STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
TITLE V PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

CF Industries Nitrogen, LLC
4612 Highway 49 East
Yazoo City, Mississippi
Yazoo County

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and conditions set forth herein. This permit is issued in accordance with Title V of the Federal Clean Air Act (42 U.S.C.A. § 7401 - 7671) and the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder.

Permit Issued: November 13, 2013

Modified: February 21, 2014 and JUN 2 3 2014

Effective Date: As specified herein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Expires: October 31, 2018 **Permit No.: 3020-00010**

2269 PER20110001

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SECTION 1. GENERAL CONDITIONS

1.1 The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(a).)

1.2 It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(b).)

1.3 This permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(c).)

1.4 This permit does not convey any property rights of any sort, or any exclusive privilege. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(d).)

1.5 The permittee shall furnish to the DEQ within a reasonable time any information the DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permittee or, for information to be confidential, the permittee shall furnish such records to DEQ along with a claim of confidentiality. The permittee may furnish such records directly to the

Administrator along with a claim of confidentiality. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(6)(e).)

1.6 The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(5).)

1.7 The permittee shall pay to the DEQ an annual permit fee. The amount of fee shall be determined each year based on the provisions of regulated pollutants for fee purposes and the fee schedule specified in the Commission on Environmental Quality's order which shall be issued in accordance with the procedure outlined in 11 Miss. Admin. Code Pt. 2, Ch. 6.

(a) For purposes of fee assessment and collection, the permittee shall elect for actual or allowable emissions to be used in determining the annual quantity of emissions unless the Commission determines by order that the method chosen by the applicant for calculating actual emissions fails to reasonably represent actual emissions. Actual emissions shall be calculated using emission monitoring data or direct emissions measurements for the pollutant(s); mass balance calculations such as the amounts of the pollutant(s) entering and leaving process equipment and where mass balance calculations can be supported by direct measurement of process parameters, such direct measurement data shall be supplied; published emission factors such as those relating release quantities to throughput or equipment type (e.g., air emission factors); or other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgments where such judgments are derived from process and/or emission data which supports the estimates of maximum actual emission. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A(2).)

(b) If the Commission determines that there is not sufficient information available on a facility's emissions, the determination of the fee shall be based upon the permitted allowable emissions until such time as an adequate determination of actual emissions is made. Such determination may be made anytime within one year of the submittal of actual emissions data by the permittee. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A(2).) If at any time within the year the Commission determines that the information submitted by the permittee on actual emissions is insufficient or incorrect, the permittee will be notified of the deficiencies and the adjusted fee schedule. Past due fees from the adjusted fee schedule will be paid on the next scheduled quarterly payment time. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D(2).)

(c) The fee shall be due September 1 of each year. By July 1 of each year the permittee shall submit an inventory of emissions for the previous year on which the fee is to be

assessed. The permittee may elect a quarterly payment method of four (4) equal payments; notification of the election of quarterly payments must be made to the DEQ by the first payment date of September 1. The permittee shall be liable for penalty as prescribed by State Law for failure to pay the fee or quarterly portion thereof by the date due. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D.)

(d) If in disagreement with the calculation or applicability of the Title V permit fee, the permittee may petition the Commission in writing for a hearing in accordance with State Law. Any disputed portion of the fee for which a hearing has been requested will not incur any penalty or interest from and after the receipt by the Commission of the hearing petition. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.C.)

1.8 No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(8).)

1.9 Any document required by this permit to be submitted to the DEQ shall contain a certification by a responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.2.E.)

1.10 The permittee shall allow the DEQ, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to perform the following:

(a) enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;

(b) have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) as authorized by the Federal Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C(2).)

1.11 Except as otherwise specified or limited herein, the permittee shall have necessary sampling ports and ease of accessibility for any new air pollution control equipment, obtained after May 8, 1970, and vented to the atmosphere. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.I(1).)

1.12 Except as otherwise specified or limited herein, the permittee shall provide the necessary sampling ports and ease of accessibility when deemed necessary by the Permit Board for air pollution control equipment that was in existence prior to May 8, 1970. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.I(2).)

1.13 Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance where such applicable requirements are included and are specifically identified in the permit or where the permit contains a determination, or summary thereof, by the Permit Board that requirements specifically identified previously are not applicable to the source. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F(1).)

1.14 Nothing in this permit shall alter or affect the following:

(a) the provisions of Section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section;

(b) the liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

(c) the applicable requirements of the acid rain program, consistent with Section 408(a) of the Federal Act.

(d) the ability of EPA to obtain information from a source pursuant to Section 114 of the Federal Act. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F(2).)

1.15 The permittee shall comply with the requirement to register a Risk Management Plan if permittee's facility is required pursuant to Section 112(r) of the Act to register such a plan. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.H.)

1.16 Expiration of this permit terminates the permittee's right to operate unless a timely and complete renewal application has been submitted. A timely application is one which is submitted at least six (6) months prior to expiration of the Title V permit. If the permittee submits a timely and complete application, the failure to have a Title V permit is not a violation of regulations until the Permit Board takes final action on the permit application. This protection shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by the DEQ any additional information identified as being needed to process the application. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.C(2)., R. 6.4.B., and R. 6.2.A(1)(c).)

1.17 The permittee is authorized to make changes within their facility without requiring a permit revision (ref: Section 502(b)(10) of the Act) if:

(a) the changes are not modifications under any provision of Title I of the Act;

(b) the changes do not exceed the emissions allowable under this permit;

(c) the permittee provides the Administrator and the Department with written notification in advance of the proposed changes (at least seven (7) days, or such other time frame as provided in other regulations for emergencies) and the notification includes:

(1) a brief description of the change(s),

(2) the date on which the change will occur,

(3) any change in emissions, and

(4) any permit term or condition that is no longer applicable as a result of the change;

(d) the permit shield shall not apply to any Section 502(b)(10) change. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.F.)

1.18 Should the Executive Director of the Mississippi Department of Environmental Quality declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule or, in the absence of an approved schedule, with the appropriate requirements specified in 11 Miss. Admin. Code Pt. 2, Ch.3., "Regulations for the Prevention of Air Pollution Emergency Episodes" for the level of emergency declared. (Ref.: 11 Miss. Admin. Code Pt. 2, Ch.3.)

1.19 Except as otherwise provided herein, a modification of the facility may require a Permit to Construct in accordance with the provisions of 11 Miss. Admin. Code Pt. 2, Ch. 2., "Permit Regulations for the Construction and/or Operation of Air Emissions Equipment", and may require modification of this permit in accordance with 11 Miss. Admin. Code Pt. 2, Ch. 6., "Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act". Modification is defined as "[a]ny physical change in or change in the method of operation of a facility which increases the actual emissions or the potential uncontrolled emissions of any air pollutant subject to regulation under the Federal Act emitted into the atmosphere by that facility or which results in the emission of any air pollutant subject to regulation under the Federal Act into the atmosphere not previously emitted. A physical change or change in the method of operation shall not include:

(a) routine maintenance, repair, and replacement;

(b) use of an alternative fuel or raw material by reason of an order under Sections 2 (a) and (b) of the Federal Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;

(c) use of an alternative fuel by reason of an order or rule under Section 125 of the Federal Act;

(d) use of an alternative fuel or raw material by a stationary source which:

(1) the source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166; or

(2) the source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(e) an increase in the hours of operation or in the production rate unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166; or

(f) any change in ownership of the stationary source."

1.20 Any change in ownership or operational control must be approved by the Permit Board. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.D(4).)

