

# AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

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## ULTRASONIC FLAW DETECTION X-OVER INSPECTION CERTIFICATE

|                                                   |                                                                                                                                                                                      |                        |                                                                                                                     |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------|
| Client Name:                                      | ZHONGMAN PETROLEUM ENGINEERING TECHNOLOGY (HONG KONG) CO LIMITED IRAQ                                                                                                                | Report No.:            | ZPEC-25-QC-24-05-UFD-007                                                                                            |
| Acceptance Creater:                               | DS-1 Fifth Edition, Volume 3 CAT 5-3                                                                                                                                                 | Date of Inspection:    | 12.MAR.2024                                                                                                         |
| Work Location:                                    | RU-612                                                                                                                                                                               | RIG NAME:              | ZPEC 25                                                                                                             |
| TEST EQUIPMENT & CONSUMABLE DETAILS               |                                                                                                                                                                                      |                        |                                                                                                                     |
| EQ. Manufacturer/ Model:                          | Sonatest/ D-50                                                                                                                                                                       | EQ. Serial No:         | I017374                                                                                                             |
| Calibration Due Date:                             | 15.AUG.2024                                                                                                                                                                          | Couplant:              | UT Gel                                                                                                              |
| Calibration Block Type:                           | V1 (SR # 506233)                                                                                                                                                                     | Calibration Due Date:  | 15.AUG.2024                                                                                                         |
| Transducer Angle:                                 | 90 DEG, 60 DEG, 45 DEG                                                                                                                                                               | Transducer Frequency:  | 4 MHz/ SR. 13737                                                                                                    |
| Range:                                            | 100 mm                                                                                                                                                                               | Reference dB:          | 42 dB                                                                                                               |
| Area Scanned:                                     | Connections                                                                                                                                                                          | Material Velocity:     | 3250 m/s, 5900 m/s                                                                                                  |
| White Contrast WCP-2                              | Batch #: 180301 Manufacture: Magnaflux Exp Date: 2024                                                                                                                                | Technical Details      | Wet Visible Continuous                                                                                              |
| Black Ink 7HF                                     | Batch #: 171001 Manufacture: Magnaflux Exp Date: 2024                                                                                                                                | Coil 1200 Amp-Turns/in | SC 22713 Cal.14.FEB.2024 Cal Due15.AUG.2024                                                                         |
| Fluorescent 14HF                                  | Batch #: 180303 Manufacture: Magnaflux Exp Date: 2024                                                                                                                                | A.C Hand Yoke          | 201504053 Cal.14.FEB.2024 Cal Due15.AUG.2024                                                                        |
| Intensity Meter                                   | SR# R.043943 Cal.14.FEB.2024 Cal Due 15.AUG.2024                                                                                                                                     | UV Black Light         | SR#1900084 Cal.14.FEB.2024 Cal Due15.AUG.2024                                                                       |
| LEAD GAGE                                         | S SR#AH07KF0027 GAEMAKER LG-5003 CAL.Date. 14.FEB.2024 CAL Due Date 15.AUG.2024                                                                                                      | THREAD PROFILE GAGE    | SR#21336 CAL.Date.14. FEB. 2024 CAL Due Date.15. AUG. 2024 SR#21335 CAL.Date.14. FEB.2024 CAL Due Date. 15.AUG.2024 |
| Magnetic Particle Fluorescent 14HF Concentration: | 0.1 To 0.4 ML / 100 ML                                                                                                                                                               | WMPT Light Intensity:  | 3450Lux                                                                                                             |
| Methodology:                                      | <ul style="list-style-type: none"> <li>Through Visual inspection</li> <li>Dimensional 3</li> <li>Ultrasonic Flaw Detection</li> <li>MPI inspection with Ultraviolet Light</li> </ul> |                        |                                                                                                                     |

| Serial No.   | Description | Connection                                                                |      | Result Inspection |      |      | Dimensional-3 Inspection |         |           |           |           |             |        |          |          |           |           |             |               |
|--------------|-------------|---------------------------------------------------------------------------|------|-------------------|------|------|--------------------------|---------|-----------|-----------|-----------|-------------|--------|----------|----------|-----------|-----------|-------------|---------------|
|              |             |                                                                           |      |                   |      |      | Pin                      |         |           |           |           |             | Box    |          |          |           |           |             | Body          |
|              |             | Pin                                                                       | Box  | Pin               | Box  | Body | OD(In)                   | ID(In)  | SRG ϕ(In) | SRG Ϙ(In) | Pin λ(In) | Bevel ϕ(In) | OD(In) | CB ϕ(In) | CB δ(In) | BBD ϕ(In) | BBL δ(In) | Bevel ϕ(In) | Overall λ(In) |
| MJS2302450   | X-OVER      | 6 5/8 REG                                                                 | NC50 | Acc.              | Acc. | Acc. | 8''                      | 2 7/8'' | 5 3/8''   | 13/16''   | 5''       | 7 ½''       | 8''    | 5 5/16'' | 5/8      | 4 5/8''   | 8''       | 6 7/16''    | 36''          |
| Conclusion : |             | * 01 X-OVER Were Found “Accepted” At The Time Of Inspection Ready To Use. |      |                   |      |      |                          |         |           |           |           |             |        |          |          |           |           |             |               |

|              |                        |       |                    |     |                      |      |               |       |               |        |                |
|--------------|------------------------|-------|--------------------|-----|----------------------|------|---------------|-------|---------------|--------|----------------|
| OD           | Outside Diameter       | ID    | Inside Diameter    | SRG | Stress Relief Groove | CB   | Counter Bore  | BB    | Bore Back     | FB     | Float Bore     |
| ϕ            | Diameter               | λ     | Length             | ϖ   | Width                | δ    | Depth         | NP.   | Not Present   | NA.    | Not Applicable |
| EGR          | Elevator Groove Recess | SGR   | Slip Groove Recess | CR  | Crack                | B    | Bent          | PC    | Premium Class | RF     | Reface         |
| GT           | Galled Thread          | TP    | Thread Pitting     | SP  | Seal Pitting         | TD   | Thread Damage | SD    | Seal Damage   | M      | Mashed         |
| 1            | 100 % Coating          | 2     | 99-71 % Coating    | 3   | 70-40 % Coating      | 4    | Up to 40 %    | 5     | Nil           | WT     | Wall Thickness |
| Colors Code: |                        | White | No Defects         | Red | Crack or Extreme     | Blue | Damage        | Green | Seal Damage   | Yellow | ACFM           |

|                         |                       |                    |         |                                         |            |                     |  |
|-------------------------|-----------------------|--------------------|---------|-----------------------------------------|------------|---------------------|--|
| Inspector Name:         | RAO SOHAIL            | Review By          |         |                                         |            |                     |  |
| Qualification:          | ASNT Level II (MT PT) | Senior Inspector:  | M.FAHAD | Supervisor:                             | WAQAS AWAN | Customer Name:      |  |
| Signature:              |                       |                    |         |                                         |            | Customer Signature: |  |
| Original - Client Files |                       | Copy - Area Office |         | QC/FN/DJ-PB/029 Rev.00 dated 07.Nov2021 |            |                     |  |

