

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

December 4, 2013

**PERMIT TO INSTALL**  
213-961

**ISSUED TO**  
Osmose, Inc.

**LOCATED AT**  
52430 Duncan Avenue  
Hubbell, Michigan

**IN THE COUNTY OF**  
Houghton

**STATE REGISTRATION NUMBER**  
B8596

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

**November 21, 2013**

DATE PERMIT TO INSTALL APPROVED:

**December 4, 2013**

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

**PERMIT TO INSTALL**

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant / Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO <sub>2</sub> e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfuction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO <sub>2</sub>	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Flexible Group ID</b>
EUCUC&CUOPROCESS	Processes used for manufacturing cupric oxide and copper carbonate. This process includes rotary distillers, tray dryer for the cupric oxide production, an agitated flash dryer for the copper carbonate production and any other equipment that is part of the manufacturing and packaging process. Portions of this process are controlled by the ammonia recovery system which is made up of the ammonia absorber, ammonia scrubber and the ammonia distillation towers.	FGCOPPER
EUNH3STG&HNDLG	Anhydrous ammonia storage and handling area	NA
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

**The following conditions apply to: EUNH3STG&HNDLG**

**DESCRIPTION:** Anhydrous ammonia storage and handling area

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

NA

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. Except where specific requirements of these special conditions are applicable and more stringent, EUNH3STG&HNDLG shall comply with "Part 78, Storage and Handling of Anhydrous Ammonia", (MIOSHA 1910.111) hereinafter Rule 7801. The permittee shall maintain a copy of this standard, which may be obtained by contacting the Michigan Department of Consumer and Industry Services, Bureau of Safety and Regulations, Safety Standards Division, 7150 Harris Drive, Lansing, Michigan 48909-8143, for inspection at the facility.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall not operate EUNH3STG&HNDLG unless the inspection and maintenance program specified in Appendix A has been implemented and maintained.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**

3. The permittee shall not operate EUNH3STG&HNDLG unless all transfer operations, including transport deliveries, are performed by a reliable person properly trained and made responsible for proper compliance with all applicable procedures.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
4. The permittee shall not operate EUNH3STG&HNDLG unless an emergency response plan, to be followed in the event of an emergency, has been approved by the local fire department or county emergency response agency and is implemented and maintained. Prior to each spring season, the permittee shall review this plan with the local fire department or emergency response agency and make any necessary updates.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
5. Vapor return lines shall be employed whenever necessary to ensure an accidental release from pressure relief valves will not occur during ammonia transfer operations.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
6. Nitrogen stabilizer shall not be added to any permanent stationary storage tank or to rail or truck transport tanks.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**

#### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall fit all containers with safety relief valves in accordance with Rule 7801(b)(9). Such valves shall be stamped with the date manufactured, and shall be replaced, or re-tested and re-certified, at least every five years or more often if there is evidence of damage or deterioration.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall not operate EUNH3STG&HNDLG unless a remotely operated internal or external positive shut-off valve is installed to allow access for emergency shut-off of all flow from stationary storage containers.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
3. The permittee shall not operate EUNH3STG&HNDLG unless a bulkhead, anchorage, or equivalent system is used at each transfer area so that any break resulting from a pull will occur at a predictable location while retaining intact the valves and piping on the plant side of the transfer area.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
4. The permittee shall not operate EUNH3STG&HNDLG unless liquid lines in rail and transport transfer areas are equipped with back pressure check valves and all liquid lines not requiring a back check valve and all vapor lines are equipped with properly sized excess flow valves. The permittee shall install these valves on the main container side of the predictable break point at the bulkhead.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
5. All hoses shall be replaced five years after date of manufacture or more often if there is evidence of damage or deterioration.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
6. The permittee shall vent any vapor or liquid line, exclusive of couplings, requiring venting after ammonia transfer through a water trap of 55 gallons minimum size. The permittee shall not use safety water for this purpose.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**
7. The permittee shall present a conspicuously placed sign at the facility entrance stating the emergency phone numbers for the owner, primary operator, local and state police, local fire department, and ambulance service.<sup>1</sup> **(R 336.1224, R 336.1225, R 336.1901)**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction or spill occurring from EUNH3STG&HNDLG, including the estimated amount of ammonia released into the atmosphere. Do not include trace amounts from normal hose coupling bleed downs. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup>  
**(R 336.1224, R 336.1225, R 336.1901)**
2. The permittee shall keep, in a satisfactory manner, records of the date of annual review and approval of the emergency response plan with the local fire department or county emergency response agency. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup>  
**(R 336.1224, R 336.1225, R 336.1901)**

**VII. REPORTING**

1. The permittee shall notify the Pollution Emergency Alert System (PEAS) 1-800-292-4706 and/or the AQD District Supervisor immediately of any abnormal release of anhydrous ammonia from EUNH3STG&HNDLG. A normal release includes only hose coupling bleed downs, operation of hydrostatic relief valves, and normal pressure relief from the safety relief valve(s). Relief due to overfilling is not normal.<sup>1</sup> **(R 336.1201(3), R 336.1901)**