1.21 This permit is a Federally approved operating permit under Title V of the Federal Clean Air Act as amended in 1990. All terms and conditions, including any designed to limit the source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act as well as the Commission. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.B(1).)

1.22 Except as otherwise specified or limited herein, the open burning of residential, commercial, institutional, or industrial solid waste, is prohibited. This prohibition does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, debris from emergency clean-up operations, and ordnance. Open burning of land-clearing debris must not use starter or auxiliary fuels which cause excessive smoke (rubber tires, plastics, etc.); must not be performed if prohibited by local ordinances; must not cause a traffic hazard; must not take place where there is a High Fire Danger Alert declared by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.

(a) Open burning without a forced-draft air system must not occur within 500 yards of an occupied dwelling.

(b) Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within 50 yards of an occupied dwelling.

(c) Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.G.)

1.23 Except as otherwise specified herein, the permittee shall be subject to the following provision with respect to emergencies.

(a) Except as otherwise specified herein, an "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(b) An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in (c) following are met.

(c) The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(1) an emergency occurred and that the permittee can identify the cause(s) of the emergency;

(2) the permitted facility was at the time being properly operated;

(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) the permittee submitted notice of the emergency to the DEQ within 2 working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(d) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(e) This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.G.)

1.24 Except as otherwise specified herein, the permittee shall be subject to the following provisions with respect to upsets, startups, shutdowns and maintenance.

(a) Upsets (as defined by 11 Miss. Admin. Code Pt. 2, R. 1.2.KK.)

(1) The occurrence of an upset constitutes an affirmative defense to an enforcement action brought for noncompliance with emission standards or other requirements of Applicable Rules and Regulations or any applicable permit if the permittee demonstrates through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(i) an upset occurred and that the permittee can identify the cause(s) of the upset;

(ii) the source was at the time being properly operated;

(iii) during the upset the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements of Applicable Rules and Regulations or any applicable permit;

(iv) the permittee submitted notice of the upset to the DEQ within 5 working days of the time the upset began; and

(v) the notice of the upset shall contain a description of the upset, any steps taken to mitigate emissions, and corrective actions taken.

(2) In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

(3) This provision is in addition to any upset provision contained in any applicable requirement.

(b) Startups and Shutdowns (as defined by 11 Miss. Admin. Code Pt. 2, R. 1.2.HH & CC.)

(1) Startups and shutdowns are part of normal source operation. Emissions limitations applicable to normal operation apply during startups and shutdowns except as follows:

(i) when sudden, unavoidable breakdowns occur during a startup or shutdown, the event may be classified as an upset subject to the requirements above;

(ii) when a startup or shutdown is infrequent, the duration of excess emissions is brief in each event, and the design of the source is such that the period of excess emissions cannot be avoided without causing damage to equipment or persons; or

(iii) when the emissions standards applicable during a startup or shutdown are defined by other requirements of Applicable Rules and Regulations or any applicable permit.

(2) In any enforcement proceeding, the permittee seeking to establish the applicability of any exception during a startup or shutdown has the burden of proof.

(3) In the event this startup and shutdown provision conflicts with another applicable requirement, the more stringent requirement shall apply.

(c) Maintenance

(1) Maintenance should be performed during planned shutdown or repair of process equipment such that excess emissions are avoided. Unavoidable maintenance that results in brief periods of excess emissions and that is necessary to prevent or minimize emergency conditions or equipment malfunctions constitutes an affirmative defense to an enforcement action brought for noncompliance with emission standards, or other regulatory requirements if the permittee can demonstrate the following:

(i) the permittee can identify the need for the maintenance;

(ii) the source was at the time being properly operated;

(iii) during the maintenance the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements of Applicable Rules and Regulations or any applicable permit;

(iv) the permittee submitted notice of the maintenance to the DEQ within 5 working days of the time the maintenance began or such other times as allowed by DEQ; and

(v) the notice shall contain a description of the maintenance, any steps taken to mitigate emissions, and corrective actions taken.

(2) In any enforcement proceeding, the permittee seeking to establish the applicability of this section has the burden of proof.

(3) In the event this maintenance provision conflicts with another applicable requirement, the more stringent requirement shall apply. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.10.)

1.25 The permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M, as adopted by reference in Regulation 11 Miss. Admin. Code Pt. 2, R. 1.8. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.

SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES

Emission Point	Description
AB-001	Wickes Boiler or Auxiliary Boiler No. 1 – forced draft steam generator combusting natural gas. Rated Capacity: 130 MMBtu/hr
AB-002	Combustion Engineering Boiler, or Auxiliary Boiler No. 2 – forced draft steam generator combusting natural gas. Rated Capacity: 184 MMBtu/hr
AB-003	Cogeneration Facility, General Electric LM-2500 natural gas-fired turbine/generator set with supplementary fired Coen burner heat recovery steam generator. Rated Capacity: 328 MMBtu/hr
No. 3 (Kellogg) Ammonia Plant – M.W. Kellogg single train anhydrous ammonia manufacturing facility. Process is based on the catalytic steam reforming of natural gas with subsequent conversion to ammonia over a magnetite catalyst. Rated capacity: 72.37 tons/hr	
AD-001	Carbon Dioxide (CO_2) Vent
AD-003	Kellogg Startup Heater – a natural gas-fired heater operating only during startups. Rated Capacity: 32.64 MMBtu/hr.
AD-004	Kellogg Ammonia Flare
AD-005	Primary Reformer – fired by natural gas and process purge gas. The Primary Reformer is equipped with ultra low-NO_x burners in the primary burner section for control of NO_x emissions. Nominal Rated Capacity: 919.5 MMBtu/hr (LHV)
AD-006	Backup Ammonia Flare No.1
AD-007	Backup Ammonia Flare No.2
Nitric Acid Plants – Catalytic Ammonia Oxidation Process (AOP) with water absorption to produce aqueous nitric acid.	
AE-003	No. 6 Nitric Acid Plant with emissions controlled by an extended absorption tower and selective catalytic reduction. Rated Capacity: 18.75 tons/hr (100% acid)
AE-005	No. 8 Nitric Acid Plant with emissions controlled by selective catalytic reduction. Rated Capacity: 47.92 tons/hr (100% acid)
AE-006	No. 9 Nitric Acid Plant with emissions controlled by selective catalytic reduction. Rated Capacity: 29.79 tons/hr (100% acid)
AE-007	No. 10 Nitric Acid Plant with emissions controlled by selective catalytic reduction. Rated Capacity: 29.79 tons/hr (100% acid)

