



# ULTRASONIC REPORT

## CLIENT INFO

|                     |  |                 |                     |              |               |
|---------------------|--|-----------------|---------------------|--------------|---------------|
| CUSTOMER / CLIENT:  | RARE OILFIELD SERVICES                     | CLIENT JOB NO.: |                     | REPORT NO. : | 231214-UDT-2  |
| CONTRACTOR:         |  | CLIENT CODING:  |                     | PAGE:        | 1 OF 2        |
| PROJECT:            | UT ON FUEL GAS SCRUBBER A0435074           |                 |                     | DATE:        | 14-Dec-23     |
| LOCATION / LSD:     | TWIST OILFIELD MANUFACTURING, STETTLER, AB |                 |                     | TECHNICIAN:  | DUSTIN TUCKER |
| CODE / CLIENT SPEC: | ASME VIII Div. 1 / ASME V Art. 5 (2021)    | APPROVER:       | TYLER HEBBLETHWAITE | ASSISTANT:   |               |

## METHOD

|                            |  |                  |          |   |           |                  |
|----------------------------|--|------------------|----------|---|-----------|------------------|
| ECHO PROCEDURE:            | RCSS-NDT-UT-006 Rev 01 - Ultrasonic Thickness Measurement Technique - ASME V and ASME SE-797 |                  |          | *Daily Performance Calibration Completed as per T-462.1 |           |                  |
| ECHO PROCEDURE/ADDENDUM:   |  |                  |          |   |           |                  |
| MANUFACTURER / MODEL:      | GE DMS/USM Go  | SERIAL NO:       | 14080021 | LAST CALIBRATION DATE:                                  | 17-Feb-23 |                  |
| MATERIAL TYPE:             | Carbon Steel   | SURF. CONDITION: | Painted  | MATERIAL THICKNESS RANGE:                               | Various   |                  |
| SURFACE(S) INSPECTED FROM: | Outside Surface  | CABLE LENGTH:    | 36"      | COUPLANT TYPE:  | Echogel20 |                  |
| CALIBRATION BLOCK TYPE:    | 1.000" STEP  | CAL. BLOCK SN:   | 13-3270  | CAL. BLOCK TYPE:  |           | DIA / THICKNESS: |
| CALIBRATION BLOCK TYPE:    |  | CAL. BLOCK SN:   |          | CAL. BLOCK TYPE:  |           | DIA / THICKNESS: |

| Transducer MFG | Angle (°) | Mode       | Freq (MHz) | Dia (") | SN      | Range  | Ref Reflector | Ref FSH (%) | Ref dB | Transfer Value | Scan Level |
|----------------|-----------|------------|------------|---------|---------|--------|---------------|-------------|--------|----------------|------------|
| Sonatest       | 0         | Dual Comp. | 5.00MHz    | 0.25"   | 1818/82 | 1.000" | Backwall      | 80          | 56     | N/A            | +6         |
|                |           |            |            |         |         |        |               |             |        |                |            |

## EXAMINATION & TEST RESULTS

**SCOPE:** A ZERO DEGREE ULTRASONIC INSPECTION WAS PERFORMED ON FUEL GAS SCRUBBER A0435074 AS REQUESTED BY THE CLIENT. A LOW AND AVERAGE READING WAS RECORDED AT EACH CML.

### RESULTS:



| TML # | Dia.   | Nom.  | UT Low | UT Avg | % Wall Loss | Comments    |
|-------|--------|-------|--------|--------|-------------|-------------|
| 00    | 8.625" | 0.281 | 0.303  | 0.311  | 0.0%        | Top Head    |
| 05    | 8.625" | 0.322 | 0.316  | 0.324  | 1.9%        | Shell       |
| 10    | 8.625" | 0.322 | 0.309  | 0.319  | 4.0%        | Shell       |
| 15    | 8.625" | 0.322 | 0.304  | 0.317  | 5.6%        | Shell       |
| 20    | 8.625" | 0.281 | 0.295  | 0.307  | 0.0%        | Bottom Head |

## QUANTITIES

|                |                                 |
|----------------|---------------------------------|
| REGULAR TIME:  | FILM:                           |
| OVERTIME:      | CONSUMABLES:                    |
| SHIFT PREMIUM: | EQUIPMENT:                      |
| KILOMETERS:    | EXPENSES:                       |
| SUBSISTENCE:   | MISCELLANEOUS: SEE 231214-FDT-1 |

DUSTIN TUCKER  
SNT-TC-1A / CGSB #17016 UTI / MTII  
API 510 #102375 / ISI-PVPP #001460

## CLIENT APPROVAL:

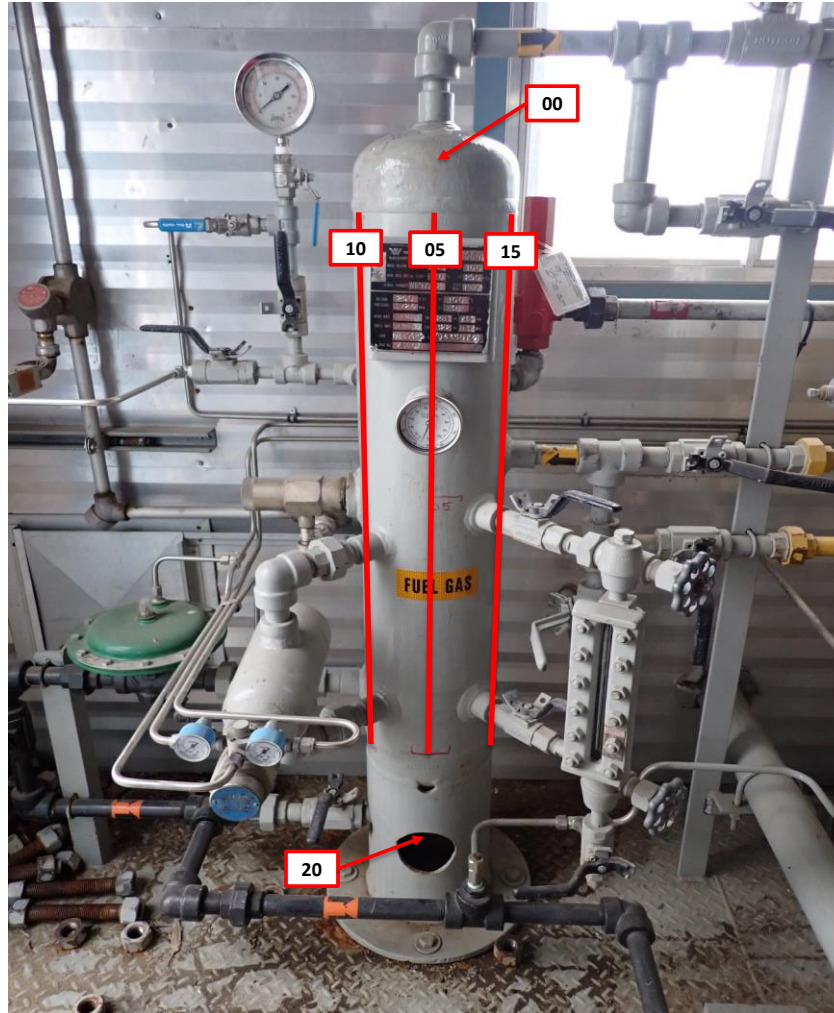


# ULTRASONIC REPORT

## CLIENT INFO

|                     |  |                 |                     |              |               |
|---------------------|--|-----------------|---------------------|--------------|---------------|
| CUSTOMER / CLIENT:  | RARE OILFIELD SERVICES                     | CLIENT JOB NO.: |                     | REPORT NO. : | 231214-UDT-2  |
| CONTRACTOR:         |  | CLIENT CODING:  |                     | PAGE:        | 2 OF 2        |
| PROJECT:            | UT ON FUEL GAS SCRUBBER A0435074           |                 |                     | DATE:        | 14-Dec-23     |
| LOCATION / LSD:     | TWIST OILFIELD MANUFACTURING, STETTLER, AB |                 |                     | TECHNICIAN:  | DUSTIN TUCKER |
| CODE / CLIENT SPEC: | ASME VIII Div. 1 / ASME V Art. 5 (2021)    | APPROVER:       | TYLER HEBBLETHWAITE | ASSISTANT:   |               |

