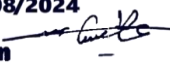


AI TAKAMUL COMPANY FOR ENGINEERING TESTS  
AND PROFESSIONAL SAFETY LIMITED  
Basra, North Rumaila, Quality Control Yard - Iraq



| CERTIFICATION OF VISUAL THOROUGH EXAMINATION & DYE PENETRANT INSPECTION                                    |                                                                |                      |                   |                                       |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------|-------------------|---------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Client:</b>                                                                                             | HALLIBURTON (WPS)                                              |                      |                   | <b>Report No:</b>                     | QC-24-07-31/WPS-01                                              |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>Location:</b>                                                                                           | HALLIBURTON WORKSHOP WPS                                       |                      |                   | <b>Job Number:</b>                    | 310724                                                          |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>Date:</b>                                                                                               | Wednesday, July 31, 2024                                       |                      |                   | <b>Next Inspection Date:</b>          | Wednesday, July 30, 2025                                        |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>Type Of Inspection:</b>                                                                                 | VISUAL , THOROUGH EXAMINATION & DYE PENETRANT INSPECTION (DPI) |                      |                   | <b>ACCEPTANCE CRITERIA</b>            | ASTM E165/E165M ,ASTM E1417/E1417M ,EN ISO 3452-1,EN ISO 3452-2 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                          |                                                                |                      |                   | <b>Halliburton Doc</b>                | Halliburton Doc. D01384094,D00477475                            |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>UNIT DESCRIPTION:</b>              | 14" SHEAVE                                                      |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>UNIT S/N:</b>                      | 0881380                                                         |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>SAP NO:</b>                        | 12798756                                                        |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>WORKING LOAD</b>                   | 6 TON                                                           |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>INSPECTION RESULT :</b>            |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>VISUAL , THOROUGH EXAMINATION</b>  |                                                                 | Above Item fully inspected and found freedom from deforms, cracks, corrosion & mechanical damage                                                                            |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>DYE PENETRANT INSPECTION (DPI)</b> |                                                                 | Grooves areas inspected and found freedom from cracks and other defects                                                                                                     |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>FINAL RESULTS</b>                  |                                                                 | Above Item found satisfactory and free of defects at the time of inspection                                                                                                 |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   | <b>TECHNICAL DETAILS</b>              |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| TECHNIQUE 2 - TYPE II VISIBLE, METHOD 'A' WATER -WASHABLE                                                  |                                                                |                      |                   |                                       |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>PENETRANT DWELL TIME:</b>                                                                               |                                                                | 30 minutes           |                   | <b>DEVELOPER DWELL TIME:</b>          |                                                                 | 15 minutes                                                                                                                                                                  |                                |                          |                                                                                                                                                                                     |
| <b>Test Part Temperature:</b>                                                                              |                                                                | 115 °F               |                   | <b>WHITE LIGHT INTENSITY:</b>         |                                                                 | 3550 LUX                                                                                                                                                                    |                                |                          |                                                                                                                                                                                     |
|                                                                                                            |                                                                |                      |                   |                                       |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>EQUIPMENT DETAILS</b>                                                                                   |                                                                |                      |                   |                                       |                                                                 | <b>PERSONNEL DETAILS</b>                                                                                                                                                    |                                | <b>REVIEW BY</b>         |                                                                                                                                                                                     |
| <b>EQUIPMENT :</b>                                                                                         | COMPARATOR BLOCK                                               | <b>EQUIPMENT :</b>   | Digital Lux Meter | <b>EQUIPMENT :</b>                    | INFRARED THERMOMETER                                            | <b>INSPECTOR NAME:</b>                                                                                                                                                      | M.Shahzad Ahmed                | <b>SENIOR INSPECTOR:</b> | NAVEED HUSSAIN                                                                                                                                                                      |
| <b>S.N:</b>                                                                                                | 11223                                                          | <b>S.N:</b>          | 2722003           | <b>S.N:</b>                           | 201704125                                                       | <b>QUALIFICATION:</b>                                                                                                                                                       | ASNT LEVEL II MT & PT& VT & UT | <b>SUPERVISOR:</b>       | HANI ALI                                                                                                                                                                            |
| <b>Cal Due Date:</b>                                                                                       | 16,OCT,2024                                                    | <b>Cal Due Date:</b> | 16,OCT,2024       | <b>Cal Due Date:</b>                  | 16,OCT,2024                                                     |   | <b>SIGNATURE:</b>              | <b>CLIENT:</b>           | <b>ALI Talib HB48903</b><br><b>Date: 01/08/2024</b><br><b>Signature</b> <br><b>Halliburton</b> |
| <b>Red Penetrant Manufacture:</b>                                                                          | Magnaflux                                                      | <b>Batch No:</b>     | 220511            | <b>EXPIRE DATE:</b>                   | May,2025                                                        |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>Developer Manufacture:</b>                                                                              | Magnaflux                                                      | <b>Batch No:</b>     | 220302            | <b>EXPIRE DATE:</b>                   | March,2025                                                      |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| <b>WATER PRESSURE</b>                                                                                      | 30 PSI                                                         | <b>P. GAUGE</b>      | SSR825            | <b>DUE CAL DATE:</b>                  | 18,AUG,2024                                                     |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |
| Original - Client Files      Copy - Area Office      QC/FN/DPI/NDT/022      Rev.00      Dated: 07 Nov 2021 |                                                                |                      |                   |                                       |                                                                 |                                                                                                                                                                             |                                |                          |                                                                                                                                                                                     |

