

**BNSF Oklaunion TX Ethanol Derailment 1-8-2022**

**Report date 4-11-22r1**

**Date:** 3-16-2022  
**Location:** Trinity Saginaw #25  
**Attendees:** Vernon Walker -FRA, Trinity-Ron Lawler, Luis Espinosa & Robert McGinley  
**Subject:** Post Derailment -Valve Inspection/Teardown

**Summary 2**

Valves were removed from 4 cars CRDX 300077, CRDX 300110, TILX 731762, and TILX 731739 in various conditions of fire/heat damage. The valves were initially placed on a test bench and air tested, documented on applicable forms EXB-011 for valves and EXB-015 for PRDs and then torn down and photographed through each step of the teardown process.

The majority of valves exhibited leaking at very low pressure and could not be pressured up due to the amount of leakage. When torn down the gaskets and o-rings were either disintegrated or had a residue from what was a gasket or O-ring. The BOV from TILX 731762 didn't have fire damage indications as other valves exhibited and temperature it was exposed was considerably less than other valves. However it still started leaking at low pressure around 9 psi.



**Car location to fire damage.**

**TILX 731762 (66) Jamesbury 9150 RR 2" Top valve**





**Valve would not hold any pressure or make bubbles due to size of leakage.**



**1570E flange gasket disintegrated. Spiral wound body gasket disintegrated.**



**Top and bottom extreme seats only reside remaining. Stem packing disintegrated.**

TRINITYRAIL As-Received Service Equipment Inspection Report											
1. Car Number: <u>TILX 731762</u>			3. Inspector: <u>Luis</u>			5. Commodity: <u>Ethanol</u>					
2. Reporting Facility: <u>TRN Sng 25 TXV</u>			4. Inspection Date: <u>3-16-22</u>								
Service Equipment Information											
6. Equipment Type: <input type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input checked="" type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve <input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)											
7. Manufacturer: <u>Jamesbury</u>			9. Model Number: <u>9150 RR 2"</u>			11. Equipment Location: <input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> A-End <input type="checkbox"/> B-End					
8. Manufacture Date: <u>NA</u>			10. Serial Number: <u>45185452.42</u>								
Low Pressure Testing			Bench Pressure Testing				High Pressure Testing				
12. Bench Test Pressure: <u>.2</u> psig			18. Bench Test Pressure: <u>NA</u> psig								
13. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			19. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								
14. Valve Seat Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			20. Valve Seat Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								
15. Valve Stem Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			21. Valve Stem Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								
16. Valve Face Plate/Body Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			22. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								
17. Valve Plug/Cap Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			23. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								
Valve Teardown and Inspection											
A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria											
			Accept	Reject	Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal Orientation	Comments
General Components	24.	Valve Body Exterior									
	25.	Valve Body Interior									
	26.	Valve Body Seal									
	27.	Valve Stem									
	28.	Valve Stem Seal									
Ball Valve	29.	Valve Sealing Surface									
	30.	Gasket									
	31.	Valve Ball									
Plug Valve	32.	Upper Ball Seat									
	33.	Lower Ball Seat									
	34.	Plug/Stem O-ring									
	35.	Plug Valve Seat									
	36.	Face Plate									
Needle Valve	37.	Retainer									
	38.	Cage									
	39.	Spring									
	40.	Cam									
Angle Valve	41.	Flange Seal									
	42.	Stem O-ring									
	43.	Needle Seat									
T.W. G.D.	44.	Plug/Stem O-ring									
	45.	Plug Valve Seat									
Manway	46.	Face Plate									
	47.	Face Plate O-ring									
	48.	Flange Seal									
	49.	T.W. Tube									
	50.	G.D. Tube									
VRV	51.	Nozzle Seal Surface									
	52.	Lid Sealing Surface									
	53.	Ears									
	54.	Bolts									
F.P.	55.	Hinge									
	56.	Lugs									
	57.	O-ring									
	58.	Spring									
	59.	Valve Sealing Surfaces									
	60.	Bottom Sealing Surface									
	61.	Nozzle Sealing Surface									
	62.	Threaded Connections									

EXB-011 Appd: Roy Rogers Issue Date: 5/15/2015 Rev. Date: 2/12/2016 Rev. A

**CRDX 30077 (56) Jamesbury 9150 RR 3" Top valve**





**Valve would not hold pressure to test.**



**Seat residue on ball.**



**Seat residue in bottom of body. Stem packing residue in bottom 1/2.**

TRINITYRAIL As-Received Service Equipment Inspection Report											
1. Car Number: <u>CROX 300077</u>		3. Inspector: <u>Luis</u>		5. Commodity: <u>Ethanol</u>							
2. Reporting Facility: <u>TRX Eng 25 TRXV</u>				4. Inspection Date: <u>3-16-23</u>							
Service Equipment Information											
6. Equipment Type: <input type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input checked="" type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve <input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)											
7. Manufacturer: <u>Jamesbury</u>			9. Model Number: <u>9150 3"</u>			11. Equipment <input type="checkbox"/> Left <input type="checkbox"/> Right					
8. Manufacture Date: <u>NA</u>			10. Serial Number: <u>U154112268.84</u>			Location: <input type="checkbox"/> A-End <input type="checkbox"/> B-End					
Bench Pressure Testing 3136 XT 21 5313					Bench Pressure Testing 3136 XT 21 5313						
12. Bench Test Pressure: <u>0</u> psig					18. Bench Test Pressure: <u>NA</u> psig						
13. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					19. Leak Test Passed <input type="checkbox"/> Yes <input type="checkbox"/> No						
14. Valve Seat Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					20. Valve Seat Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
15. Valve Stem Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					21. Valve Stem Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
16. Valve Face Plate/Body Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					22. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
17. Valve Plug/Cap Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					23. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
Valve Tear-down and Inspection											
A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria											
		Accept	Reject	Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal	Orientation	Comments
General Components	24. Valve Body Exterior										
	25. Valve Body Interior										
	26. Valve Body Seal										
	27. Valve Stem										
	28. Valve Stem Seal										
Ball Valve	29. Valve Sealing Surface										
	30. Gasket										
	31. Valve Ball										
	32. Upper Ball Seat										
	33. Lower Ball Seat										
Plug Valve	34. Plug/Stem O-ring										
	35. Plug Valve Seat										
	36. Face Plate										
	37. Retainer										
	38. Cage										
Needle Valve	39. Spring										
	40. Cam										
	41. Flange Seal										
	42. Stem O-ring										
	43. Needle Seat										
Angle Valve	44. Plug/Stem O-ring										
	45. Plug Valve Seat										
	46. Face Plate										
	47. Face Plate O-ring										
	48. Flange Seal										
T.W. / G.D.	49. T.W. Tube										
	50. G.D. Tube										
	51. Nozzle Seal Surface										
	52. Lid Sealing Surface										
	53. Ears										
Manway	54. Bolts										
	55. Hinge										
	56. Lugs										
	57. O-ring										
	58. Spring										
VRV / F.P.	59. Valve Sealing Surfaces										
	60. Bottom Sealing Surface										
	61. Nozzle Sealing Surface										
	62. Threaded Connections										

EXB-011 Appd: Roy Rogers Issue Date: 5/15/2015 Rev. Date: 2/12/2016 Rev. A

TILX 731762 (66) Jamesbury 9150 RR 3" Top valve





**Valve would not hold pressure to test.**



**Only residue of seats remaining**



**Stem packing has disintegrated.**

TRINITYRAIL		As-Received Service Equipment Inspection Report									
1. Car Number: <u>TLX 781762</u>		3. Inspector: <u>Luis</u>		5. Commodity: <u>Ethanol</u>							
2. Reporting Facility: <u>Trn Sg 25 TXXV</u>		4. Inspection Date: <u>3-16-22</u>									
Service Equipment Information											
6. Equipment Type: <input type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input checked="" type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve <input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)											
7. Manufacturer: <u>Jamesbury</u>		9. Model Number: <u>9150 3"</u>		11. Equipment Location: <input type="checkbox"/> Left <input type="checkbox"/> Right							
8. Manufacture Date: <u>NA</u>		10. Serial Number: <u>45270118.9</u>		Location: <input type="checkbox"/> A-End <input type="checkbox"/> B-End							
Low Pressure Testing		Bench Pressure Testing		High Pressure Testing							
12. Bench Test Pressure: <u>0</u> psig		18. Bench Test Pressure: <u>NA NA</u> psig									
13. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		19. Leak Test Passed <input type="checkbox"/> Yes <input type="checkbox"/> No									
14. Valve Seat Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		20. Valve Seat Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
15. Valve Stem Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		21. Valve Stem Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
16. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		22. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
17. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		23. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
Valve Teardown and Inspection											
A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria											
		Accept	Reject	Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal	Orientation	Comments
General Components	24. Valve Body Exterior										Revised XT Gase Spiral wound SS only - left Gase 1598
	25. Valve Body Interior										
	26. Valve Body Seal										
Ball Valve	27. Valve Stem										Graphite 1 piece
	28. Valve Stem Seal										
	29. Valve Sealing Surface										
Plug Valve	30. Gasket										1578 gase
	31. Valve Ball										
	32. Upper Ball Seat										
Needle Valve	33. Lower Ball Seat										
	34. Plug/Stem O-ring										
	35. Plug Valve Seat										
Angle Valve	36. Face Plate										
	37. Retainer										
	38. Cage										
T.W. G.D.	39. Spring										
	40. Cam										
	41. Flange Seal										
Manway	42. Stem O-ring										
	43. Needle Seat										
	44. Plug/Stem O-ring										
VRV	45. Plug Valve Seat										
	46. Face Plate										
	47. Face Plate O-ring										
F.P.	48. Flange Seal										
	49. T.W. Tube										
	50. G.D. Tube										
Manway	51. Nozzle Seal Surface										
	52. Lid Sealing Surface										
	53. Ears										
VRV	54. Bolts										
	55. Hinge										
	56. Lugs										
F.P.	57. O-ring										
	58. Spring										
	59. Valve Sealing Surfaces										
F.P.	60. Bottom Sealing Surface										
	61. Nozzle Sealing Surface										
	62. Threaded Connections										

EXB-011 Appd: Roy Rogers Issue Date: 5/15/2015 Rev. Date: 2/12/2016 Rev. A

CRDX 30077 (56) Jamesbury 9150 2"





TRINITYRAIL		As-Received Service Equipment Inspection Report									
1. Car Number: <u>CRDX200077</u>		3. Inspector: <u>Luis</u>		5. Commodity: <u>Ethanol</u>							
2. Reporting Facility: <u>TEN Sag 25 Txxv</u>		4. Inspection Date: <u>3-16-22</u>									
Service Equipment Information											
6. Equipment Type: <input type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input checked="" type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve											
<input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)											
7. Manufacturer: <u>Jamesbury</u>		9. Model Number: <u>9150 Z"</u>		11. Equipment Location: <input type="checkbox"/> Left <input type="checkbox"/> Right							
8. Manufacture Date: <u>NA</u>		10. Serial Number: <u>4030200</u>		<input type="checkbox"/> A-End <input type="checkbox"/> B-End							
Low Pressure Testing		Bench Pressure Testing		High Pressure Testing							
12. Bench Test Pressure: <u>0</u> psig		18. Bench Test Pressure: <u>NA</u> psig									
13. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		19. Leak Test Passed <input type="checkbox"/> Yes <input type="checkbox"/> No									
14. Valve Seat Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		20. Valve Seat Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
15. Valve Stem Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		21. Valve Stem Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
16. Valve Face Plate/Body Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		22. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
17. Valve Plug/Cap Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		23. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input type="checkbox"/> No									
Valve Teardown and Inspection											
A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria											
		Accept	Reject	Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal	Orientation	Comments
General Components	24. Valve Body Exterior										
	25. Valve Body Interior										
	26. Valve Body Seal										
Ball Valve	27. Valve Stem										
	28. Valve Stem Seal										
	29. Valve Sealing Surface										
	30. Gasket										
	31. Valve Ball										
	32. Upper Ball Seat										
Plug Valve	33. Lower Ball Seat										
	34. Plug/Stem O-ring										
	35. Plug Valve Seat										
	36. Face Plate										
	37. Retainer										
	38. Cage										
Needle Valve	39. Spring										
	40. Cam										
	41. Flange Seal										
Angle Valve	42. Stem O-ring										
	43. Needle Seat										
	44. Plug/Stem O-ring										
T.W. / G.D.	45. Face Plate										
	46. Face Plate O-ring										
	47. Flange Seal										
Manway	48. Flange Seal										
	49. T.W. Tube										
	50. G.D. Tube										
	51. Nozzle Seal Surface										
VRV	52. Lid Sealing Surface										
	53. Ears										
	54. Bolts										
F.P.	55. Hinge										
	56. Lugs										
	57. O-ring										
	58. Spring										
	59. Valve Sealing Surfaces										
	60. Bottom Sealing Surface										
	61. Nozzle Sealing Surface										
	62. Threaded Connections										

EXB-011

Appd: Roy Rogers

Issue Date: 5/15/2015

Rev. Date: 2/12/2016

Rev. A



**CRDX 300077 Fort Vale VRV 48/B0020CC7**



Service Equipment Information		Bench Pressure Testing		High Pressure Testing							
6. Equipment Type: <input type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve <input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input checked="" type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)		12. Bench Test Pressure: <u>24psig</u> psig 13. Leak Test Passed: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 14. Valve Seat Leak: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 15. Valve Stem Leak: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 16. Valve Face Plate/Body Leak: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 17. Valve Plug/Cap Leak: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		18. Bench Test Pressure: _____ psig 19. Leak Test Passed: <input type="checkbox"/> Yes <input type="checkbox"/> No 20. Valve Seat Leak: <input type="checkbox"/> Yes <input type="checkbox"/> No 21. Valve Stem Leak: <input type="checkbox"/> Yes <input type="checkbox"/> No 22. Valve Face Plate/Body Leak: <input type="checkbox"/> Yes <input type="checkbox"/> No 23. Valve Plug/Cap Leak: <input type="checkbox"/> Yes <input type="checkbox"/> No							
1. Car Number: <u>CRDX 300077</u> 3. Inspector: <u>Luis</u> 5. Commodity: <u>Ethanol</u> 2. Reporting Facility: <u>TRN Sag25TXXV4</u> 4. Inspection Date: <u>3-16-22</u>		<b>Valve Teardown and Inspection</b> A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria									
Component	Item	Accept	Reject	Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal	Orientation	Comments
General Components	24. Valve Body Exterior	NA									
	25. Valve Body Interior										
	26. Valve Body Seal										
	27. Valve Stem										
	28. Valve Stem Seal										
	29. Valve Sealing Surface										
Ball Valve	30. Gasket										
	31. Valve Ball										
	32. Upper Ball Seat										
	33. Lower Ball Seat										
	34. Plug/Stem O-ring										
	35. Plug Valve Seat										
Plug Valve	36. Face Plate										
	37. Retainer										
	38. Cage										
	39. Spring										
	40. Cam										
	41. Flange Seal										
Needle Valve	42. Stem O-ring										
	43. Needle Seat										
Angle Valve	44. Plug/Stem O-ring										
	45. Plug Valve Seat										
	46. Face Plate										
	47. Face Plate O-ring										
T.W. / G.D.	48. Flange Seal										
	49. T.W. Tube										
Manway	50. G.D. Tube										
	51. Nozzle Seal Surface										
	52. Lid Sealing Surface										
	53. Ears										
	54. Bolts										
	55. Hinge										
VRV	56. Lugs										
	57. O-ring										
F.P.	58. Spring										
	59. Valve Sealing Surfaces	Intact									
	60. Bottom Sealing Surface	NA									
	61. Nozzle Sealing Surface										
	62. Threaded Connections										

EXB-011 Appd: Roy Rogers Issue Date: 5/15/2015 Rev. Date: 2/12/2016 Rev. A

**TILX 731762 (66) BOV Jamesbury 9RET3 22HB XT**



**Valve doesn't appear to have direct heat damage**



**Ball and gasket were in good condition considering.**



**Gasket to car saddle intact. Valve started leaking at 11.9 psi**



**Seats intact and in original configuration.**



**Stem and seat packing appearance is good.**

TRINITYRAIL As-Received Service Equipment Inspection Report											
1. Car Number: <u>TLLX 781 762</u>		3. Inspector: <u>Luis</u>			5. Commodity: <u>Ethanol</u>						
2. Reporting Facility: <u>TRN Sag 25 TXXV</u>		4. Inspection Date: <u>3-16-22</u>									
Service Equipment Information											
6. Equipment Type: <input checked="" type="checkbox"/> BOV-Ball <input type="checkbox"/> BOV-Plug Valve <input type="checkbox"/> Top Ball Valve <input type="checkbox"/> Top Plug Valve <input type="checkbox"/> Needle Valve <input type="checkbox"/> Angle Valve <input type="checkbox"/> Gauging Device (G.D.) <input type="checkbox"/> Thermowell (T.W.) <input type="checkbox"/> Manway <input type="checkbox"/> VRV <input type="checkbox"/> Fittings Plate (F.P.)											
7. Manufacturer: <u>Jamesbury</u>			9. Model Number: <u>9RET3-223HG</u>			11. Equipment <input type="checkbox"/> Left <input type="checkbox"/> Right					
8. Manufacture Date: <u>NA</u>			10. Serial Number: <u>45282872.33</u>			Location: <input type="checkbox"/> A-End <input type="checkbox"/> B-End					
Bench Pressure Testing											
12. Bench Test Pressure: <u>9 psig</u>					18. Bench Test Pressure: <u>NA</u>						
13. Leak Test Passed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					19. Leak Test Passed <input type="checkbox"/> Yes <input type="checkbox"/> No						
14. Valve Seat Leak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					20. Valve Seat Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
15. Valve Stem Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					21. Valve Stem Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
16. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					22. Valve Face Plate/Body Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
17. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					23. Valve Plug/Cap Leak <input type="checkbox"/> Yes <input type="checkbox"/> No						
Valve Teardown and Inspection											
A Separate Form is Required for Each Service Equipment Component Refer to form instructions for Accept/Reject criteria				Corrosion	Scratched	Cracked	Mechanical Damage	Chemical Damage	Improper Seal	Orientation	Comments
	Accept	Reject									
General Components	24. Valve Body Exterior	✓									OK Leaked 29 PSI OK OK OK 1570E OK
	25. Valve Body Interior	✓									
	26. Valve Body Seal	✓									
27. Valve Stem	✓										
28. Valve Stem Seal	✓										
29. Valve Sealing Surface	✓										
30. Gasket	✓										
Ball Valve	31. Valve Ball										
	32. Upper Ball Seat										
Plug Valve	33. Lower Ball Seat										
	34. Plug/Stem O-ring	NA									
	35. Plug Valve Seat										
	36. Face Plate										
	37. Retainer										
Needle Valve	38. Cage										
	39. Spring										
	40. Cam										
Angle Valve	41. Flange Seal										
	42. Stem O-ring										
	43. Needle Seat										
T.W.	44. Plug/Stem O-ring										
	45. Plug Valve Seat										
G.D.	46. Face Plate										
	47. Face Plate O-ring										
Manway	48. Flange Seal										
	49. T.W. Tube										
	50. G.D. Tube										
	51. Nozzle Seal Surface										
VRV	52. Lid Sealing Surface										
	53. Ears										
	54. Bolts										
F.P.	55. Hinge										
	56. Lugs										
	57. O-ring										
	58. Spring										
	59. Valve Sealing Surfaces										
	60. Bottom Sealing Surface										
	61. Nozzle Sealing Surface										
	62. Threaded Connections										

EXB-011 Appd: Roy Rogers Issue Date: 5/15/2015 Rev. Date: 2/12/2016 Rev. A

The valves were reassembled in the as received condition and placed back on the pallet and shrink wrapped and placed on hold for additional instruction from NTSB/FRA.

There are additional photos of the valves available upon request.

Please advise if you have any questions.

Vernon Walker FRA Vernon Walker ( )

Ron Lawler Trinity Leasing ( )