Emission Point	Description
Ammonia Nitrate Fertilizer (ANF) Plant – Neutralization of nitric acid and ammonia (anhydrous and urea off-gas) to produce aqueous ammonium nitrate (AN). The aqueous product is subsequently used to produce high-density ammonium nitrate (HDAN) prills, low-density ammonium nitrate (LDAN) prills, and/or an aqueous blend of ammonium nitrate and urea. Rated Capacity: 2,750 tons/day HDAN synthesis or 1,500 tons/day of LDAN	
AF-001	Neutralizer Condenser/Concentrator (Manning and Lewis) which acts as a scrubber for control of emissions from the condenser for the Nos. 2, 3, 4, 5, and 6 neutralizers.
AF-002	No. 2 Prill Tower Mist Eliminator Scrubber for control of emissions from the No. 2 prill tower, the No. 2 high density evaporator, the No. 3 evaporator, and the No. 4 evaporator.
AF-003	No. 3 Prill Tower Mist Eliminator Scrubber for control of emissions from the No. 3 prill tower and No. 1 evaporator.
AF-004	Combined stack for emissions from the following processes: (1) No. 2 Finishing Train Pre-Dryer equipped with a Buell scrubber, (2) No. 2 Finishing Dryer equipped with a Buell scrubber, (3) No. 2 ANF Finishing Train Cooler equipped with a Buell scrubber, (4) No. 3 ANF Finishing Train Pre-Cooler equipped with a Fly Ash Arrestor scrubber, (5) No. 3 Train Cooler equipped with a Fly Ash Arrestor scrubber, (6) No. 4 ANF Finishing Train Pre-Cooler equipped with a Fly Ash Arrestor scrubber, (7) No. 4 ANF Finishing Train Cooler equipped with a Fly Ash Arrestor scrubber, (8) No. 4 ANF Finishing Train Pre-Dryer controlled by the Fly Ash Arrestor scrubber following the No. 4 Finishing Train Pre-Cooler, and (9) No. 4 ANF Finishing Train Dryer controlled by the Fly Ash Arrestor scrubber following the No. 4 Finishing Train Cooler
Urea Plant – Anhydrous ammonia and carbon dioxide are reacted to produce aqueous urea solution which is blended to produce liquid fertilizer. Rated Capacity: 26.04 tons/hr (100% urea) (There are no emission points associated with this plant because this plant does not emit any regulated pollutants.)	
Reciprocating Internal Combustion Engines and Other Miscellaneous Sources	
AB-004	Emergency Generator Engine. Natural gas-fired; Rated Capacity: 490 hp (1.25 MMBtu/hr), 4SLB; pre-2006 Model
AJ-004	No.1 Firewater Pump Engine. Diesel-fired; Rated Capacity: 208 hp (1.18 MMBtu/hr); pre-2005 Model
AJ-005	No.2 Firewater Pump Engine. Diesel-fired; Rated Capacity: 208 hp (1.18 MMBtu/hr); pre-2005 Model
AK-003	No. 4 Water Well Pump Engine. Diesel-fired; Emergency pump used to provide cooling water during power loss. Rated Capacity: 190 hp (1.08 MMBtu/hr); pre-2005 Model
AK-004	No. 6 Water Well Pump Engine. Diesel-fired; Emergency pump used to provide cooling water during power loss. Rated Capacity: 190 hp (1.08 MMBtu/hr); pre-2005 Model
AK-005	Storm Water Flood Pump Engine. Diesel-fired; Emergency pump used to prevent plant flooding. Rated capacity: 209 hp (1.18 MMBtu/hr) pre-2005 Model
AK-007	SP-6 Process Vent closed during normal operation but may vent process gas during startups and shutdowns.
AK-009	PIC-4 Vent closed during normal operation but may vent process gas during startups and shutdowns.

Emission Point	Description
AK-010	PIC-5 Vent closed during normal operation but may vent process gas during startups and shutdowns.
AK-011	No.17 Water Well Backup Generator Engine. Diesel-fired; Rated Capacity: 480 hp; Provides backup power to avoid loss of critical cooling water; 2012 Model
AK-012	IT Backup Emergency Generator Engine. Natural Gas-fired; Rated Capacity: 49 hp, 4SRB; 2013 Model
AK-013	Technical Services Backup Emergency Generator Engine. Natural Gas-fired; Rated Capacity: 25 hp, 4SRB; pre-2006 model
AW-023	Onan Emergency Generator Engine. Natural Gas-fired; Rated Capacity: 100 hp, 4SLB; pre-2006 Model.
AW-065	Underground Gasoline Dispensing Tank. Horizontal Fixed Roof Tank. Capacity: 10,152 gallons
AW-125	Port Gasoline Tank. Horizontal Fixed Roof Tank. Capacity: 560 gallons
Cooling Towers	
AW-015	No. 3 Cooling Tower
AW-017	No. 4 Cooling Tower
AW-018	No. 7 Cooling Tower
AW-019	No. 8 Cooling Tower
AW-020	No. 9 Cooling Tower
AW-021	No. 10 Cooling Tower

SECTION 3. EMISSION LIMITATIONS & STANDARDS

A. Facility-Wide Emission Limitations & Standards

3.A.1 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty (40) percent opacity subject to the exceptions provided in (a) & (b).

(a) Startup operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one hour and not to exceed three (3) startups per stack in any twenty-four (24) hour period.

(b) Emissions resulting from soot blowing operations shall be permitted provided such emissions do not exceed 60 percent opacity, and provided further that the aggregate duration of such emissions during any twenty-four (24) hour period does not exceed ten (10) minutes per billion BTU gross heating value of fuel in any one hour. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.A.)

3.A.2 Except as otherwise specified or limited herein, the permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of 40% opacity, equivalent to that provided in Paragraph 3.A.1. This shall not apply to vision obscuration caused by uncombined water droplets. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.B.)

B. Emission Point Specific Emission Limitations & Standards

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AB-001, AB-002, AD-003, AD-005	40 CFR 63, Subpart DDDDD (§63.7485)	3.B.1	HAP	Applicability
	40 CFR 63, Subpart DDDDD (§63.7500(e))	3.B.2		Standards apply at all times
AB-001	Permit to Construct issued September 12, 1995	3.B.3	NO_x	71.5 lb/hr and 313.2 tpy
	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b)	3.B.4	PM (filterable only)	$E = 0.8808*I^{-0.1667}$
	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1)	3.B.5	SO_2	4.8 lb/MMBtu
	Title V Operating Permit issued December 15, 2006	3.B.6	Fuel type	Natural gas only
AB-002	Permit to Construct issued September 16, 1999	3.B.7 and 3.B.8	Boiler operating conditions	1) Auxiliary Boiler No. 2 shall be operated at a standby firing rate not to exceed 6,000 scfh when the Cogeneration Facility and Auxiliary Boiler No. 1 are on stream. 2) Auxiliary Boiler No. 2 shall not be operated at a rate exceeding the capacity of Auxiliary Boiler No. 1 (i.e., 127.5 Mscfh) when the Cogeneration Facility is on stream and Auxiliary Boiler No. 1 is down. 3) Auxiliary Boiler No. 2 may be operated at design capacity when the Cogeneration Facility is down.
	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b)	3.B.4	PM (filterable only)	$E = 0.8808*I^{-0.1667}$
	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1)	3.B.5	SO_2	4.8 lb/MMBtu
	Title V Operating Permit issued December 15, 2006	3.B.6	Fuel type	Natural gas only
AB-003	Permit to Construct issued September 12, 1995 and 40 CFR	3.B.3, 3.B.9, and	NO_x	263 ppmvd at 15% O_2, not to exceed 243.4 lb/hr and 1,066.3 tpy