## CERTIFICATION OF VISUAL, THOROUGH EXAMINATION & MAGNETIC PARTICLE INSPECTION

|                            |                                                              |                              |                                                        |
|----------------------------|--------------------------------------------------------------|------------------------------|--------------------------------------------------------|
| <b>Client:</b>             | HALLIBURTON (WPS)                                            | <b>Report No:</b>            | QC-24-07/WPS-003A                                      |
| <b>Location:</b>           | HALLIBURTON WORKSHOP WPS                                     | <b>Job Number:</b>           | 310724                                                 |
| <b>Date:</b>               | Wednesday, July 31, 2024                                     | <b>Next Inspection Date:</b> | Wednesday, July 30, 2025                               |
| <b>Type Of Inspection:</b> | VISUAL , THOROUGH EXAMINATION & MAGNETIC PARTICLE INSPECTION | <b>Specification:</b>        | ASTM E709 & ASTM E 1444 (2016) ASME V Article 7 (2019) |

|                                                                                   |                                      |                                                                                         |
|-----------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------|
|  | <b>Halliburton Doc</b>               | Halliburton Doc. D01384094,D00477475                                                    |
|                                                                                   | <b>UNIT DESCRIPTION:</b>             | 14" SHEAVE BLOCK ASSEMBLY                                                               |
|                                                                                   | <b>UNIT S/N:</b>                     | 0881380                                                                                 |
|                                                                                   | <b>SAP NO:</b>                       | 12798756                                                                                |
|                                                                                   | <b>WORKING LOAD</b>                  | 6 TON                                                                                   |
|                                                                                   | <b>INSPECTION RESULT :</b>           |                                                                                         |
|                                                                                   | <b>VISUAL , THOROUGH EXAMINATION</b> | unit fully inspected and found free from deforms, cracks, corrosion & mechanical damage |
|                                                                                   | <b>MAGNETIC PARTICLE INSPECTION</b>  | forgn areas inspected and found free from cracks and other defects                      |
|                                                                                   | <b>FINAL RESULTS</b>                 | unit found satisfactory and free of defects at the time of inspection                   |
|                                                                                   | <b>COMMENT:</b>                      |                                                                                         |
| Magnetic Particle Inspection With A/C Hand Yoke , Black & White Contrast          |                                      |                                                                                         |



