



## CERTIFICATE OF THOROUGH EXAMINATION & NDT

This Certificate complies with the requirements of the ASTM & Lifting Equipment Operations and Lifting Equipment Regulations

|                                  |                                                                    |                           |                          |
|----------------------------------|--------------------------------------------------------------------|---------------------------|--------------------------|
| <b>Client</b>                    | <b>HALLIBURTON</b>                                                 | <b>Report No:</b>         | QC-24-06/HALL-HPS-07/C12 |
| <b>Item Description</b>          | WET KIT                                                            | <b>Job No:</b>            | QC-24-06/HALL-HPS-07     |
| <b>General Scope of Activity</b> | Coiled Tubing Unit-7 WET KIT STRUCTURE, ACCUMULATOR UTT            | <b>Date of Inspection</b> | 01-NOV-2024              |
| <b>Place of Inspection</b>       | HPS Yard                                                           | <b>Valid Until:</b>       | <b>30-MAY-2025</b>       |
| <b>Reference Standards:</b>      | ASTM E797 & ASTM E709 & ASTM E 1444 (2016) ASME V Article 7 (2019) |                           |                          |

This is to certify that the undersigned did at the request of Halliburton, Al Burjesia Base attend their facilities at HPS Department on 01-NOV-2024 in order to carry out the scope of services as described below.

### 1.0 Scope of Activity:

- 1.1) Visual Inspection of Coil Tubing Unit – **WET KIT STRUCTURE**
- 1.2) Magnetic Particle Inspection (MPI).
- 1.3) Ultrasonic Thickness Testing (UTT)
- 1.4) Review of maintenance records and Previous reports
- 1.5) Issue of Report.

### 2.0 Summary of Inspection:

- 2.1) Thorough visual inspection of Coil Tubing Unit- **WET KIT STRUCTURE**, SAP No- **12173665** was carried out and found satisfactory.
- 2.2) MPI was performed on accessible **Structure welds, Pad eyes and its associated welds**. The result was found satisfactory.
- 2.3) Ultrasonic Thickness Testing was carried out on **Accumulator**. The result was found satisfactory.
- 2.4) The maintenance record of the vehicle was reviewed.

### 3.0 Identification of item(s) verified & Details of Inspection:

#### A) WET KIT STRUCTURE

|                        |                         |
|------------------------|-------------------------|
| <b>SAP No</b>          | 12173665                |
| <b>ACCUMULATOR MFG</b> | HYDAC                   |
| <b>Location:</b>       | Coiled Tubing Unit - 07 |

**THIS IS TO CERTIFY THAT;** a competent person did attend the above-mentioned owner's work location on the date shown above and the equipment described in this report was tested & inspected as per the requirements of ASTM & Lifting Operations Lifting Equipment Regulation "LOLER". The result was found Satisfactory at the time of Inspection and considered Safe for Lifting.





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### 3.1) Visual Inspection:

- The visual Inspection of the Coil Tubing Unit- **WET KIT STRUCTURE** was carried out as follows:
- The **Structure welds** of the Unit were inspected and NO visible damages observed
- The visual Inspection of **Pad Eyes** was done and found satisfactory.
- The visual Inspection of **Accumulator & Hoses** was done and found satisfactory.
- No visual damages on **Painting** were observed on the external surfaces.

**FINAL RESULT: PASS**

### 3.2) Magnetic Particle Inspection (MPI):

Magnetic particle Inspection was performed on the following components.:

- Accessible **Structure Welds**
- **Pad Eyes** and its Associated welds

**FINAL RESULT: PASS**

### 3.3) ULTRASONIC THICKNESS TESTING (UTT):

Ultrasonic Thickness Testing was performed on the following components.:

- 15 GALLON ACCUMULATOR BOTTLES (BDY BP MAWP 3000 PSI A 200°F APP 22V15G)

**FINAL RESULT: PASS**

### 3.4) Review of maintenance Record:

The maintenance records and test reports accessories were reviewed and found satisfactory

**FINAL RESULT: PASS**

### 4.0 CONCLUSION:

The above Coil Tubing Unit- **WET KIT STRUCTURE & UTT of ACCUMULATORS** was found to be in satisfactory condition after carrying out necessary inspection and tests subjected to proper maintenance according to manufacturer recommendation.