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
	Part 60, Subpart GG – NSPS for Stationary Gas Turbines (§60.332(a) and §60.333(a) and (b))	3.B.10	SO_2	150 ppmvd at 15% O_2, not to exceed 9.1 lb/hr and 40.0 tpy
			Fuel restriction	$\leq$ 0.8 percent sulfur by weight
	40 CFR 63, Subpart YYYY, NESHAP for Stationary Combustion Turbines (§63.6090(b)(4))	3.B.11	HAP	Nominal applicability Existing turbines do not have to meet requirements of this subpart.
	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b)	3.B.4	PM (filterable only)	$E = 0.8808*I^{-0.1667}$
No. 3 (Kellogg) Ammonia Plant				
AD-001, AD-005 and Urea Plant	Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**)	3.B.12	CO_2e	1,059,339 ton/yr
AD-003	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b)	3.B.4	PM (filterable only)	$E = 0.8808*I^{-0.1667}$
	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1)	3.B.5	SO_2	4.8 lb/MMBtu
	Title V Operating Permit issued January 6, 2000	3.B.6	Fuel Type	Natural gas only
AD-004	Title V Operating Permit issued January 6, 2000	3.B.6	Fuel Type	Natural gas only for pilot light. Flare burns off gas (primarily ammonia) during a flaring event
AD-004, AD-006, AD-007	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a)	3.B.13	PM (filterable only)	0.6 lb/MMBtu
	11 Miss. Admin. Code Pt. 2, R. 1.4.B(1)	3.B.14	SO_2	$\leq$ 500ppm
AD-005	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b)	3.B.4	PM (filterable only)	$E = 0.8808*I^{-0.1667}$
	11 Miss. Admin. Code Pt. 2, R. 1.4.A(1)	3.B.5	SO_2	4.8 lb/MMBtu
	Title V Operating Permit issued December 15, 2006	3.B.6	Fuel Type	Natural gas and process purge gas only

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
	Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**)	3.B.15	NOx	Fuel Firing Limits (MMBtu/yr) Primary and Tunnel Burners: • Natural Gas – 5,885,444 • Purge Gas – 483,490 Auxiliary Boiler and Superheat Burners: • Natural Gas – 919,324
Nitric Acid Plants				
AE-003	Permit to Construct issued September 12, 1995	3.B.3	NO_x	10 lb/ton of 100% acid, not to exceed 187.5 lb/hr and 821.3 tpy ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see below).*
	Permit to Construct issued – June 23, 2014 **NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ.**	3.B.16 3.B.17	NOx	<u>Short-Term (3-hour rolling average):</u> 1.0 lb/ton of 100% acid (18.75 lb/hr) <u>Long-Term (365-day rolling average):</u> 0.6 lb/ton of 100% acid (49.28 tpy)
	40 CFR Part 60, Subpart G, NSPS for Nitric Acid Plants (§60.72(a)(1) and (2))	3.B.18	NO_x	3.0 lb/ton of 100% acid (3-hour average) ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*
			Opacity	<10%
AE-005	Permit to Construct issued September 12, 1995	3.B.3	NO_x	143.7 lb/hr and 629.6 tpy ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see below).*

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
	Permit to Construct issued - June 23, 2014 **NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ.**	3.B.16 3.B.17	NOx	Short-Term (3-hour rolling average): 1.0 lb/ton of 100% acid (47.92 lb/hr) Long-Term (365-day rolling average): 0.6 lb/ton of 100% acid (125.93 tpy)
	40 CFR Part 60, Subpart G, NSPS for Nitric Acid Plants (§60.72(a)(1) and (2))	3.B.18	NO_x	3.0 lb/ton of 100% acid (3-hour average) ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*
			Opacity	<10%
AE-006	Permit to Construct issued September 12, 1995	3.B.3	NO_x	89.4 lb/hr and 391.5 tpy ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see below).*
	Permit to Construct issued September 27, 2012 **NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ.**	3.B.16 3.B.17	NOx	Short-Term (3-hour rolling average): 1.0 lb/ton of 100% acid (29.79 lb/hr) Long-Term (365-day rolling average): 0.6 lb/ton of 100% acid (78.29 tpy)
	40 CFR Part 60, Subpart G, NSPS for Nitric Acid Plants (§60.72(a)(1) and (2))	3.B.18	NO_x	3.0 lb/ton of 100% acid (3-hour average) ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*
			Opacity	<10%

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AE-007	Permit to Construct issued January 14, 1997	3.B.19	NO_x	89.4 lb/hr and 391.5 tpy ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see below).*
	Permit to Construct issued September 27, 2012 **NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ.**	3.B.16 3.B.17	NOx	<u>Short-Term (3-hour rolling average):</u> 1.0 lb/ton of 100% acid (29.79 lb/hr) <u>Long-Term (365-day rolling average):</u> 0.6 lb/ton of 100% acid (78.29 tpy)
	40 CFR Part 60, Subpart G, NSPS for Nitric Acid Plants (§60.11(c) and 60.72(a)(1) and (2))	3.B.18	NO_x	3.0 lb/ton of 100% acid (3-hour average) ***NOTE:*** *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*
			Opacity	<10%
Ammonium Nitrate Fertilizer (ANF) Plant				
AF-001	Permit to Construct issued February 26, 1991, and modified on December 29, 1992; May 24, 1994; and October 11, 1994	3.B.20	PM/PM_{10} (filterable only)	12.4 lb/hr and 54.3 tpy
AF-002	PSD Construction Permit issued September 21, 2004	3.B.21	PM/PM_{10} (filterable only)	34.0 lb/hr and 148.9 tpy
AF-003	PSD Construction Permit issued January 11, 2006	3.B.22	PM/PM_{10} (filterable only)	17.0 lb/hr and 74.46 tpy
AF-004	PSD Construction Permit issued January 11, 2006	3.B.22	PM/PM_{10} (filterable only)	72.10 lb/hr and 315.80 tpy
Reciprocating Internal Combustion Engines and Other Miscellaneous Sources				

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013, AW-023	40 CFR 63, Subpart ZZZZ (§63.6590)	3.B.23	HAP	Applicability
	40 CFR 63, Subpart ZZZZ (§63.6640(f)	3.B.24		Limit non-emergency engine operation to 100 hours per year.
	40 CFR 63, Subpart ZZZZ (§63.6602,§63.6625(h) and Table 2c)	3.B.25		Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes
AB-004	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a)	3.B.13	PM (filterable only)	0.6 lb/MMBtu
	Title V Operating Permit issued December 15, 2006	3.B.6	Fuel Type	Natural gas only
AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-011, AK-012, AK-013, AW-023	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a)	3.B.13	PM (filterable only)	0.6 lb/MMBtu
AK-011	40 CFR 63, Subpart ZZZZ (§63.6590(c)(6))	3.B.26	HAP	Applicability
	40 CFR 60, Subpart IIII (§60.4200(a)(2)(i))	3.B.27	NMHC+NOx, PM (filterable only), CO, SO_2	Applicability
	40 CFR 60, Subpart IIII (§60.4206, §60.4205(b), §60.4202(a)(2) and §89.112(a) – Table 1)	3.B.28	NMHC + NOx CO PM (filterable only)	4.0 g/kW-hr 3.5 g/kW-hr 0.2 g/kW-hr
	40 CFR 60, Subpart IIII (§60.4207(b) and §80.510(b))	3.B.29	SO_2	Maximum diesel sulfur content of 15ppm Minimum cetane index of 40 or maximum aromatic content of 35 volume percent.

Emission Point(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
	40 CFR 60, Subpart IIII (§60.4211(f))	3.B.30	NMHC+NOx, PM (filterable only), CO, SO_2	Limit non-emergency engine operation to 100 hours per year.
AK-012	40 CFR 63, Subpart ZZZZ (§63.6590(c)(6))	3.B.26	HAP	Applicability
	40 CFR 60, Subpart JJJJ (§60.4230(a)(4)(iv))	3.B.31	NOx+HC, CO	Applicability
	40 CFR 60, Subpart JJJJ (§60.4233(d) and Table 1)	3.B.32	NOx+HC CO	10 g/hp-hr 387 g/hp-hr
	40 CFR 60, Subpart JJJJ (§60.4243(d))	3.B.33	NOx+HC, CO	Limit non-emergency engine operation to 100 hours per year.

3.B.1 Beginning January 31, 2016, Emission Points AB-001, AB-002, AD-003, and AD-005 are subject to and shall comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD.