| EQUIPMENT DETAILS                       |                                        |                      |                                       |                                        |                             | PERSON DETAILS                |                                                                                       | REVIEW BY                |                          |
|-----------------------------------------|----------------------------------------|----------------------|---------------------------------------|----------------------------------------|-----------------------------|-------------------------------|---------------------------------------------------------------------------------------|--------------------------|--------------------------|
| <b>Equipment:</b>                       | AC-Yoke Test Block                     | <b>Equipment:</b>    | Digital Lux Meter                     | <b>Equipment:</b>                      | AC/DC Yoke                  | <b>INSPECTOR NAME:</b>        |  | <b>SENIOR INSPECTOR:</b> | ASHRAF ELSAID            |
| <b>S.No:</b>                            | 1657                                   | <b>S.No:</b>         | 2722003                               | <b>S.No:</b>                           | 201504052                   | <b>INSPECTOR NAME:</b>        |                                                                                       |                          |                          |
| <b>Cal Due Date:</b>                    | 14-Oct-24                              | <b>Cal Due Date:</b> | 16-Oct-24                             | <b>Cal Due Date:</b>                   | 14-Oct-24                   | <b>QUALIFICATION</b>          |                                                                                       | <b>SUPERVISOR:</b>       | HANI ALI                 |
| <b>Black Magnetic Ink Manufacture:</b>  | Magnaflux                              | <b>Batch No:</b>     | 220605                                | <b>Expiry Date:</b>                    | JULY.2025                   | <b>ASNT LEVEL II</b>          |                                                                                       |                          |                          |
| <b>Whie Contrast Paint Manufacture:</b> | Magnaflux                              | <b>Batch No:</b>     | 220602                                | <b>Expiry Date:</b>                    | JUN.2025                    | <b>MT &amp; PT &amp; VT</b>   |                                                                                       |                          |                          |
| <b>Technical Details:</b>               | <b>Magnetic Partical Concentration</b> |                      | <b>Method</b>                         |                                        | <b>WMPT Light Intensity</b> | <b>STAMP &amp; SIGNATURE:</b> |                                                                                       | <b>CLIENT:</b>           | <b>ALI Talib HB48903</b> |
|                                         | 1.2 to 2.4 ml/100 ml                   |                      | wet magnetic Particle Testing (A/MPT) |                                        | 3630 Lux                    |                               |                                                                                       |                          | <b>Date: 01/08/2024</b>  |
| Original - Client Files                 |                                        | Copy - Area Office   |                                       | QC/FN/MPI/065 Rev.00 DATED 07 Nov 2021 |                             |                               |                                                                                       |                          |                          |
| Original - Client Files                 |                                        | Copy - Area Office   |                                       | QC/FN/MPI/065 Rev.00 DATED 07 NOV 2021 |                             |                               |                                                                                       |                          |                          |



14 INCH SHEAVE BLOCK ANNUALLY INSPECTION CERTIFICATE

|                     |                                  |                          |                          |  |
|---------------------|----------------------------------|--------------------------|--------------------------|--|
| Customer:           | HALLIBURTON (WPS)                | Date of Inspection:      | 31.JULY.2024             |  |
| Location:           | Burjesia Halliburton Basra -Iraq | Next Date of Inspection: | 30.JULY.2025             |  |
| Type Of Inspection: | EXTENDED MAINTENANCE CHECKS      | Report No.:              | QC-24-07-WPS-003B        |  |
| Speciation:         | API RP 9B / ASTM E709/ASTM E165  | Halliburton Document No: | D00477475,<br>D01384094. |  |
| SERIAL NO.          | 0881380                          | SAP NO                   | 12798756                 |  |

PROCEDURE

|               |                                                       |
|---------------|-------------------------------------------------------|
| Equipment :   | 14 INCH SHEAVE BLOCK ASSEMBLY 14 IN-<br>7/32” - CABLE |
| SN:           | 0881380                                               |
| Ref Standard: | API RP 9B / ASTM E709/ASTM E165                       |
| SAP No:       | 12798756                                              |

Sheave Wheels & Pins with The following specification:.

|                       |          |
|-----------------------|----------|
| QTY:                  | 01       |
| Inspection Frequency: | Annually |
| Rated Capacity:       | 6 TON    |
| Wire Rope Diameter:   | 7/32”    |
| Sheaves Size :        | 14 Inch  |

Remarks:

Detailed reports are attached detailing all readings and results in -01 of 05- pages.