## EXAMINATION & TEST RESULTS





## Vessel External Inspection Report

|   |  |                             |                   |                     |                   |          |
|---|--|-----------------------------|-------------------|---------------------|-------------------|----------|
| Client:   | Rare Oilfield Services   | District:                   | N/A               | Date:               | 14-Dec-2023       |          |
| Surface LSD:  | N/A  | Downhole LSD:               | N/A               | Skid #:             | N/A               |          |
| Description:  | Fuel Gas Scrubber  |                             | RT:               | 3                   | HT:               | N/A      |
| Jur #:  | 0435074  | Equipment #:                | N/A               |                     | CRN:              | N8894.23 |
| MFR:  | Westfab Industries Ltd   | MFR S/N:                    | WF97762           |                     |                   |          |
| NB #:   | N/A  | Year Built:                 | 1997              | O.D.:               | 8.625 in          |          |
| Shell MAWP:   | 250 psi  | Shell MAWT:                 | 100 °F            | Shell MDMT:         | -20 °F            |          |
| Tube MAWP:  | N/A  | Tube MAWT:                  | N/A               | Tube MDMT:          | N/A               |          |
| Shell OP Pressure:  | N/A  | Shell OP Temp:              | N/A               | Manway (size):      | N/A               |          |
| Tube OP Pressure:   | N/A  | Tube OP Temp:               | N/A               | Cor. Allowance:     | 0.0630 in         |          |
| Head Type:  | Ellipsoidal  | Head Material:              | SA-234-WPB        | Head Nominal:       | 0.281 in          |          |
| Shell type:   | Pipe   | Shell Material:             | SA-106-B          | Shell Nominal:      | 0.322 in          |          |
| Status:   | Disconnected   | External Insulation:        | No                | Orientation:        | Vertical          |          |
| <b>External Inspection</b>  |  |                             |                   | <b>SERVICE:</b>     | Sour              |          |
| <b>ITEM:</b>  | <b>CONDITION:</b>  | <b>ITEM:</b>                | <b>CONDITION:</b> |                     |                   |          |
| Vessel Nameplate:   | Good   | Ladders / Platforms:        | N/A               |                     |                   |          |
| Vessel Head:  | Good   | Gauges:                     | Good              |                     |                   |          |
| Vessel Shell:   | Good   | Valves:                     | Good              |                     |                   |          |
| Vessel Paint / Coating:   | Good   | Piping:                     | Good              |                     |                   |          |
| Nozzles:  | Good   | Piping Coating:             | Good              |                     |                   |          |
| Vessel Saddle / Skirt / Supports / Bolts:   | Good   | Flanges / Bolting per Code: | N/A               |                     |                   |          |
| Insulation / Cladding:  | N/A  | Piping Supports:            | Good              |                     |                   |          |
| Skid foundation / Supports:   | N/A  | Piping Insulation:          | N/A               |                     |                   |          |
| Anodes:   | N/A  | Grounding:                  | N/A               |                     |                   |          |
| Instrumentation:  | Good   | Regulators Vented:          | N/A               |                     |                   |          |
| <i>* Fair and Poor conditions require comment. Additional comments on page 2 as required.</i> |  |                             |                   |                     |                   |          |
| <b>External Inspection Comments:</b>  | Limited VE performed. Vessel is currently disconnected, not in service. Vessel and piping in acceptable external condition, level, well supported and secure. Vessel skirt is bolted to skid. All piping is threaded pipe. Piping supports are in place. No signs of previous leakage. No damage or deformation noted. |                             |                   |                     |                   |          |
| <b>Fit for Service:</b>   |  |                             |                   |                     |                   |          |
| <b>YES</b>  |  |                             |                   |                     |                   |          |
| <b>PSV Details</b>  |  |                             |                   |                     |                   |          |
| PSV#:   |  | Make/Model:                 | 2740UL            | CRN:                | 0G4919.5          |          |
| MFR:  | Farris   | MFR S/N:                    | CE-323634-23-KC   | MFR Date:           | N/A               |          |
| Service Co.:  | Southern Valve   | Service Tag #:              | 16-628-10         | Last Service:       | 26-Oct-16         |          |
| Set:  | 250 psi  | Cap:                        | 308 scfm          | PSV Side:           | Shell             |          |
| Code:   | NB / UV  | Location:                   | Inlet piping      | Vented to:          | N/A               |          |
| Cap Seal:   | Intact   | Nameplate:                  | Secure, Legible   | Drainage:           | Good, no concerns |          |
| Properly Supported:   | Yes  | External Body Condition:    | Good, no concerns |                     |                   |          |
|   | Size:  | Type:                       | Block Valve:      | Locked / Carsealed: |                   |          |
| Inlet:  | 0.75 in  | Threaded                    | No                | N/A                 |                   |          |
| Outlet:   | 1.00 in  | Threaded                    | No                | N/A                 |                   |          |
| PSV Comments:   | PSV set at / below MAWP, cap seal wire intact, properly installed in the vertical position. PSV is overdue for service. Service required before vessel is put back into service. PSV is missing .2 CRN stamping.   |                             |                   |                     |                   |          |
| <b>Inspector:</b>   | <b>Name: Dustin Tucker</b>   |                             | <b>Signature:</b> |                     |                   |          |
|   | SNT-TC-1A / CGSB #17016 UTI / MTII   |                             |                   |                     |                   |          |
|   | API 510 #102375 / ISI-PVPP #001460   |                             |                   |                     |                   |          |





# Vessel Inspection Report

|        |         |          |         |              |     |
|--------|---------|----------|---------|--------------|-----|
| Jur #: | 0435074 | MFR S/N: | WF97762 | Equipment #: | N/A |
|--------|---------|----------|---------|--------------|-----|



Nameplate



Vessel



PSV Nameplate



PSV Service Tag



PSV Overview



Skid