande :            | 295-1024         |
|                      |                                               | Order :               |                  |

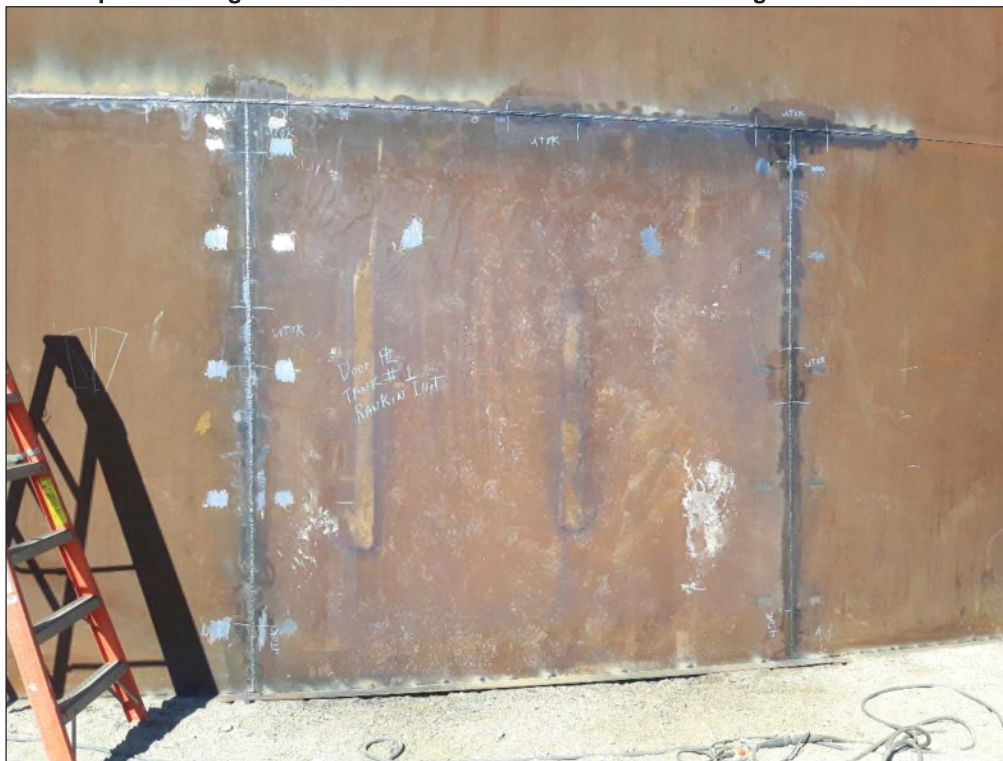
|     |         |     |       |     |
|-----|---------|-----|-------|-----|
| 5V1 | 9.5 mm  | 5V2 | 3/8   | 5V3 |
| 4V1 | 11.2 mm | 4V2 | 7/16  | 4V3 |
| 3V1 | 11.2 mm | 3V2 | 11/16 | 3V3 |
| 2V1 | 14.3 mm | 2V2 | 9/16  | 2V3 |
| 1V1 | 17.5 mm | 1V2 | 11/16 | 1V3 |
|     |         |     |       | 1V4 |

NDT TECHNICIAN WILL INITIAL EACH BOX WHEN WELD IS AC

Thickness plate on ring tank No 1



Meliadine gold mine at rankin inlet site



Door plate UT on 7 spots

|               |                                     |               |                |                      |
|---------------|-------------------------------------|---------------|----------------|----------------------|
| Techniciens : | Etienne Munger                      | Assistants:   | Approuvé par : | Patrick Brodeur      |
| Technicians : |                                     |               | Approved by :  | Technical Supervisor |
|               | CGSB 48.9712 MT Level 2 UT/PT niv.1 |               |                | CSA W178.2 niv.3     |
|               |                                     | Qualification |                |                      |

Ce rapport ne doit pas être reproduit, sinon en entier, sans l'autorisation écrite de SGS CANADA inc.  
 Le présent rapport est émis par la Société conformément à ses Conditions Générales de Service accessibles sur <http://www.sgs.ca/fr-FR/Terms-and-Conditions.aspx>  
 This report is confidential and shall not be reproduced without the written approval of SGS CANADA Inc  
 This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.ca/en/Terms-and-Conditions.aspx>