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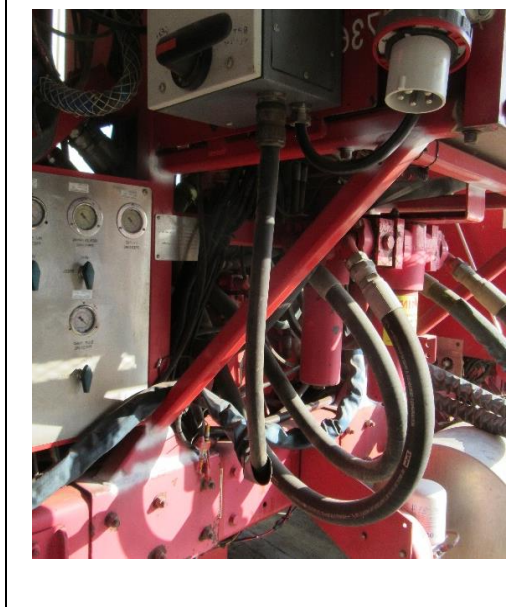
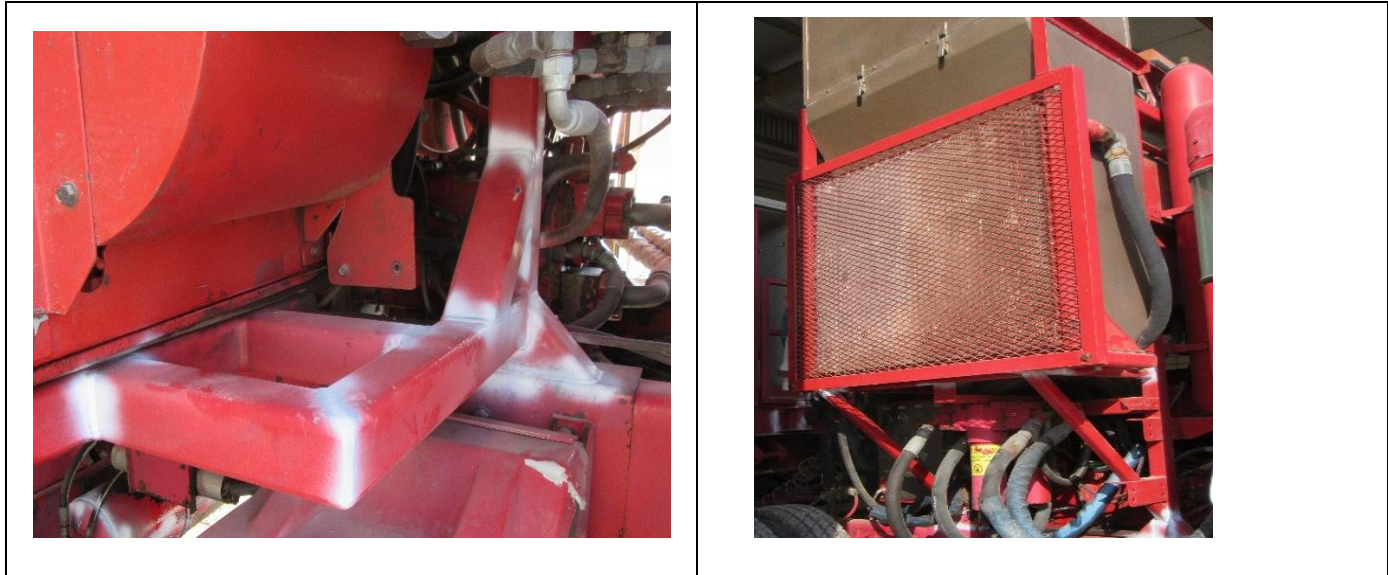




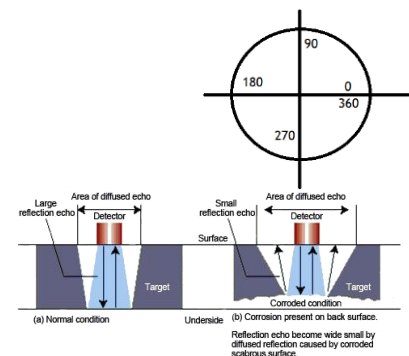
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### Photographs Of Activity



| Ultrasonic Thickness Test of Accumulator Bottle |       |       |       |       | Serial No: | 12D007015 |
|-------------------------------------------------|-------|-------|-------|-------|------------|-----------|
| SECTION                                         | 0*    | 90*   | 180*  | 270*  | OEM Min    | Result    |
| TOP NECK                                        | 0.618 | 0.578 | 0.597 | 0.606 | 0.500      | ACCEPTED  |
| MIDDLE                                          | 0.458 | 0.432 | 0.422 | 0.449 | 0.300      | ACCEPTED  |
| BOTTOM NECK                                     | 0.621 | 0.607 | 0.634 | 0.613 | 0.500      | ACCEPTED  |