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCOPPER	All process equipment used for the manufacturing of cupric oxide and copper carbonate. During normal operations, the basic copper carbonate (BCC) filter operations and the BCC flash dryer will exhaust through the new stack (SVC2) and the tray dryer and ammonia recovery system will vent through the existing stack (SVC1). During times of maintenance on SVC1, the ammonia recovery system will vent through SVC2.	EUCUC&CUOPROCESS

**The following conditions apply to: FGCOPPER**

**DESCRIPTION:** All process equipment used for the manufacturing of cupric oxide and copper carbonate. During normal operations, the basic copper carbonate (BCC) filter operations and the BCC agitated flash dryer will exhaust through the new stack (SVC2) and the cupric oxide tray dryer and ammonia recovery system will vent through the existing stack (SVC1). During times of maintenance on SVC1, the ammonia recovery system will vent through SVC2.

**Emission Units:** EUCUC&CUOPROCESS

**POLLUTION CONTROL EQUIPMENT:** Ammonia recovery system.

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Ammonia	29.0 pph <sup>1</sup>	Daily average*	Equipment vented through stack SVC1	SC V.1, VI.2, VI.3, VI.4, VI.5, VI.6, VI.7, VI.8, VI.9	R 336.1224, R 336.1225
2. Ammonia	44.0 pph <sup>1</sup>	Daily average*	Equipment vented through stack SVC2	SC V.1, VI.2, VI.3, VI.4, VI.5, VI.6, VI.7, VI.8, VI.9	R 336.1224, R 336.1225
3. Ammonia	9.0 pph <sup>1</sup>	Daily average*	Ammonia Recovery System.	SC V.1, VI.3, VI.4, VI.5, VI.6, VI.7, VI.8, VI.9	R 336.1224, R 336.1225
4. PM	0.08 pound per 1000 pounds exhaust gases	Testing	Tray dryer	GC 13	R 336.1331
5. PM	0.12 pph	Testing	Tray dryer	GC 13	R 336.1331
6. PM	0.08 pound per 1000 pounds exhaust gases	Testing	Calciner	GC 13	R 336.1331
7. PM	0.12 pph	Testing	Calciner	GC 13	R 336.1331
8. PM	0.01 pound per 1000 pounds exhaust gases	Testing	Agitated Flash Dryer	GC 13	R 336.1331
9. PM	0.15 pph	Testing	Agitated Flash Dryer	GC 13	R 336.1331

\* As determined parametrically using data required by the Special Conditions.

## **II. MATERIAL LIMITS**

1. The fresh ammonia addition rate to FGCOPPER shall not exceed the amount of ammonia contained in finished product plus 0.065 pounds of ammonia per pound of copper contained in product, based on a 12-month rolling average as determined at the end of each calendar month.<sup>1</sup> **(R 336.1224, R 336.1225)**

## **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. Exhaust gases from the following process equipment shall be vented through the ammonia absorber and the ammonia scrubbers operated in series, hereinafter "ammonia recovery system." **(R 336.1224, R 336.1225, R 336.1910)**
  - all digesters
  - all ammonia solution storage tanks
  - vacuum pump
  - all thickeners
  - two ammonia distillation towers
  - all oxidation towers
  - all sumps
  - recycle tower
  - vapor liquid separators
2. The permittee shall not operate any of the equipment listed in SC III.1 unless the ammonia recovery system is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes a minimum fresh water feed rate of 0.6 gallons per minute to the ammonia scrubber, a maximum vapor feed temperature of 75 °F to the first column, and a maximum liquid feed temperature of 50 °F to each of the columns. **(R 336.1224, R 336.1225, R 336.1910)**
3. The permittee shall not operate FGCOPPER unless a malfunction abatement and preventative maintenance program has been submitted to and approved by the District Supervisor, Air Quality Division. **(R 336.1224, R 336.1225, R 336.1911)**

