

**Procedure:** 4.2 Rev 2 **Client:** Taku Gas Limited **Date:** 19-Dec-16  
**Technique:** UT STRAIGHT BEAM **IRISNDT #:** LYD1601755 **WO #:** .  
**Code:** CLIENT INFO: ASME V ARTICLE 23. **Location:** Calroc Shop **PO #:** .  
**Other:** **Item Inspected:** SCUD

**Material:** Carbon Steel **Surface Condition:** As Found **Heat Treatment:** Not Applicable

**Equipment:** DMS 2 **IRISNDT #:** 31082 **Calibration Date:** 25-Oct-16

<b>Calibration Block:</b> ASME <input type="checkbox"/> Other <input checked="" type="checkbox"/> CS	S/N# 33723	<b>Probe(s):</b> S/N	01T4WK			
<b>Sweep range Cal:</b> IIW <input type="checkbox"/> Other <input type="checkbox"/>	S/N#		Angle	0		
<b>Cable Type:</b> coaxile	Length 4'		Frequency (MHz)	8.0		
<b>Scanning Surface:</b> OD <input checked="" type="checkbox"/> ID <input type="checkbox"/> Other <input type="checkbox"/>			Crystal Size	.375"		

**Dis. AMPL. Calibration:** Not Applicable **Couplant:** Echogel 20 **Batch #:** 1471

**Transfer Loss Calibration:** Direct Comparison:  Other:  **TL:** db

**Reference Flaw Size:** Backwall **Primary Reference Level:** 80% **Reference Gain:** 60 db


**Lamination**  **Shear Wave**  **Volumetric**  **Thickness**  **Scan Methods:** Contact  Other

**Surface Temp (c) :**  < 5°C / 41°F  > 5°C / 41°F & < 60°C / 140°F  > 60°C / 140°F

**SCOPE:** An Ultrasonic thickness examination was carried out as requested on a SCUD SN: FWK-049. UT was conducted from the inside of the vessel due to no ports in the insulation. The UT locations are referenced on IRISNDT visual report # CA0108-NDT-460 S/N FWK-049 CRN L6763.231 A# 411783 **NOMINAL: SHELL 0.5" HEAD 0.625"**

UT#	ITEM	12	3	6	9
1	Head 1	0.634	0.657	0.648	0.646
2	Head 1	0.650	0.634	0.648	0.649
3	Shell 1	0.525	0.536	0.58	0.532
4	Shell 1	0.531	0.531	0.522	0.538
5	shell 2	0.534	0.532	0.525	0.530
6	shell 2	0.530	0.534	0.522	0.528
7	shell 3	0.533	0.537	0.544	0.531
8	shell 3	0.533	0.539	0.546	0.539
9	shell 4	0.525	0.530	0.527	0.528
10	shell 4	0.511	0.529	0.522	0.528
11	shell 5	0.536	0.540	0.539	0.536
12	shell 5	0.530	0.529	0.532	0.535
13	shell 6	0.531	0.536	0.534	0.522
14	shell 6	0.539	0.525	0.518	0.529
15	Head 2	0.666	0.633	0.628	0.635
16	Head 2	0.658	0.655	0.639	0.626
17	Inlet 6"	0.450	0.488	0.476	0.487
18	Outlet 6"	0.530	0.519	0.521	0.529
19	horse cock	0.539	0.531	0.544	0.538

**Inspection Limitation(s):** All Values in Inches.

Unit#: 667 <b>Kilometers:</b> NC In: 0930 Out: 1230 Hrs: 3.0 In: _____ Out: _____ Hrs: _____ Personnel: Logan Skinner	<b>Consumables:</b>	<b>Technician:</b> Logan Skinner SNT-TC-1A: 1 (Print)  C.G.S.B.: 1 (Level) C.G.S.B. #: 17159 (Signature) Client Representative: (Print) _____ I am in full agreement with report contents (Sign) _____
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<b>Type of Inspection:</b> Visual	<b>Client:</b> Taku Gas Limited	<b>Date:</b> 19-Dec-16
<b>Test Technique:</b> N/A	<b>IRISNDT #:</b> LYD1601755	<b>Other:</b> ..
<b>Equipment:</b> Camera, Scraper, and Flashlight	<b>Location:</b> Lloyd, Ab	<b>PO #:</b> .
<b>Code:</b> Coating Inspection	<b>Item Inspected:</b> FWKO Skud vessel internals	

**Purpose:** visual examination carried out on the following FWKO Scud style vessel internal coating. Asses for overall coating integrity and to identify any isolated coating defects.

**Name Plate Data S/N FWK-048**  
 CRN L6763.231  
 A# 411783

**Inspection results:**

Overall coating is in as new condition. No disbonding, bubbling or eroded areas of coating could be found.

10 Isolated areas of coating damage were noted due to Mechanical impacts/wear

**Recommendations:** Sand down areas of coating damage and apply coating patch repair of equivalent or superior epoxy as per manufacturers directions.

Remove defoamer or Bolt into operation position prior to moving the vessel to prevent further coating damage. Thread stainless steel bolts into the unused baffle nuts.



See attached Photos for Internals and coating defects

Unit#: <u>818</u> Kilometers: <u>0</u> In: <u>0930</u> Out: <u>1230</u> Hrs: <u>3.0</u> In: _____    Out: _____    Hrs: _____ Personnel: Tristan Sommerfeld	Consumables: Min	Interpretation by: Tristan Sommerfeld (Print)      SNT-TC-1A: _____ _____      API: <u>653</u> (Signature)      (Level) Client Representative: _____      CERT #: <u>38910</u> (Print)      Brian Hunter I am in full agreement with report contents (Sign) _____
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FWK-048 Internal Photos



As new coating on a Cat D fillet weld. no defects



Baffle plate Dent and Coating Damage

5311 - 86 Street, Edmonton, Alberta T6E 5T8 Phone: (780) 437-2022 fax: (780) 436-4873  
Calgary (403) 279-6121 Cold Lake (780) 826-6105  
Lloydminster (780) 875-6455 Fort McMurray (780) 743-1536  
Barrhead (780) 674-3018 Red Deer (403) 347-1742  
Nisku (780) 955-7616

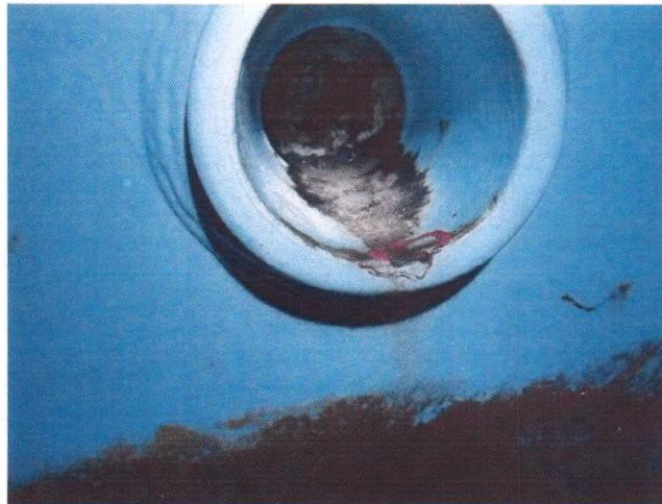
[www.irisndt.com](http://www.irisndt.com)

Engineering, Calgary (403) 217-9684  
Engineering, Edmonton (780) 437-2022  
Rope Access Services (780) 437-2022  
Offices also located in USA and UK

IRISNDT-E-2015E

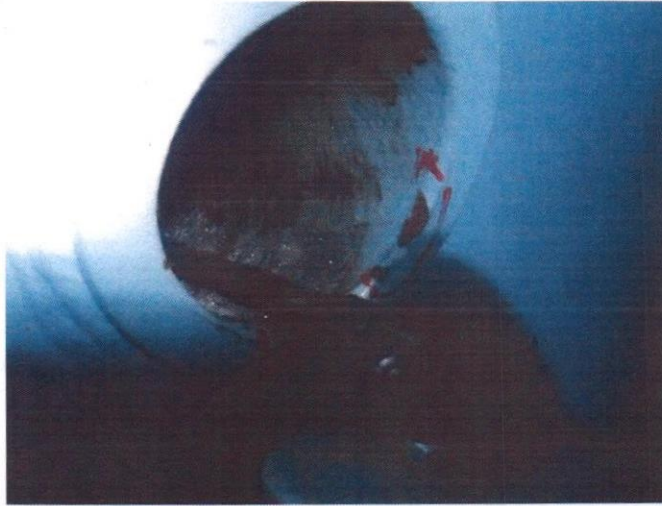


Bottom Head Butt weld coating chip

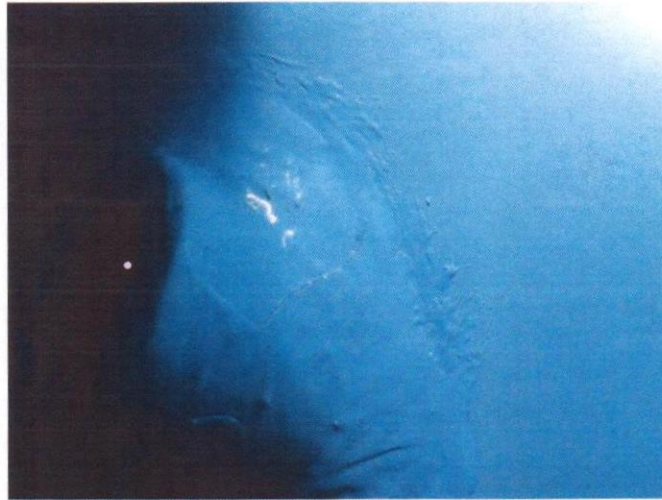


Coating chip on internal nozzle





Coating damage caused by Float



Coupling Coating chip in a patched area



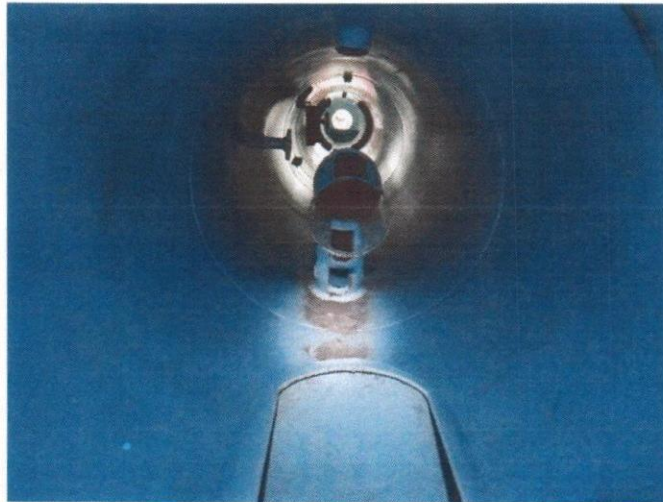
Coupling coating patch failure



Head seam coupling



Horse cock defoamer loose on bottom of the vessel



Horsecock Defoamer has been removed





Internal Manway coating defects 2

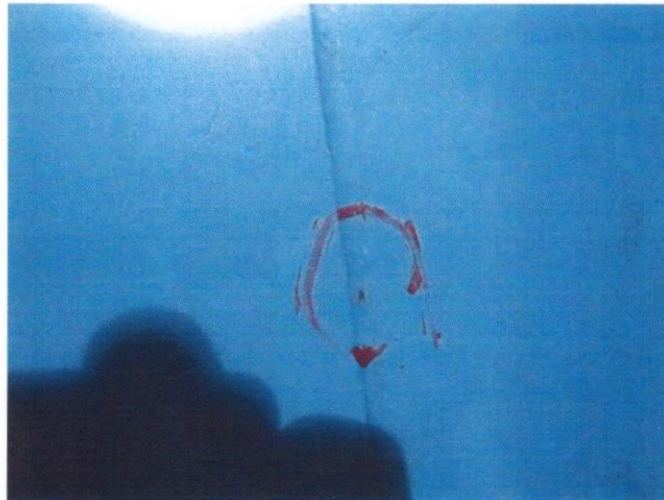


Internal Manway coating defects





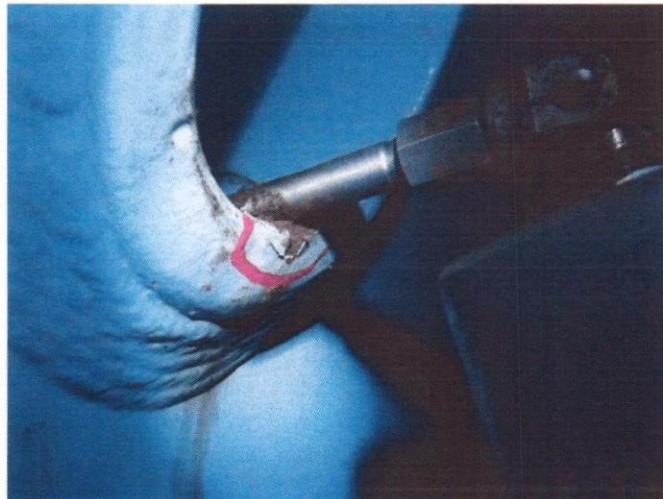
internally flanged nozzle with As new condition coating



Long seam coating chip

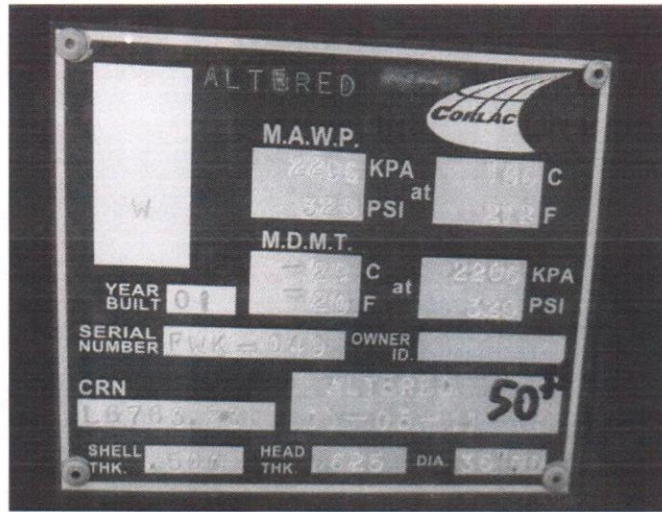


Manway Coating defects at the Gasket interface



Mechanical damage caused by a float

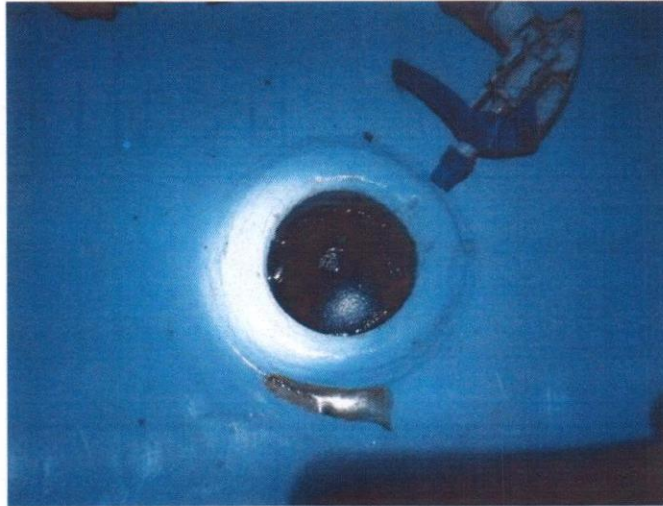




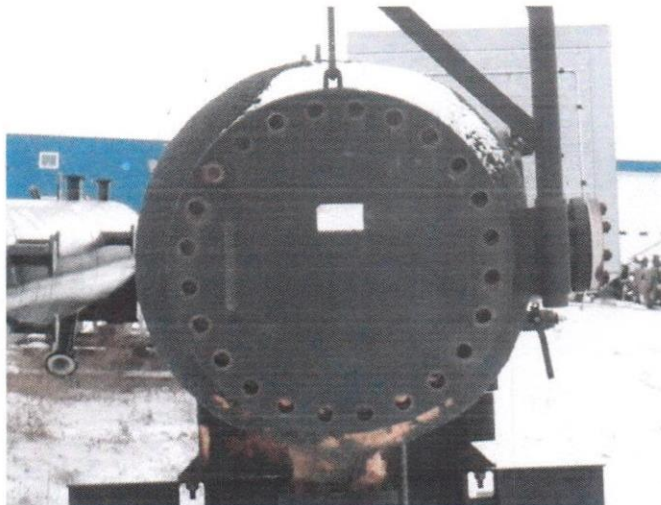
Nameplate Mod Data



Original Nameplate



Outlet nozzle full of Oil

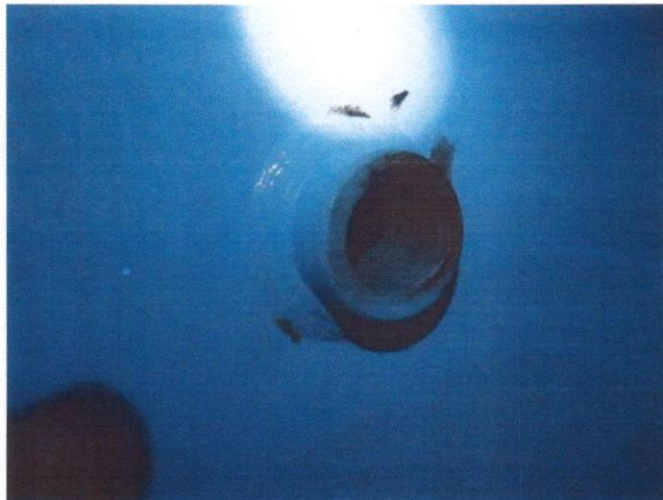


Skud End View

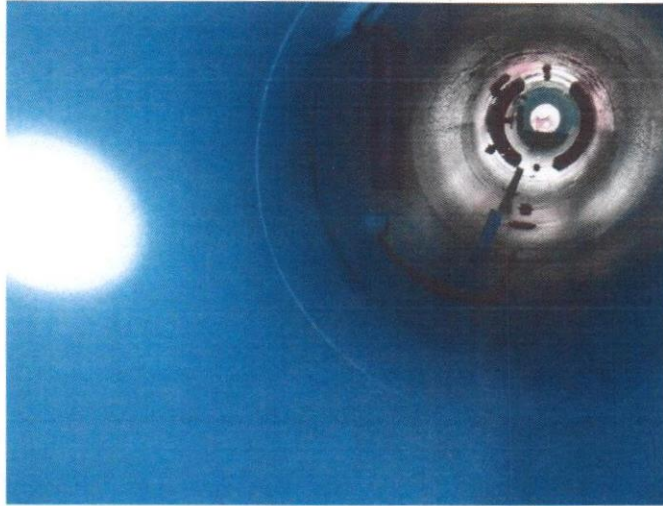




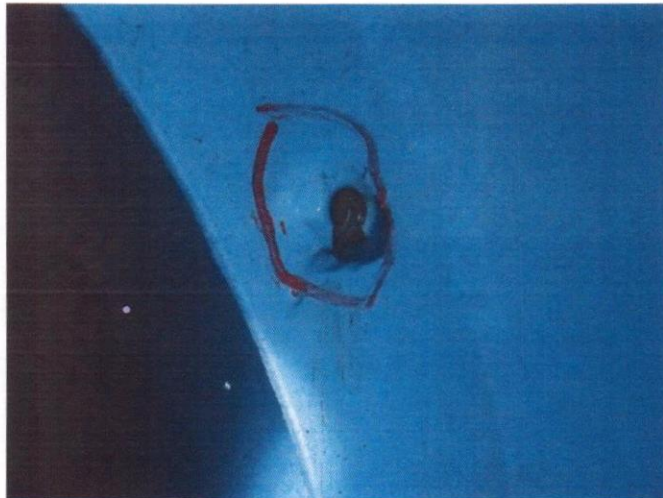
Typical as new coating of a Tee Seam



Typical coupling with no damage. Coating in as new condition



Typical Shell view of as new coating



Unused baffle plate mount coating defects on the welded nuts





Vortex breaker on the outlet nozzle