

**TRINITY INDUSTRIES, INC.**  
**BUSINESS UNIT # 296**

Document No.: QAF-902-296

Revision #: 00

Revision Date: 4/5/2017

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	Print	Signature
QA WITNESS	<u>GB</u>	<u>GERALD BROWN</u>	
QA WITNESS	<u>          </u>	<u>                          </u>	<u>                          </u>



**TRINITY INDUSTRIES, INC.**  
**BUSINESS UNIT # 296**

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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