## **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain the ammonia recovery system with liquid flow and temperature indicators on the liquid feed to each column and a vapor feed temperature indicator on the vapor feed to the first column. **(R 336.1224, R 336.1225, R 336.1910)**
2. The permittee shall not operate the Cupric Oxide Process tray dryer unless the dust collector is installed, maintained, and operated in a satisfactory manner as defined in the malfunction abatement and preventative maintenance program. **(R 336.1331, R 336.1910)**
3. The permittee shall not operate the calciner unless the baghouse is installed, maintained, and operated in a satisfactory manner as defined in the malfunction abatement and preventative maintenance program. Note the calciner exhausts through SVBAGHOUSE. **(R 336.1331, R 336.1910)**
4. The permittee shall not operate the agitated flash dryer unless the baghouse is installed, maintained, and operated in a satisfactory manner as defined in the malfunction abatement and preventative maintenance program. **(R 336.1331, R 336.1910)**
5. The permittee shall not operate the BCC filter operations unless the particulate filter is installed, maintained, and operated in a satisfactory manner as defined in the malfunction abatement and preventative maintenance program. **(R 336.1331, R 336.1910)**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall test each batch from FGCOPPER to determine the quantity of ammonia and copper contained in the product.<sup>1</sup> **(R 336.1224, R 336.1225)**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping.<sup>1</sup> **(R 336.1224, R 336.1225)**
2. The permittee shall monitor and record the total feed rate to the tray dryer and agitated flash dryer and the ammonia concentration in the feed to the tray dryer and agitated flash dryer on a daily basis. All data, including calculation of the ammonia emission rate from the tray dryer and agitated flash dryer, shall be kept on file for a period of at least five years and made available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
3. The permittee shall monitor the liquid flow rate and temperature of each of the columns of the ammonia recovery system and the vapor feed temperature of the first column of the ammonia recovery system every four hours.<sup>1</sup> **(R 336.1224, R 336.1225)**
4. The permittee shall keep, in a satisfactory manner, records of the daily fresh ammonia addition to FGCOPPER, daily production records with the amount of copper contained in each product produced and calculations showing the monthly fresh ammonia addition to FGCOPPER in pounds of ammonia per pound of copper contained in product. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
5. The permittee shall keep records of each batch produced, including the amount of copper and ammonia contained in the finished product of each batch as determined by testing. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
6. The permittee shall measure and record the ammonia recovery rate of the ammonia recovery system when modifications are made to the equipment and/or operation of the process (provided the modifications do not require applicant to obtain a Permit to Install) that could appreciably alter the performance of and/or the ammonia emission rate from the ammonia recovery system in order to obtain new baseline data, by testing, according to a schedule and using a method approved in writing by the District Supervisor, Air Quality Division. All records, including calculation of the ammonia emission rate, shall be kept on file for a period of at least five years and made available to the Air Quality Division upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
7. The permittee shall keep records of the readings taken every four hours of the liquid flow rate and temperature for each of the columns of the ammonia recovery system and the vapor feed temperature of the first column of the ammonia recovery system. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
8. The permittee shall keep records, on a daily basis, of the amount of time the ammonia recovery system exhausts through SVC2 rather than SVC1. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**
9. The permittee shall keep records, on a daily basis, of the calculations for determining the hourly ammonia emissions from the equipment vented through stack SVC1, the equipment vented through stack SVC2, and the ammonia recovery system. The permittee shall keep all records on file and make them available to the Department upon request.<sup>1</sup> **(R 336.1224, R 336.1225)**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVC1	12 <sup>1</sup>	130 <sup>1</sup>	R 336.1225
2. SVC2	20 <sup>1</sup>	140 <sup>1</sup>	R 336.1225
3. SVBAGHOUSE	12 <sup>1</sup>	53 <sup>1</sup>	R 336.1225

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**APPENDIX A**  
**Inspection and Maintenance Program, Page 1 of 2**  
 Permanent Ammonia Storage Tank

Inspection Items 1-15 of 30:	Satisfactory?			Action(s) Taken to Correct Deficiency:
	Yes	No	Date*	
1. Tank free of leaks				
2. Tank supports in good condition (no cracked or crumbled concrete, etc.)				
3. Paint in good condition				
4. Equipment locked when not in use				
5. Tank properly labeled				
6. Valves and fittings free from leaks and in good condition				
7. Piping properly supported and guards in place				
8. Pipes free of physical damage and rust and properly painted				
9. Employees trained in proper filling procedures				
10. Provisions provided for bleeding of transfer hose from the transport truck				
11. Wheels properly chocked on the transport truck or rail tank car while unloading				
12. Information and warning signs displayed and in good condition				
13. Area free of weeds, trash and other unsafe conditions				
14. Unused equipment stored out of the way				
15. Chemical safety goggles available and in good condition				

Date Inspected: \_\_\_\_\_

Inspector: \_\_\_\_\_

\* For each item, check if condition is satisfactory or not satisfactory. If condition is not satisfactory, complete date when corrected and record action(s) taken to correct. If condition is not applicable, write NA.

**Appendix A**  
**Inspection and Maintenance Program, Page 2 of 2**  
 Permanent Ammonia Storage Tank

Inspection Items 16-30 of 30:	Satisfactory?			Action(s) Taken to Correct Deficiency:
	Yes	No	Date*	
16. Protective gloves, boots, suits or slickers available and in good condition				
17. Gas masks with ammonia type canisters and refill canisters within date limits available				
18. Emergency clean water, shower or 75 gallon tank available nearby				
19. Hoses in good condition				
20. Hoses no older than five years from date of manufacture and marked				
21. Vapor and liquid hoses are proper ammonia- type and free of damage or deterioration				
22. Hoses suitably racked to prevent kinking				
23. Hoses, including those on nurse tanks, securely clamped to the nipples				
24. Gages, pressure and liquid level, operable				
25. Valves properly labeled "liquid" and "vapor"				
26. Safety relief valves within five years of manufacture or recertification and marked				
27. Outlet openings on valves and lines free of dirt and rust with protective caps in place				
28. Safety relief valves free of debris with rain caps installed				
29. Safety relief valve manifold operable				
30. Remote shut-off valve in working order				

Date Inspected: \_\_\_\_\_

Inspector: \_\_\_\_\_

\* For each item, check if condition is satisfactory or not satisfactory. If condition is not satisfactory, complete date when corrected and record action(s) taken to correct. If condition is not applicable, write NA.