ALI Talib HB48903

Date: 01/08/2024

Signature  
Haliburton

Inspector: RAO SHAHIL

Supervisor: HANI ALI



AI TAKAMUL COMPANY FOR ENGINEERING TESTS  
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Tel: +9647810009138 / +9647834964657

Email: [OP@qualitycontrol-iraq.com](mailto:OP@qualitycontrol-iraq.com) / [hany.akafi@qualitycontrol-iraq.com](mailto:hany.akafi@qualitycontrol-iraq.com)



14 INCH SHEAVE BLOCK ANNUALLY INSPECTION CERTIFICATE

|                     |                                  |                          |                          |  |
|---------------------|----------------------------------|--------------------------|--------------------------|--|
| Customer:           | HALLIBURTON (WPS)                | Date of Inspection:      | 31.JULY.2024             |  |
| Location:           | Burjesia Halliburton Basra -Iraq | Next Date of Inspection: | 30.JULY.2025             |  |
| Type Of Inspection: | EXTENDED MAINTENANCE CHECKS      | Report No.:              | QC-24-07-WPS-003B        |  |
| Speciation:         | API RP 9B / ASTM E709/ASTM E165  | Halliburton Document No: | D00477475,<br>D01384094. |  |
| SERIAL NO.          | 0881380                          | SAP NO                   | 12798756                 |  |

PROCEDURE

- The Products Have Been Inspected and Found Them Conformable to Relevant

- 01- Wash thoroughly to remove all of the dirt and mud.
- 02- Does not direct high pressure spray onto the face of bearings to prevent water displacing of the grease.
- 03- Make a visual inspection, check for no evidence of corrosion, cracks or fractures on the wheel frame that undermine its operational capabilities or safety. Inspect the cable groove all around the sheave wheel.
- 04- Using the Sheave Gauge and using as reference the Sheave Groove Inspection guidelines D01026300 determine if the groove is in specifications. If worn too much, it will begin to wear the cable unevenly. The sheave should be changed if this is the case.
- 05- Check that the nameplate is intact and legible.
- 06- Rotate sheave freely and crack for wobble. Any excessive play could indicate a worn or damaged bearing. This must be repaired by replacing the sheave wheel, bearing assembly or the shaft.
- 07- The maximum allowance for reduction of a product's original dimension due to wear or repair before removal from service is:
- 08- Any single direction – No more than 10% of original dimension.
- 09- Two direction – no more than 5% of each dimension.
- 10- Any crack or deformation in a component is sufficient cause to remove from service.
- 11- Deformation in side plates, pins and axles, fitting attachment points, trunnions, etc. deformation can be cause by abusive service and / or overload and may be a cause to remove block or sheave from service.
- 12- Wash thoroughly to remove all of the dirt and mud.

INSPECTION RESULT

**\*\* Visual, MPI & DPT was carried out on the available critical areas of the Sheaves & Pins and found Accept at the time of inspection**

Remarks:

Detailed reports are attached detailing all readings and results in -02 of 05- pages.

