



TRINITY INDUSTRIES, INC.
BUSINESS UNIT # 296

Document No.: **QAF-902-296**

Revision #: **00**

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Revised By: **Howard Abell**

Approved By: **Howard Abell**

DOCUMENT TYPE: Controlled Form List

TITLE: Piping Test Report

PIPING TEST REPORT

Customer / Contract E SQUARED / 96287
 Vessel Name E2MS 310
 Hull Number 5366
 Official Number 1287368
 KEEL Date / COI Year 6/13/2018 / 2018

TESTING INFO

| System | Method of Test | PSI or OK | Date | Witness By |
|----------------------------|----------------|-----------|-----------|------------|
| Cargo Pipe | HYDRO | 200 | 7/30/2018 | G.B |
| Pump Well | AIR | 18 | 7/30/2018 | G.B |
| Fuel Oil Piping | AIR | 90 | 7/30/2018 | G.B |
| Hot Oil Piping | | | | |
| Steam Piping | | | | |
| Air Piping | HYDRO | 200 | 7/30/2018 | G.B |
| Stripping Piping | HYDRO | 200 | 7/30/2018 | G.B |
| Hydraulic Piping | | | | |
| Cargo Piping Relief Valve | HYDRO | 125 | 7/30/2018 | G.B |
| Vapor Piping Relief Valve | AIR | 1.5 | 7/30/2018 | G.B |
| Steam Piping Relief Valve | | | | |
| Air Piping Relief Valve | HYDRO | 125 | 7/30/2018 | G.B |
| Fuel Tank | HYDRO | 5 | 7/30/2018 | G.B |
| Slop Tank | HYDRO | 5 | 7/30/2018 | G.B |
| Cargo Pressure Gauge | AIR | 120 | 7/30/2018 | G.B |
| Vapor Pressure Gauge | AIR | 3 | 7/30/2018 | G.B |
| Air Pressure Gauge | | | | |
| Hydraulic Pressure Gauge | | | | |
| Emergency Shutdown | OPERATIONAL | OK | 7/30/2018 | G.B |
| Pump Operational Test | OPERATIONAL | OK | 7/30/2018 | G.B |
| Heater Operational Test | | | | |
| Stripping Operational Test | OPERATIONAL | OK | 7/30/2018 | G.B |
| Hydraulic Operational Test | | | 7/30/2018 | |

If a system is not applicable, leave that line blank

Initial GB Print GERALD BROWN Signature *Howard Abell* 7/30/18
 QA WITNESS _____
 QA WITNESS _____



TRINITY INDUSTRIES, INC.
BUSINESS UNIT # 296

Document No.: QAF-904-296

Revision #: 00

Revision Date: 4/5/2017

Revised By: Howard Abell

Approved By: Howard Abell

DOCUMENT TYPE: Controlled Form List

TITLE: Vapor Tightness Test Report

VAPOR TIGHTNESS TEST REPORT

Note: Test Results are Valid for (1) One Year from Date of Test!

| | | | |
|-------------------|------------------------------|--------------------------|------------------|
| Vessel Name: | <u>E2MS 310</u> | Test Date: | <u>7/30/2018</u> |
| Testing Location: | <u>Ashland City, TN #296</u> | Maximum Load Rate: (BPH) | <u>6500</u> |
| Tanks Tested: | <u>All Cargo Tanks</u> | Pressure Indicator | <u>MANOMETER</u> |

TEST RESULTS

| | | | |
|---------------------------|-------------------------|---------------|------------|
| Test Duration: 30 Minutes | Beginning Pressure | <u>50"</u> | Inches H2O |
| | Ending Pressure | <u>50"</u> | Inches H2O |
| | Total Pressure Loss | <u>0</u> | Inches H2O |
| | Allowable Pressure Loss | <u>3.1093</u> | Inches H2O |

Barge is Vapor Tight if "Total Pressure Loss" is LESS than "Allowable Pressure Loss"

- | | |
|---|--------------------------------------|
| (P1) - Beginning Pressure | (P2) - Ending Pressure |
| (Delta P) - Total Pressure Loss | (Delta PM) - Allowable Pressure Loss |
| (TP) - 14.7 plus Barge Test Pressure in PSI | (L) - Maximum Load Rate in BPH |
| (V) - Volume of Tank (s) | (Delta T) = Test Duration |
| .861 - PIA @ (P1) | |

$$.861 \times \frac{16.2}{(TP)} \times \frac{6500}{(L)} / \frac{29,158.58}{(V)} = \frac{3.1093}{(Delta PM)}$$

This vessel has been tested in accordance with Section 61.304F and has been found to be vapor tight.

Brian L. Norris 7-30-18
 Signature of Trinity Marine Tester DATE
Brian L. Norris
 PRINT Name of Trinity Marine Tester

Travis Taylor 7-30-18
 Signature of Trinity Marine Witness DATE
Travis Taylor
 PRINT Name of Trinity Marine Witness