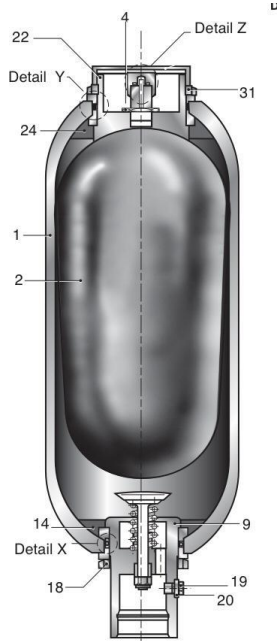
**THIS IS TO CERTIFY THAT;** a competent person did attend the above-mentioned owner's work location on the date shown above and the equipment described in this report was tested & inspected as per the requirements of ASTM & Lifting Operations Lifting Equipment Regulation "LOLER". The result was found Satisfactory at the time of Inspection and considered Safe for Lifting.





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| Ultrasonic Thickness Test of Accumulator Bottle |             |       |       | Serial No: |       | 12D256012 |          |
|-------------------------------------------------|-------------|-------|-------|------------|-------|-----------|----------|
|                                                 | SECTION     | 0*    | 90*   | 180*       | 270*  | OEM Min   | Result   |
| 1                                               | TOP NECK    | 0.607 | 0.593 | 0.611      | 0.616 | 0.500     | ACCEPTED |
| 2                                               | MIDDLE      | 0.432 | 0.444 | 0.439      | 0.435 | 0.300     | ACCEPTED |
|                                                 |             | 0.434 | 0.452 | 0.427      | 0.441 |           | ACCEPTED |
|                                                 |             | 0.457 | 0.446 | 0.453      | 0.450 |           | ACCEPTED |
| 3                                               | BOTTOM NECK | 0.627 | 0.617 | 0.622      | 0.587 | 0.500     | ACCEPTED |

| Ultrasonic Thickness Test of Accumulator Bottle |             |       |       | Serial No: |       | 18D362012 |          |
|-------------------------------------------------|-------------|-------|-------|------------|-------|-----------|----------|
|                                                 | SECTION     | 0*    | 90*   | 180*       | 270*  | OEM Min   | Result   |
| 1                                               | TOP NECK    | 0.596 | 0.606 | 0.617      | 0.602 | 0.500     | ACCEPTED |
| 2                                               | MIDDLE      | 0.422 | 0.453 | 0.446      | 0.443 | 0.300     | ACCEPTED |
|                                                 |             | 0.452 | 0.439 | 0.428      | 0.448 |           | ACCEPTED |
|                                                 |             | 0.442 | 0.444 | 0.453      | 0.433 |           | ACCEPTED |
| 3                                               | BOTTOM NECK | 0.609 | 0.612 | 0.592      | 0.579 | 0.500     | ACCEPTED |

| Ultrasonic Thickness Test of Accumulator Bottle |             |       |       | Serial No: |       | 18D362014 |          |
|-------------------------------------------------|-------------|-------|-------|------------|-------|-----------|----------|
|                                                 | SECTION     | 0*    | 90*   | 180*       | 270*  | OEM Min   | Result   |
| 1                                               | TOP NECK    | 0.626 | 0.602 | 0.615      | 0.596 | 0.500     | ACCEPTED |
| 2                                               | MIDDLE      | 0.445 | 0.426 | 0.434      | 0.451 | 0.300     | ACCEPTED |
|                                                 |             | 0.438 | 0.435 | 0.452      | 0.443 |           | ACCEPTED |
|                                                 |             | 0.440 | 0.458 | 0.462      | 0.437 |           | ACCEPTED |
| 3                                               | BOTTOM NECK | 0.607 | 0.589 | 0.604      | 0.596 | 0.500     | ACCEPTED |

| Ultrasonic Thickness Test of Accumulator Bottle |             |       |       | Serial No: |       | 18D362013 |          |
|-------------------------------------------------|-------------|-------|-------|------------|-------|-----------|----------|
|                                                 | SECTION     | 0*    | 90*   | 180*       | 270*  | OEM Min   | Result   |
| 1                                               | TOP NECK    | 0.593 | 0.601 | 0.607      | 0.617 | 0.500     | ACCEPTED |
| 2                                               | MIDDLE      | 0.428 | 0.417 | 0.448      | 0.432 | 0.300     | ACCEPTED |
|                                                 |             | 0.453 | 0.412 | 0.457      | 0.426 |           | ACCEPTED |
|                                                 |             | 0.432 | 0.442 | 0.443      | 0.431 |           | ACCEPTED |
| 3                                               | BOTTOM NECK | 0.622 | 0.612 | 0.582      | 0.594 | 0.500     | ACCEPTED |

All Measurement in Inches

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**AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED**

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| Ultrasonic Thickness Test of Accumulator Bottle |             |       |       | Serial No: |       | 18D362011 |          |
|-------------------------------------------------|-------------|-------|-------|------------|-------|-----------|----------|
|                                                 | SECTION     | 0*    | 90*   | 180*       | 270*  | OEM Min   | Result   |
| 1                                               | TOP NECK    | 0.611 | 0.591 | 0.628      | 0.615 | 0.500     | ACCEPTED |
| 2                                               | MIDDLE      | 0.425 | 0.453 | 0.447      | 0.442 | 0.300     | ACCEPTED |
|                                                 |             | 0.429 | 0.434 | 0.427      | 0.421 |           | ACCEPTED |
|                                                 |             | 0.417 | 0.428 | 0.424      | 0.452 |           | ACCEPTED |
| 3                                               | BOTTOM NECK | 0.601 | 0.610 | 0.604      | 0.609 | 0.500     | ACCEPTED |

All Measurements in Inches

| Equipment Details                 |                       |            |                   |            |                                   | Technical Details               |                                      |
|-----------------------------------|-----------------------|------------|-------------------|------------|-----------------------------------|---------------------------------|--------------------------------------|
| Equipment:                        | AC/DC Yoke Test Block | Equipment: | Digital Lux Meter | Equipment: | AC/DC Yoke PERMANET HAND MAGNATIC | Magnetic Particle Concentration | 1.2 to 2.4 ml/100 ml                 |
| Serial No:                        | 1657                  | Serial No: | 2722003           | Serial No: | PY - 02                           | Method                          | Wet Magnetic Particle Testing (WMPT) |
| Cal. Date:                        | 14-OCT-2024           | Cal. Date: | 16-OCT-2024       | Cal. Date: | 14-OCT-2024                       |                                 |                                      |
| Equipment:                        | Thickness Gauge       | Serial No: | 5500391           | Cal. Date: | 14-OCT-2024                       |                                 |                                      |
| Equipment:                        | TEST BLOCK            | Serial No: | NoBo5087          | Cal. Date: | 15-OCT-2024                       | WMPT Light Intensity            | 3650 Lux                             |
| Black Magnetic Ink Manufacture:   | 7 HF                  | Magnaflux  | Batch No:         | 220605     | Expiry Date:                      |                                 |                                      |
| White Contrast Paint Manufacture: | WCP 2                 | Magnaflux  | Batch No:         | 220602     | Expiry Date:                      | June-2025                       |                                      |

|                  | INSPECTED & PREPARED BY              | REVIEWED & APPROVED BY                | CLIENT SIGNATURE & STAMP |
|------------------|--------------------------------------|---------------------------------------|--------------------------|
| NAME:            | Aizaz Farhat<br>LEEA<br>NDT LEVEL II | Ashraf Elsaid<br>LEEA<br>NDT LEVEL II |                          |
| DESIGNATION      | Inspector                            | Supervisor                            |                          |
| SIGNATURE & SEAL |                                      |                                       |                          |

REV: 01 Dated: 20 June 2022

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|                                  |                                                                    |                           |                          |
|----------------------------------|--------------------------------------------------------------------|---------------------------|--------------------------|
| <b>Client</b>                    | <b>HALLIBURTON</b>                                                 | <b>Report No:</b>         | QC-24-06/HALL-HPS-07/C13 |
| <b>Item Description</b>          | AIR TANKS                                                          | <b>Job No:</b>            | QC-24-06/HALL-HPS-07     |
| <b>General Scope of Activity</b> | Coiled Tubing Unit-7 AIR TANKS STRUCTURE, TANKS UTT                | <b>Date of Inspection</b> | 01-NOV-2024              |
| <b>Place of Inspection</b>       | HPS Yard                                                           | <b>Valid Until:</b>       | <b>30-MAY-2025</b>       |
| <b>Reference Standards:</b>      | ASTM E797 & ASTM E709 & ASTM E 1444 (2016) ASME V Article 7 (2019) |                           |                          |

This is to certify that the undersigned did at the request of Halliburton, Al Burjesia Base attend their facilities at HPS Department on 01-NOV-2024 in order to carry out the scope of services as described below.

### 1.0 Scope of Activity:

- 1.1) Visual Inspection of Coil Tubing Unit – **AIR TANKS STRUCTURE**
- 1.2) Magnetic Particle Inspection (MPI).
- 1.3) Ultrasonic Thickness Testing (UTT)
- 1.4) Review of maintenance records and Previous reports
- 1.5) Issue of Report.

### 2.0 Summary of Inspection:

- 2.1) Thorough visual inspection of Coil Tubing Unit- **AIR TANKS**, was carried out and found satisfactory.
- 2.2) MPI was performed on accessible **Structure welds**. The result was found satisfactory.
- 2.3) Ultrasonic Thickness Testing was carried out on **LEFT SIDE, BOADY & RIGHT SIDE**. The result was found satisfactory.
- 2.4) The maintenance record of the vehicle was reviewed.

### 3.0 Identification of item(s) verified & Details of Inspection:

#### A) AIR TANKS

|                  |                                                                       |
|------------------|-----------------------------------------------------------------------|
| <b>ID No</b>     | CTU-07-T-01, CTU-07-T-02<br>CTU-07-T-03, CTU-07-T-04,<br>CTU-07-T-05, |
| <b>Location:</b> | Coiled Tubing Unit – CTU-07                                           |

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### 3.1) Visual Inspection:

- The visual Inspection of the Coil Tubing Unit- **AIR TANKS STRUCTURE** was carried out as follows:
- The **Structure welds** of the Unit were inspected and NO visible damages observed
- No visual damages on **Painting** were observed on the external surfaces.

**FINAL RESULT: PASS**

### 3.2) Magnetic Particle Inspection (MPI):

Magnetic particle Inspection was performed on the following components.:

- Accessible **Structure Welds**

**FINAL RESULT: PASS**

### 3.3) ULTRASONIC THICKNESS TESTING (UTT):

Ultrasonic Thickness Testing was performed on the following components.:

- Left Side plate
- Middle Body
- Right Side plate

**FINAL RESULT: PASS**

### 3.4) Review of maintenance Record:

The maintenance records and test reports accessories were reviewed and found satisfactory

**FINAL RESULT: PASS**

### 4.0 CONCLUSION:

The above Coil Tubing Unit- **AIR TANKS** was found to be in satisfactory condition after carrying out necessary inspection and tests subjected to proper maintenance according to manufacturer recommendation.






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|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                 |       |            |            |                    |                    |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------|-------|------------|------------|--------------------|--------------------|----------|
| <br><br><br><br><br><br><br><br> | Ultrasonic Thickness Test of Air Tank |                 |       |            | Serial No: |                    | <b>CTU-07-T-01</b> |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | SECTION         | 0*    | 90*        | 180*       | 270*               | OEM Min            | Result   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                     | LEFT SIDE NECK  | 0.123 | 0.118      | 0.121      | 0.132              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                                     | MIDDLE          | 0.109 | 0.113      | 0.105      | 0.114              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                 | 0.115 | 0.112      | 0.102      | 0.117              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                                     | RIGHT SIDE NECK | 0.121 | 0.127      | 0.133      | 0.129              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ultrasonic Thickness Test of Air Tank |                 |       |            | Serial No: |                    | <b>CTU-07-T-02</b> |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | SECTION         | 0*    | 90*        | 180*       | 270*               | OEM Min            | Result   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                     | LEFT SIDE NECK  | 0.125 | 0.133      | 0.127      | 0.118              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                                     | MIDDLE          | 0.108 | 0.112      | 0.107      | 0.115              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                 | 0.113 | 0.101      | 0.123      | 0.117              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                                     | RIGHT SIDE NECK | 0.132 | 0.128      | 0.138      | 0.126              |                    | ACCEPTED |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ultrasonic Thickness Test of Air Tank |                 |       |            | Serial No: |                    | <b>CTU-07-T-03</b> |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SECTION                               | 0*              | 90*   | 180*       | 270*       | OEM Min            | Result             |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LEFT SIDE NECK                        | 0.137           | 0.129 | 0.124      | 0.134      |                    | ACCEPTED           |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MIDDLE                                | 0.113           | 0.106 | 0.115      | 0.103      |                    | ACCEPTED           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | 0.117           | 0.109 | 0.111      | 0.116      |                    | ACCEPTED           |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RIGHT SIDE NECK                       | 0.128           | 0.122 | 0.134      | 0.112      |                    | ACCEPTED           |          |
| Ultrasonic Thickness Test of Air Tank                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                 |       | Serial No: |            | <b>CTU-07-T-04</b> |                    |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SECTION                               | 0*              | 90*   | 180*       | 270*       | OEM Min            | Result             |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LEFT SIDE NECK                        | 0.132           | 0.135 | 0.128      | 0.131      |                    | ACCEPTED           |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MIDDLE                                | 0.109           | 0.111 | 0.113      | 0.105      |                    | ACCEPTED           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | 0.112           | 0.115 | 0.107      | 0.117      |                    | ACCEPTED           |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RIGHT SIDE NECK                       | 0.134           | 0.136 | 0.128      | 0.127      |                    | ACCEPTED           |          |
| Ultrasonic Thickness Test of Air Tank                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                 |       | Serial No: |            | <b>CTU-07-T-05</b> |                    |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SECTION                               | 0*              | 90*   | 180*       | 270*       | OEM Min            | Result             |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | LEFT SIDE NECK                        | 0.136           | 0.127 | 0.132      | 0.126      |                    | ACCEPTED           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MIDDLE                                | 0.112           | 0.107 | 0.119      | 0.110      |                    | ACCEPTED           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | 0.104           | 0.113 | 0.117      | 0.109      |                    | ACCEPTED           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RIGHT SIDE NECK                       | 0.137           | 0.131 | 0.130      | 0.129      |                    | ACCEPTED           |          |

All Measurement in Inches

**THIS IS TO CERTIFY THAT;** a competent person did attend the above-mentioned owner's work location on the date shown above and the equipment described in this report was tested & inspected as per the requirements of ASTM & Lifting Operations Lifting Equipment Regulation "LOLER". The result was found Satisfactory at the time of Inspection and considered Safe for Lifting.



**AI TAKAMUL COMPANY FOR ENGINEERING TESTS  
AND PROFESSIONAL SAFETY LIMITED**

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| Equipment Details                       |                       |            |                   |              |                                   | Technical Details               |                                      |
|-----------------------------------------|-----------------------|------------|-------------------|--------------|-----------------------------------|---------------------------------|--------------------------------------|
| Equipment:                              | AC/DC Yoke Test Block | Equipment: | Digital Lux Meter | Equipment:   | AC/DC Yoke PERMANET HAND MAGNATIC | Magnetic Particle Concentration | 1.2 to 2.4 ml/100 ml                 |
| Serial No:                              | 1657                  | Serial No: | 2722003           | Serial No:   | PY - 02                           | Method                          | Wet Magnetic Particle Testing (WMPT) |
| Cal. Date:                              | 14-OCT-2024           | Cal. Date: | 16-OCT-2024       | Cal. Date:   | 14-OCT-2024                       |                                 |                                      |
| Equipment:                              | Thickness Gauge       | Serial No: | 5500391           | Cal. Date:   | 14-OCT-2024                       |                                 |                                      |
| Equipment:                              | TEST BLOCK            | Serial No: | NoBo5087          | Cal. Date:   | 15-OCT-2024                       |                                 |                                      |
| Black Magnetic Ink Manufacture: 7 HF    | Magnaflux             | Batch No:  | 220605            | Expiry Date: | July-2025                         | WMPT Light Intensity            | 3650 Lux                             |
| White Contrast Paint Manufacture: WCP 2 | Magnaflux             | Batch No:  | 220602            | Expiry Date: | June-2025                         |                                 |                                      |

|                  | INSPECTED & PREPARED BY              | REVIEWED & APPROVED BY                | CLIENT SIGNATURE & STAMP |
|------------------|--------------------------------------|---------------------------------------|--------------------------|
| NAME:            | Aizaz Farhat<br>LEEA<br>NDT LEVEL II | Ashraf Elsaid<br>LEEA<br>NDT LEVEL II |                          |
| DESIGNATION      | Inspector                            | Supervisor                            |                          |
| SIGNATURE & SEAL |                                      |                                       |                          |

REV: 01 Dated: 20 June 2022

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