**ALI Talib HB48903**

**Date: 01/08/2024**

**Signature  
Haliburton**

Inspector: **RAO SHAIL**

Supervisor:

**HANI ALI**





14 INCH SHEAVE BLOCK ANNUALLY INSPECTION CERTIFICATE

|                     |                                  |                          |                          |  |
|---------------------|----------------------------------|--------------------------|--------------------------|--|
| Customer:           | HALLIBURTON (WPS)                | Date of Inspection:      | 31.JULY.2024             |  |
| Location:           | Burjesia Halliburton Basra -Iraq | Next Date of Inspection: | 30.JULY.2025             |  |
| Type Of Inspection: | EXTENDED MAINTENANCE CHECKS      | Report No.:              | QC-24-07-WPS-003B        |  |
| Speciation:         | API RP 9B / ASTM E709/ASTM E165  | Halliburton Document No: | D00477475,<br>D01384094. |  |
| SERIAL NO.          | 0881380                          | SAP NO                   | 12798756                 |  |

Depth Measurements of 30 Inch Sheaves Wheel

| SHEAVE NO: | WIRE ROPE DIA: | ACTUAL GROOVE DEPT. | MIN ALLOWABLE GROOVE DEPT | Result     |
|------------|----------------|---------------------|---------------------------|------------|
| 0881380    | 5.53 mm        | 9.45 mm             | 7.088 mm                  | ACCEPTABLE |

Radius Measurements of 30 Inch Sheaves Wheel

| SHEAVE NO: | WIRE ROPE DIA: | ACTUAL GROOVE RADIUS. | GROOVE RADIUS MINI WORN. | GROOVE RADIUS MINI NEW. | GROOVE RADIUS MAXI. | Result     |
|------------|----------------|-----------------------|--------------------------|-------------------------|---------------------|------------|
| 0881380    | 5.53 mm        | 2.93 mm               | 2.834 mm                 | 2.930 mm                | 3.041 mm            | ACCEPTABLE |

Remarks:

Detailed reports are attached detailing all readings and results in -03 of 05- pages.



ALI Talib HB48903

Date: 01/08/2024

Signature

Halliburton

Supervisor: HANI ALI

Inspector: RAO SHAH



# AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED

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## 14 INCH SHEAVE BLOCK ANNUALLY INSPECTION CERTIFICATE

|                     |                                  |                          |                          |  |
|---------------------|----------------------------------|--------------------------|--------------------------|--|
| Customer:           | HALLIBURTON (WPS)                | Date of Inspection:      | 31.JULY.2024             |  |
| Location:           | Burjesia Halliburton Basra -Iraq | Next Date of Inspection: | 30.JULY.2025             |  |
| Type Of Inspection: | EXTENDED MAINTENANCE CHECKS      | Report No.:              | QC-24-07-WPS-003B        |  |
| Speciation:         | API RP 9B / ASTM E709/ASTM E165  | Halliburton Document No: | D00477475,<br>D01384094. |  |
| SERIAL NO.          | 0881380                          | SAP NO                   | 12798756                 |  |

### Pictorial



3

**ALI Talib HB48903**

**Date: 01/08/2024**

**Remarks:**

*Detailed reports are attached detailing all readings and results in -04 of 05- pages.*

**Signature  
Halliburton**

**Inspector:** RAO SHAH

**Supervisor:**

HANI ALI



14 INCH SHEAVE BLOCK ANNUALLY INSPECTION CERTIFICATE

|                     |                                  |                          |                          |                                                                                     |
|---------------------|----------------------------------|--------------------------|--------------------------|-------------------------------------------------------------------------------------|
| Customer:           | HALLIBURTON (WPS)                | Date of Inspection:      | 31.JULY.2024             |  |
| Location:           | Burjesia Halliburton Basra -Iraq | Next Date of Inspection: | 30.JULY.2025             |                                                                                     |
| Type Of Inspection: | EXTENDED MAINTENANCE CHECKS      | Report No.:              | QC-24-07-WPS-003B        |                                                                                     |
| Speciation:         | API RP 9B / ASTM E709/ASTM E165  | Halliburton Document No: | D00477475,<br>D01384094. |                                                                                     |
| SERIAL NO.          | 0881380                          | SAP NO                   | 12798756                 |                                                                                     |

Pictorial



Remarks:

Detailed reports are attached detailing all readings and results in -05 of 05- pages.

**ALI Talib HB48903**

**Date: 01/08/2024**

**Signature  
Halliburton**

HANI ALI

Inspector:

RAO SHAHIL

Supervisor:

