

# Anhydrous Ammonia Storage Facility Inspection Checklist

Firm Name (As Licensed or Producer):	Location (City/State):	Date:
--------------------------------------	------------------------	-------

**INSTRUCTIONS: UNLESS OTHERWISE NOTED, specify non-compliance by entering "X" in the boxes or next to item number.**

**PERIODIC INSPECTION REQUIRED**— MN Rules 1513.0180, Subpart 13., requires that pressure relief devices (PRDs — hydrostats and pressure relief valves) receive a periodic visual external inspection to determine that PRDs: (A.) are free of evidence of tampering, damage, corrosion, or foreign matter that might prevent proper operation; (B.) are free of leakage when subject to pressures below the minimum allowable start to discharge setting; (C.) has a properly secured rain cap or other device to avoid entry of moisture or other matter into the relief valve outlet; and (D.) has an open weep hole to permit moisture to escape (weep holes – only for pressure relief valves)

MN CITATION	SITE IDENTIFICATION / LICENSING / RIGHT TO KNOW TRAINING	SAFETY EQUIPMENT (1513.0040)
1513.0380	1. LEGIBLE SIGN AT SITE WITH SITE ID, ADDRESS, PHONE #S OF SITE AND AFTER HOURS STAFF.	6. TWO FULL FACE NH3-RATED GAS MASKS REQUIRED
18C.415	2. CURRENT FERTILIZER LICENSE AND FERTILIZER LICENSE POSTING REQUIRED	7. FOUR CURRENTLY DATED NH3-RATED CANISTERS REQUIRED <b>CANISTER DATES:</b>
18C.235	3. IRP – INCIDENT RESPONSE PLAN REQUIRED IRP UPDATED EVERY 3 YEARS AND DOCUMENTED. IRP REVIEWED WITH EMPLOYEES ONCE/CALENDAR YEAR AND DOCUMENTED IRP MADE AVAILABLE TO LOCAL RESPONDERS AND DOCUMENTED.	8. PAIR NH3-RATED GLOVES AND GOGGLES REQUIRED 9. PAIR NH3-IMPERVIOUS RAINSUIT / SLICKER / BOOTS REQUIRED 10. SAFETY EQUIPMENT NOT ACCESSIBLE AND MAINTAINED
1513.0040	4. NH3 SAFETY & COMPETENCY TRAINING REQUIRED	11. ACCESSIBLE DELUGE SHOWER + PLUMBED EYE WASH OR A MINIMUM OF 150+ GALLON CLEAN WATER IN AN OPEN TOP CONTAINER REQUIRED
1513.0340	5. IF TWO+ TANKS; TANKS MUST BE AT LEAST 5 FT APART	12. ARE GLOVES/GOGGLES WORN WHEN HANDLING NH3 AND DURING MAINTENANCE

TANKS IDENTIFICATION / LOCATION	STORAGE TANK 1	STORAGE TANK 2	STORAGE TANK 3	STORAGE TANK 4
1513.0130	13. Clean area within 10 ft. of tank(s) of weeds, combustible materials, and materials not required for facility operation and access to emergency personnel and vehicles.			

Nos. 15 – 18; Sides of each tank or outer sides of a group of tanks TANK PAINTING / MARKINGS / PLACARDING				
1513.0220	14. Tank(s) requires painting			
1513.0360	15. "Anhydrous Ammonia" 4-inch letters			
1513.0360	16. "Inhalation Hazard" 4-inch letters			
1513.0360	17. "1005" placards			
1513.0360	18. Guaranteed grade analysis; one area per tank			
1513.0140	19. System openings ID required for liquid / vapor phases			

TANK NAMEPLATE DATA & NON-CODE WELDING	STORAGE TANK 1	STORAGE TANK 2	STORAGE TANK 3	STORAGE TANK 4
1513.0140	20. Tank manufacturer			
1513.0140	ASME construction code symbols			
1513.0140	Tank Serial No. & Contract No.			
1513.0140	National Board No.			
1513.0140	Year or Date Built			
1513.0140	Plant Manufactured			
1513.0140	Tank PSI Rating @ °F °F = °F = °F = °F =			
1513.0140	Overall length (OL) & Outside diameter (OD) OL= OD= OL= OD= OL= OD= OL= OD=			
1513.0140	Tank Gallonage Sq. Ft. Area & CFM Required (See #61)			
	Gallonage= Sq. Ft.= CFM= Sq. Ft.= CFM= Sq. Ft.= CFM= Sq. Ft.= CFM=			
1513.0140	Head and shell metal thickness (inches) Hd= Shell= Hd= Shell= Hd= Shell= Hd= Shell=			
1513.0120	21. Non-code welding on tank			

R = Repair RP = Replace TANK FOUNDATION / SUPPORTS / SADDLE CONTACTS (1513.0340)									
22. Foundation / Support type - Concrete (C), Metal (M), Skid (SK), etc.	Supports:	Foundation:	Supports:	Foundation:	Supports:	Foundation:	Supports:	Foundation:	
23. Tank foundation (F) / supports (S) R or RP required. Saddle support corrosion protection contacts (SC) requires R or RP.									
24. Saddle supports covers at least 1/3 circumference of newly installed / relocated tank									
25. Tank bottom at least 18 inches from ground level?									

TANK APPURTENANCES	STORAGE TANK 1	STORAGE TANK 2	STORAGE TANK 3	STORAGE TANK 4
1513.0140	26. 85% fixed liquid level gauge—operates properly, etc.			
1513.0140	27. Magnetic / float liquid level gauge % liquid level= % liquid level= % liquid level= % liquid level=			
1513.0320	28. 0-400 PSI / NH3-rated pressure gauge PSI= PSI= PSI= PSI=			
1513.0190	29. Temperature Gauge °F = °F = °F = °F =			
1513.0320	30. Excess Flow Valve before each shutoff valve in tank			
	Main Liq.	GPM=	GPM=	GPM=
	Liq. Return	GPM=	GPM=	GPM=
	Vapor	GPM=	GPM=	GPM=

PIPING & PIPING APPURTENANCES (System)	STORAGE TANK 1	STORAGE TANK 2	STORAGE TANK 3	STORAGE TANK 4
1513.0160	31. NH3-rated pipe/fittings required			
1513.0160	32. Eliminate leaks in system			
1513.0160/0370	33. Traffic protection (tanks, piping, etc.)			
1513.0160	34. Provision for expansion/contraction required			
1513.0150	35. Main tank shut-off valves installed correctly?			
1513.0370	36. Main tank valves closed/locked OR closed/securely fenced when facility is unattended.			

continued on page 2

PIPING & PIPING APPURTHERANCES (System)		STORAGE TANK 1	STORAGE TANK 2	STORAGE TANK 3	STORAGE TANK 4
1513.0160	37. Non-code welding on NH3 piping				
1513.0180	38. List area(s) between each pair of liquid and vapor shutoff valves <b>LACKING</b> 350–400 PSI / NH3–RATED HYDROSTAT (S), CLEANING (C), RAINCAP (RC)				
1513.0180	39. <b>Periodic inspection required</b> – on all hydrostatic relief valves in storage system piping/valves, nurse tank risers, and other NH3 transfer areas. Refer to the top of page 1 for instructions.				
PUMPING / COMPRESSOR / METER SYSTEM APPURTHERANCES					
1513.0200	40. Compressor and/or pump/size, pump inlet and outlet piping:				
1513.0200	41. 0-400 PSI / NH3-rated pressure gauge and compressor PRV	<input type="checkbox"/> Discharge side of liquid pump before or near the pressure actuated bypass valve/line <input type="checkbox"/> Both sides of compressor <input type="checkbox"/> Dirty or out of condition PRV and/or defective/missing rain cap			
1513.0200	42. <b>ANNUAL TEST REQUIRED (Every 12 months):</b> External pressure actuated (PA) bypass system installed at the discharge side of pump(s) must take the full flow capacity of the pump at a safe pressure differential (PSID) and without undue stress on pump(s)/motor(s).  Refer to MDA Fact Sheet, <b>Procedure for Testing Pressure Actuated Bypass System</b> . Place test data (i.e. Bypass PSI, Static PSI and PSID) in adjacent boxes/spaces.	Bypass ID:	Bypass PSI:	Static PSI:	PSID: (Bypass PSI – Static
		Bypass ID:	Bypass PSI:	Static PSI:	PSID: (Bypass PSI – Static
		<b>Any undue stress/pulldown on pump(s) &amp; motor(s) during the PA bypass system test?</b>			
1513.0200	43. Manual bypass: Must be closed during normal operations (filling nurse tanks, etc.) to allow full/compliant operation of pressure actuated bypass.				
1513.0200	44. Meter(s)	<input type="checkbox"/> 250 psi/NH3 rated and <input type="checkbox"/> Equipped to prevent measurement of vapor			
NURSE TANK LOADING RISERS					
RISER IDENTIFICATION / LOCATION					
1513.0200	45. Circle each riser valve without a properly sized excess flow valve	Liquid	Type =		
		Vapor	Type =		
<i>Note in #46 if Fisher Snappy Joe Emergency Shutoff Valve does not have an extra outer spring Emergency shut-off valve (ESV) with bulkhead = ESVB; Tripod = T; other shear/weakness fittings = SW</i>					
1513.0200	46. Type of required pull away device Circle pull away device that is NOT adequate - Impeded, leaky, etc.	Liquid			
		Vapor			
1513.0180	47. <b>Periodic inspection required</b> – Each hose riser NOT protected with a 350-400 PSI hydrostat: Cleaning (C); Rain cap (RC)	Liquid			
		Vapor			
1513.0180 1513.0310	48. NH3–rated hose out of condition	Liquid			
		Vapor			
1513.0370	49. Unlocked hose–end valve when unattended				
1513.0370	50. Traffic protection for riser area(s)				
RAIL & TRANSPORT UNLOADING AREA		RAIL UNLOADING AREA		TRANSPORT UNLOADING AREA	
<i>If Present - Note in #'s 51 &amp; 52 if Fisher Snappy Joe Emergency Shutoff Valve (ESV) does not have an extra outer spring</i>				Location:	Location:
1513.0200	51. Liquid unload piping requires backcheck (BC) or other suitable flow protection (Excludes ESV's)				
1513.0200	52. Vapor unload requires properly sized excess flow valve or other suitable flow protection (Excludes ESV's)				
1513.0180	53. <b>Periodic inspection required</b> – Liquid & vapor unload hose(s) requires 350-400 PSI / NH3-rated hydrostat(s); Cleaning (C); Rain cap (RC)	Liquid:	Vapor:	Liquid:	Vapor:
1513.0170	54. NH3 rated hoses for unload area out of condition	Liquid:	Vapor:	Liquid:	Vapor:
1513.0200	55. Type of required transport area pull-away protection (i.e. bulkhead, weakness/shear fittings). Circle if NOT adequate or impeded – i.e. transport transfer hosing catches on fencing, etc				
1513.0640	56. Rail = Caution signs <b>required</b> for placement on tracks to warn of connections? Rail = Wheel chokes <b>required</b> for use in unloading car(s)?				
1513.0200	57. Non Permitted Storage: <input type="checkbox"/> Rail Tank cars and Truck transports = NOT unloaded into an approved/permited fixed storage facility <input type="checkbox"/> Nurse tank containing NH3 (liquid/vapor) NOT placed at an approved/permited fixed storage facility				
MANIFOLDS & PRESSURE RELIEF VALVES – PRV'S – PERIODIC INSPECTION REQUIRED (1513.0180 & 1513.0330)					
TANK IDENTIFICATION / MANIFOLD & PRV LOCATION					
1513.0330	58. Brand of manifold(s) (C = Continental; RD/RM = Rego Duoport/Multiport; ST = Squibb Taylor)				
1513.0330	59. R/RP manifold(s) – Properly operates?				
1513.1100	60. UL CFM/Air rating of manifold(s)				
	61. CFM required/tank (See #20)				
1513.0180	62. Up / down stream restrictions				
1513.0370	<b>ID / LOCATION OF PRV'S</b>				
1513.0180	63. PRV Brand (C = Continental; RL/RS = Rego–large/small; ST = Squibb Taylor)				
1513.0180	64. <b>Periodic inspection required</b> – Refer to the top of page 1 for instructions.				
1513.1100	65. CFM rating of PRV's				
1513.0180	66. PRV's NH3 and 250 PSI–rated				
1513.0180	67. PRV Installation records maintained				
1513.0180	68. Replace out–of–date / out–of–condition PRV				
1513.0180	69. PRV Cleaning (C); Raincap (RC) Required				