Emission Points AB-001 and AB-002 are existing large boilers that are in the units designed to burn gas 1 fuel subcategory and Emission Points AD-003 and AD-005 are existing process heaters that are in the units designed to burn gas 1 fuel subcategory. As such, these units have no emission or operating limits and are only required to comply with the applicable work practice standards found in Section 3.D of this permit.

(Ref.: 40 CFR 63.7485, Subpart DDDDD)

3.B.2 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003, and AD-005 , the permittee must be in compliance with the 40 CFR 63, Subpart DDDDD standards at all times, except during periods of startup and shutdown, during which time permittee must comply only with Table 3 of 40 CFR 63, Subpart DDDDD.

(Ref.: 40 CFR 63.7500(e), Subpart DDDDD)

3.B.3 For Emission Points AB-001, AB-003, AE-003, AE-005, and AE-006, the permittee shall comply with the limits established in the Permit to Construct issued September 12, 1995. These limits are specifically stated in Table 3.B for each emission point.

NOTE: *For Emission Points AE-003, AE-005 and AE-006 this limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA.*

3.B.4 For Emission Points AB-001, AB-002, AB-003, AD-003 and AD-005, the permittee shall not have particulate emissions from fossil fuel burning installations of greater than 10 million BTU per hour heat input that exceeds the emission rate as determined by the relationship $E = 0.8808*I^{-0.1667}$, where E is the emission rate in pounds per million BTU per hour heat input and I is the heat input in millions of BTU per hour.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).)

3.B.5 For Emission Points AB-001, AB-002, , AD-003, and AD-005, the permittee shall not discharge sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer in excess of 4.8 pounds (measured as sulfur dioxide) per million BTU heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).)

3.B.6 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AB-004, AD-003, AD-004, and AD-005 the permittee shall only burn the fuels designated in the Table 3.B above.

(Ref.: Title V Operating Permit issued December 15, 2006)

3.B.7 Beginning January 31, 2016, for Emission Point AB-002, the permittee shall comply with the limits established in the Permit to Construct issued September 16, 1999. These limits are specifically stated in Table 3.B for the emission point.

3.B.8 Beginning January 31, 2016, for Emission Point AB-002, the Auxiliary Boiler No.2, the permittee shall comply with the following operating restrictions:

(a) Auxiliary Boiler No. 2 shall be operated at a standby firing rate not to exceed 6,000 scfh when the Cogeneration Facility and Auxiliary Boiler No. 1 are on stream.

(b) Auxiliary Boiler No. 2 shall be operated at a rate not to exceed the capacity of Auxiliary Boiler No. 1 (i.e., 127.5 Mscfh) when the Cogeneration Facility is on stream and Auxiliary Boiler No. 1 is down.

(c) Auxiliary Boiler No. 2 may be operated at its design capacity when the Cogeneration Facility is down.

(Ref.: Permit to Construct issued September 16, 1999)

3.B.9 Beginning January 31, 2016, for Emission Point AB-003, the concentration-based emission limitations (i.e., ppmv) are applicable to the gas turbine only. The lb/hr and tpy emission limitations apply to the total emissions from the gas turbine and waste heat boiler.

(Ref.: Permit to Construct issued September 12, 1995)

3.B.10 Emission Point AB-003 is subject to and shall comply with the New Source Performance Standards for Stationary Gas Turbines (40 CFR Part 60, Subpart GG) and the General Provisions (40 CFR Part 60, Subpart A).

(a) The permittee shall not discharge any gases containing nitrogen oxides in excess of 263 ppmv at 15% oxygen on a dry basis from the stationary gas turbine. (Ref.: 40 CFR 60.332(a), Subpart GG)

(b) The permittee shall not discharge any gases containing sulfur dioxide in excess of 150 ppmv at 15 percent oxygen and on a dry basis from the stationary gas turbine. (Ref.: 40 CFR 60.333(a), Subpart GG)

(c) The permittee shall not burn any fuel containing total sulfur in excess of 0.8 percent by weight (800 ppmw) in the stationary gas turbine. (Ref.: 40 CFR 60.333(b), Subpart GG)

3.B.11 Emission Point AB-003 is subject to, but does not have to comply with the requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (40 CFR 63, Subpart YYYY).

(Ref.: 40 CFR 63.6090(b)(4), Subpart YYYY)

3.B.12 For Emission Points AD-001, AD-005 and the Urea Plant. the permittee shall limit the total combined CO_2e emissions, $\mathbf{(CO_2e)_{NH3/Urea}}$, from AD-001 and AD-005, offset by the CO_2 consumed in the Urea Plant, to 1,059,339 tons/year as determined on a 12-month rolling basis by the following equation.

$$\mathbf{(CO_2e)_{NH3/Urea} = 995{,}091 + (CO_2e)_{NH3\ Plant\ Vent} + (CO_2e)_{Reformer} - (CO_2e)_{Urea\ Plant}}$$

Where:

$\mathbf{(CO_2e)_{NH3/Urea}}$ is the CO_2e emissions (tons/year) associated with the production of ammonia and urea. $\mathbf{(CO_2e)_{NH3/Urea}}$ is determined by adding the pre-2012 Turnaround baseline CO_2e emissions of 995,091 tons/year, the Ammonia Plant's CO_2 Vent (AD-

001) emissions and the Reformer (AD-005) combustion emissions, then subtracting the CO_2 consumed in the production of urea.

$(CO_2e)_{NH3\ Plant\ Vent}$ shall be determined by multiplying the natural gas process feedstock to the Ammonia Plant Reformer (MMscf) by the factor 59.21 ton CO_2/MMscf.[1]

$(CO_2e)_{Reformer}$ shall be determined by multiplying the natural gas fuel combusted in the Ammonia Plant Reformer (MMscf) by the factor 60.12 ton CO_2e/MMscf.[2]

$(CO_2e)_{Urea\ Plant}$ shall be determined by multiplying the urea production (tons) by the factor 0.7328 ton CO_2 consumed/ton urea produced.[3]

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

3.B.13 For Emission Points AB-004, AD-004, AD-006, AD-007, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-011, AK-012, AK-013 and AW-023 the maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).)

3.B.14 For Emission Points AD-004, AD-006 and AD-007, the permittee shall not cause or permit the emission of gas containing sulfur oxides (measured as sulfur dioxide) in excess of 500 ppm (volume).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.B(1).)

3.B.15 For Emission Point AD-005, the permittee shall limit the fuel firing rates, as listed below, to avoid a significant net increase of NOx emissions (**PSD Avoidance Limit**) from the 2012 Ammonia Plant Turnaround, as determined on a 12-month rolling basis.

Primary and Tunnel Burners:	
Natural Gas Firing	5,885,444 MMBtu/year

[1] The factor 59.21 ton CO_2/MMscf is derived from Eq. G-1 of 40 CFR 98.73(b)(1), where the following values for natural gas are assumed: CCn = 0.725 kg C/kg feedstock and MW = 17.155 kg/kg-mole.

[2] The factor 60.12 tons CO_2e/MMscf was derived from EPA default factors in U.S. EPA, 40 CFR 98, Subpart A, Table A-1 and Subpart C, Tables C-1 and C-2 for natural gas, December 2010. Emissions were then converted from kilograms to short tons, and the heating value of natural gas (1028 Btu/scf) was used to convert MMBtu to MMscf.

[3] The factor 0.7328 tons CO_2 consumed/ton urea produced is a ratio of the molecular weight of carbon dioxide (44.01) to urea (60.06), which corresponds to the stoichiometry of the urea reaction where exactly one mole of carbon dioxide is consumed for every mole of urea produced.

Purge Gas Firing 483,490 MMBtu/year

Auxiliary Boiler and Superheat Burners (natural gas) 919,324 MMBtu/year

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

3.B.16 For Emission Points AE-003, AE-005, AE-006 and AE-007, the permittee shall not discharge any gases which contain nitrogen oxides, expressed as NOx, in excess of 1.0 pounds per ton of acid produced on a 3-hour rolling average, rolled hourly (which corresponds to the short-term NOx emission limits listed for the respective nitric acid plants in the following table), the production being expressed as 100% nitric acid. Compliance with this limit will be calculated in accordance with the CEMS Plan contained in Appendix B. This emission limit shall apply at all times except periods of startup, shutdown, or malfunction.

Emission Point	Nitric Acid Plant	NOx Emission Limit (lb/hr)
AE-003	AOP-6	18.75
AE-005	AOP-8	47.92
AE-006	AOP-9	29.79
AE-007	AOP-10	29.79

(Ref.: **Permits to Construct issued September 27, 2012 and June 23, 2014; NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ**.)

3.B.17 For Emission Points AE-003, AE-005, AE-006 and AE-007, the permittee shall not discharge any gases which contain nitrogen oxides, expressed as NOx, in excess of 0.6 pounds per ton of acid produced on a 365-day rolling average, rolled daily (which corresponds to the annual NOx emission limits listed for the respective nitric acid plants in the following table), the production being expressed as 100% nitric acid. Compliance with this limit will be calculated in accordance with the CEMS Plan contained in Appendix B.

Emission Point	Nitric Acid Plant	NOx Emission Limit (tons/yr)

AE-003	AOP-6	49.28
AE-005	AOP-8	125.93
AE-006	AOP-9	78.29
AE-007	AOP-10	78.29

NOTE: *For Emission Points AE-003 and AE-005, the deadlines for demonstrating compliance with the long term NOx emission limit are March 31, 2015 and June 30, 2015, respectively.*(Ref.: **Permits to Construct issued September 27, 2012 and June 23, 2014; NOx emission limits were established pursuant to a 2011 negotiated Consent Decree with EPA and cannot be relaxed without the approval of EPA and MDEQ.**)

3.B.18 Emission Points AE-003, AE-005, AE-006, and AE-007 are subject to and shall comply with the New Source Performance Standards for Nitric Acid Plants (40 CFR Part 60, Subpart G) and the General Provisions (40 CFR Part 60, Subpart A). The following emission limits shall apply.

(a) The permittee shall not discharge any gases which contain nitrogen oxides, expressed as NO_2, in excess of 3.0 pounds per ton of acid produced (3-hour average), the production being expressed as 100% nitric acid. (Ref.: §60.72(a)(1))

NOTE: *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*

(b) The permittee shall not discharge any gases which exhibit 10 percent opacity or greater, except during periods of startup, shutdown, or malfunction.

(Ref.: 40 CFR 60.11(c) and 60.72(a)(1) and (2), Subpart A and 2011 negotiated Consent Decree with EPA)

3.B.19 For Emission Point AE-007, the permittee shall comply with the limits established in the Permit to Construct issued on January 14, 1997. These limits are specifically stated in Table 3.B.

NOTE: *This limit is superseded by the limit specified in the 2011 negotiated Consent Decree with EPA (see above).*

3.B.20 For Emission Point AF-001, the permittee shall comply with the limits established in the

Permit to Construct issued February 26, 1991, and modified December 29, 1992; May 24, 1994; and October 11, 1994. These limits are specifically stated in Table 3.B for each emission point.

3.B.21 For Emission Point AF-002, the permittee shall comply with the limits established in the PSD Permit to Construct issued September 21, 2004. These limits are specifically stated in Table 3.B for each emission point.

3.B.22 For Emission Points AF-003 and AF-004, the permittee shall comply with the emission limits established in the PSD Permit to Construct issued January 11, 2006. These limits are specifically stated in Table 3.B for each emission point.

3.B.23 Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023 are subject to and shall comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63, Subpart ZZZZ.

Emission Points AB-004 and AW-023 are existing emergency 4-stroke lean burn spark ignition stationary RICE less than 500 HP located at a major source of HAP emissions. The engines are emergency stationary RICE provided they meet the definition in §63.6675.

Emission Point AK-013 is an existing emergency 4-stroke rich burn spark ignition stationary RICE less than 500 HP located at a major source of HAP emissions. The engine is an emergency stationary RICE provided it meets the definition in §63.6675.

Emission Points AJ-004, AJ-005, AK-003, AK-004, and AK-005 are existing emergency compression ignition stationary RICE less than 500 HP located at a major source of HAP emissions. The engines are emergency stationary RICE provided they meet the criteria outlined in §63.6640(f) and the definition in §63.6675.

(Ref.: 40 CFR 63.6590, 63.6640(f) and 63.6675, Subpart ZZZZ)

3.B.24 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall operate the emergency stationary RICE according to the following requirements. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per calendar year is prohibited. If the engine(s) is not operated according to these requirements, the engine(s) will not be considered an emergency engine(s) under this subpart and shall meet all requirements for non-emergency engines.

(a) There is no time limit on the use of emergency stationary RICE in emergency situations.

(b) The permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to a maximum of 100 hours per calendar year. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(c) The permittee may operate the emergency stationary RICE up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 63.6640(f), Subpart ZZZZ)

3.B.25 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall minimize the engines' time spent at idle during startup and minimize the engines' startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

(Ref.: 40 CFR 63.6602, 63.6225(h) and Table 2c, Subpart ZZZZ)

3.B.26 For Emission Points AK-011 and AK-012, permittee is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). Emission Points AK-011 and AK-012 are new emergency stationary RICE with site ratings less than 500 HP located at a major source of HAP emissions; therefore, compliance with Subpart ZZZZ is achieved by meeting all applicable requirements of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart IIII (AK-011) and New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart JJJJ (AK-012).

(Ref.: 40 CFR 63.6590(c)(6), Subpart ZZZZ)

3.B.27 For Emission Point AK-011, the permittee is subject to and shall comply with the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII) and the General Provisions (40 CFR 60, Subpart A).

(Ref.: 40 CFR 60.4200(a)(2)(i), Subpart IIII)

3.B.28 For Emission Point AK-011, the permittee shall operate and maintain the engine to achieve the following emission standards over the entire life of the engine.

(a) The permittee shall not discharge any gases containing a sum of nonmethane hydrocarbon and nitrogen oxides in excess of 4.0 grams/kilowatt-hour

(b) The permittee shall not discharge any gases containing carbon monoxide in excess of 3.5 grams/kilowatt-hour

(c) The permittee shall not discharge any gases containing particulate matter in excess of 0.2 grams/kilowatt-hour

(Ref.: 40 CFR 60.4206, 60.4205(b), 60.4202(a)(2), Subpart IIII and Table 1 of 89.112(a))

3.B.29 For Emission Point AK-011, the permittee must purchase diesel fuel that meets the following requirements.

(a) Maximum sulfur content of 15ppm

(b) Minimum cetane index of 40 or maximum aromatic content of 35 volume percent

(Ref.: 40 CFR 60.4207(b), Subpart IIII and 80.510(b))

3.B.30 For Emission Point AK-011, the permittee shall operate the emergency stationary RICE according to the following requirements. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per calendar year is prohibited. If the engine(s) is not operated according to these requirements, the engine(s) will not be considered an emergency engine(s) under this subpart and shall meet all requirements for non-emergency engines.

(a) There is no time limit on the use of emergency stationary RICE in emergency situations.

(b) The permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to a maximum of 100 hours per calendar year. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(c) The permittee may operate the emergency stationary RICE up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 60.4211(f), Subpart IIII)

3.B.31 For Emission Point AK-012, the permittee is subject to and shall comply with the New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ) and the General Provisions (40 CFR 60, Subpart A).

(Ref.: 40 CFR 60.4230(a)(4)(iv), Subpart JJJJ)

3.B.32 For Emission Point AK-012, the permittee shall operate and maintain the engine to achieve the following emission standards over the entire life of the engine.

(a) The permittee shall not discharge any gases containing a sum of nitrogen oxides and hydrocarbon in excess of 10 grams/horsepower-hour

(b) The permittee shall not discharge any gases containing carbon monoxide in excess of 387 grams/horsepower-hour

(Ref.: 40 CFR 60.4233(d) and Table 1 of Subpart JJJJ)

3.B.33 For Emission Point AK-012, the permittee shall operate the emergency stationary RICE according to the following requirements. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per calendar year is prohibited. If the engine(s) is not operated according to these requirements, the engine(s) will not be considered an emergency engine(s) under this subpart and shall meet all requirements for non-emergency engines.

(a) There is no time limit on the use of emergency stationary RICE in emergency situations.

(b) The permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to a maximum of 100 hours per calendar year. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(c) The permittee may operate the emergency stationary RICE up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity

(Ref.: 40 CFR 60.4243(d), Subpart JJJJ)

C. Insignificant and Trivial Activity Emission Limitations & Standards

Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Limit/Standard
11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).	3.C.1	PM	0.6 lbs/MMBTU
11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).	3.C.2	SO_2	4.8 lbs/MMBTU

3.C.1 The maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).)

3.C.2 The maximum discharge of sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer shall not exceed 4.8 pounds (measured as sulfur dioxide) per million BTU heat input. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A(1).)

D. Work Practices

Emission Points(s)	Applicable Requirement	Condition Number(s)	Pollutant/ Parameter	Work Practice
AB-001 AB-002 AD-003 AD-005	40 CFR 63, Subpart DDDDD (§63.7510(e); Table 3 and §63.7575)	3.D.1 3.D.6 3.D.7	HAP	Conduct one-time energy assessment by January 31, 2016
AB-001 AB-002 AD-005	40 CFR 63, Subpart DDDDD (§63.7515(d) and §63.7540(a)(12); §63.7540(a)(10); §63.7540(a)(13))	3.D.2 3.D.4 3.D.5	HAP	Conduct initial tune-up by January 31, 2016. Conduct periodic tune-ups every five (5) years thereafter.
AD-003	40 CFR 63, Subpart DDDDD (§63.7515(d) and §63.7540(a)(10); §63.7540(a)(10); §63.7540(a)(13))	3.D.3 3.D.4 3.D.5	HAP	Conduct initial tune-up by January 31, 2016. Conduct annual tune-ups thereafter.
AB-001 AB-002 AD-003 AD-005	40 CFR 63, Subpart DDDDD (§63.7500(a)(3))	3.D.8	HAP	Operate and maintain sources in a manner consistent with safety and good air pollution control practices for minimizing emissions.
AB-004, AK-013, AW-023	40 CFR 63. Subpart ZZZZ (§63.6602 and Table 2c)	3.D.9	HAP	Change oil and filter every 500 hours of operation or annually; inspect spark plugs every 1,000 hours of operation or annually; and inspect all hoses and belts every 500 hours of operation or annually.
AJ-004, AJ-005, AK-003, AK-004, AK-005	40 CFR 63. Subpart ZZZZ (§63.6602 and Table 2c)	3.D.10	HAP	Change oil and filter every 500 hours of operation or annually; inspect air cleaner every 1,000 hours of operation or annually; and inspect all hoses and belts every 500 hours of operation or annually.
AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013, AW-023	40 CFR 63. Subpart ZZZZ (§63.6602 and Table 2c)	3.D.11	HAP	Oil Analysis Program

AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013, AW-023	40 CFR 63. Subpart ZZZZ (§63.6625(e), §63.6640(a); §6605 and Table 6)	3.D.12 3.D.13	HAP	Operate and maintain engine according to the manufacturer's emission-related written instructions or develop maintenance plan, which must be consistent with good air pollution control practices to minimize emissions.
AK-011	40 CFR 60, Subpart IIII (§60.4211(a))	3.D.14	NMHC+NOx, PM (filterable only), CO, SO_2	Operate and maintain engine according manufacturer's emission-related instructions.
AK-012	40 CFR 60, Subpart JJJJ (§60.4243(a))	3.D.15	NOx + HC, CO	Operate and maintain engine according manufacturer's emission-related instructions.

3.D.1 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee must complete an initial tune-up by following the procedures described in 63.7540(a)(10)(i) through (vi) and complete the one-time energy assessment specified in Table 3 of 40 CFR 63, Subpart DDDDD, both no later than January 31, 2016. The tune-up and energy assessment procedures are outlined in the following permit conditions.

(Ref.: 40 CFR 63.7510(e), Subpart DDDDD)

3.D.2 Beginning January 31, 2016, for Emission Points AB-001, AB-002, and AD-005 (which are equipped with continuous oxygen trim systems to maintain optimum air/fuel ratios), the permittee must conduct tune-up every 5 years, with each tune-up being performed no more than 61 months after the previous tune-up. Permittee may delay the burner inspection until the next scheduled or unscheduled unit shut down, but the burner must be inspected once every 72 months.

(Ref.: 40 CFR 63.7515(d) and 63.7540(a)(12), Subpart DDDDD)

3.D.3 Beginning January 31, 2016, for Emission Point AD-003 (which is <u>not</u> equipped with a continuous oxygen trim system to maintain optimum air/fuel ratio), the permittee must conduct annual tune-ups with each tune-up being performed no more than 13 months after the previous tune-up.

(Ref.: 40 CFR 63.7515(d) and 63.7540(a)(10), Subpart DDDDD)

3.D.4 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee must conduct tune-ups to demonstrate continuous compliance as specified in the following paragraphs.

(a) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (permittee may delay the burner inspection until the next scheduled or unscheduled unit shutdown);

(b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (permittee may delay the inspection until the next scheduled shutdown);

(d) Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject;

(e) Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and

(f) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (1) through (3) of this below,

(1) The concentrations of carbon monoxide in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the unit;

(2) A description of any corrective actions taken as a part of the tune-up; and

(3) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(Ref.: 40 CFR 63.7540(a)(10), Subpart DDDDD)

3.D.5 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003, and AD-005, if the emission point is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

(Ref.: 40 CFR 63.7540(a)(13), Subpart DDDDD)

3.D.6 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee must have a one-time energy assessment performed by a qualified energy assessor by January 31, 2016. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of evaluation for items (a) through (e) appropriate for the on-site technical hours specified for the energy assessment:

(a) A visual inspection of the boiler or process heater system.

(b) An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.

(c) An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.

(d) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.

(e) A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.

(f) A list of cost-effective energy conservation measures that are within the facility's control.

(g) A list of the energy savings potential of the energy conservation measures identified.

(h) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

(Ref.: 40 CFR 63, Subpart DDDDD, Table 3)

3.D.7 For Emission Points AB-001, AB-002, AD-003, and AD-005, the energy assessment shall be of a duration as prescribed in §63.7575. The boiler systems, process heaters and any on-site energy use systems accounting for at least 20 percent of the energy production (i.e., steam, process heat, hot water, electricity, etc.), as applicable, shall be listed and evaluated to identify energy savings opportunities.

(Ref.: 40 CFR 63.7575, definition of Energy Assessment, paragraph 3, Subpart DDDDD)

3.D.8 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall, at all times, operate and maintain the affected sources, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Agency that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(Ref.: 40 CFR 63.7500(a)(3), Subpart DDDDD)

3.D.9 Emission Points AB-004, AK-013 and AW-023 are existing spark ignition (SI) emergency stationary RICE with site ratings less than or equal to 500 brake horsepower. These emission points shall comply with the following requirements except during periods of startup:

(a) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(b) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;

(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Section 3.B of this permit, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has

abated.

(Ref.: 40 CFR 63.6602 and Table 2c, Subpart ZZZZ)

3.D.10 Emission Points AJ-004, AJ-005, AK-003, AK-004 and AK-005 are existing compression ignition (CI) emergency stationary RICE with site ratings less than 500 brake horsepower. These emission points shall comply with the following requirements except during periods of startup:

(a) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;

(c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Section 3.B of this permit, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated.

(Ref.: 40 CFR 63.6602 and Table 2c, Subpart ZZZZ)

3.D.11 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee may choose to utilize an oil analysis program as outlined in Section 5.B of this permit in order to extend the specified oil change requirement in (a) above. The permittee may also petition the DEQ for use of an alternative work practice to (c) above and/or to the operational requirements for startup.

(40 CFR 63.6602 and Table 2c of Subpart ZZZZ)

3.D.12 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop its own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

(Ref.: 40 CFR 63.6625(e), 63.6640(a), and Table 6 of Subpart ZZZZ)

3.D.13 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall comply with the following:

(a) At all times, be in compliance with the emission limitations, operating limitations, and other applicable requirements in 40 CFR 63, Subpart ZZZZ.

(b) At all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to MDEQ which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(Ref.: 40 CFR 63.6605, Subpart ZZZZ)

3.D.14 For Emission Point AK-011, the permittee must follow the work practices listed below.

(a) Operate and maintain the engine and any associated control devices according to the manufacturer's emission–related written instructions;

(b) Change only those emission-related settings that are permitted by the manufacturer; and

(c) Meet the applicable requirements of 40 CFR, Parts 89 and/or 1068

3.D.15 (Ref.: 40 CFR 60.4211(a), Subpart IIII)For Emission Point AK-012, the permittee must comply with the emission standards prescribed in §60.4233(d) by following the work practices listed below.

(a) Purchasing an engine certified to the emission standards in Table 1 of Subpart JJJJ, as applicable;

(b) Operate and maintain the certified engine and any associated control device(s) according to the manufacturer's emission-related written instructions; and

(c) Limit engine adjustments to those that are according to and consistent with the manufacturer's instructions.

(40 CFR 60.4243(b), Subpart JJJJ)

SECTION 4. COMPLIANCE SCHEDULE

4.1 Unless otherwise specified herein, the permittee shall be in compliance with all requirements contained herein upon issuance of this permit.

4.2 Except as otherwise specified herein, the permittee shall submit to the Permit Board and to the Administrator of EPA Region IV a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, by January 31 for the preceding calendar year. Each compliance certification shall include the following:

(a) the identification of each term or condition of the permit that is the basis of the certification;

(b) the compliance status;

(c) whether compliance was continuous or intermittent;

(d) the method(s) used for determining the compliance status of the source, currently and over the applicable reporting period;

(e) such other facts as may be specified as pertinent in specific conditions elsewhere in this permit. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C(5)(a), (c), & (d).)

4.3 The permittee is subject to and shall comply with the applicable requirements of 40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. The permittee shall comply with the requirements of Subpart DDDDD as specified in Sections 3.B, 3.D, 5.B and 5.C of this permit no later than January 31, 2016.

4.4 The permittee is subject to and shall comply with all applicable requirements of the 2011 negotiated Consent Decree with EPA regarding the Nitric Acid Plants. The permittee shall comply with its applicable NOx emission limits, monitoring, performance testing, O&M Plan, permit submittal, and annual progress report requirements according to the compliance deadlines outlined in Attachment A of the Consent Decree.

SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

A. General Monitoring, Recordkeeping and Reporting Requirements

5.A.1 The permittee shall install, maintain, and operate equipment and/or institute procedures as necessary to perform the monitoring and recordkeeping specified below.

5.A.2 In addition to the recordkeeping specified below, the permittee shall include with all records of required monitoring information the following:

(a) the date, place as defined in the permit, and time of sampling or measurements;

(b) the date(s) analyses were performed;

(c) the company or entity that performed the analyses;

(d) the analytical techniques or methods used;

(e) the results of such analyses; and

(f) the operating conditions existing at the time of sampling or measurement. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(b)(1)(i) through (vi).)

5.A.3 Except as otherwise specified herein, the permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(b)(2).)

5.A.4 Except as otherwise specified herein, the permittee shall submit reports of any required monitoring by July 31 and January 31 for the preceding six-month period. All instances of deviations from permit requirements must be clearly identified in such reports and all required reports must be certified by a responsible official consistent with 11 Miss. Admin. Code Pt. 2, R. 6.2.E. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.A.5 Except as otherwise specified herein, the permittee shall report all deviations from permit requirements, including those attributable to upsets, the probable cause of such deviations, and any corrective actions or preventive measures taken. Said report shall be made

within five (5) days of the time the deviation began. (Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(2).)

5.A.6 Except as otherwise specified herein, the permittee shall perform emissions sampling and analysis in accordance with EPA Test Methods and with any continuous emission monitoring requirements, if applicable. All test methods shall be those versions or their equivalents approved by the DEQ and the EPA.

5.A.7 The permittee shall maintain records of any alterations, additions, or changes in equipment or operation.

B. Specific Monitoring and Recordkeeping Requirements

Emission Point(s)	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
Facility-wide	Control equipment	Perform regular maintenance as necessary and maintain a log of malfunctions and downtime.	5.B.1	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(3)
AB-001	NO_x	Biennial stack testing in accordance with EPA Reference Method 7B.	5.B.2	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AB-001, AB-002, AB-003	Fuel	Monitor and record the hourly gas flow to each emission point. These records may be maintained in electronic form on the facility's PI system.	5.B.3	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AB-003	NO_x	Biennial stack testing in accordance with EPA Reference Method 20 or Method 7E.	5.B.4	40 CFR 60, Subpart GG (§60.334(c))
	Fuel Requirement	Demonstrate that the gaseous fuel meets the definition of "natural gas"	5.B.5	40 CFR 60, Subpart GG (§60.334(h)(3))
AB-001, AB-002, AD-003, AD-005	HAP	Recordkeeping – Notifications, Compliance Demonstrations and Performance Evaluations	5.B.6	40 CFR 63, Subpart DDDDD (§63.7555(a))
		Recordkeeping – Startup and Shutdown	5.B.7	40 CFR63, Subpart DDDDD(§63.7555(i))
			5.B.8	40 CFR 63, Subpart DDDDD (§63.7555(j))
		Recordkeeping - General	5.B.9	40 CFR 63,

Emission Point(s)	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
				Subpart DDDDD (§63.7560)
AD-001, AD-005, Urea Plant	CO_2e	Recordkeeping – Production Data	5.B.10	Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**)
		Calculate CO2e emissions on a rolling 12-month basis.	5.B.11	
AD-005	NOx	Recordkeeping – Fuel Firing Rates	5.B.12	Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**)
		Calculate heat input on a rolling 12-month basis.	5.B.13	
AE-003, AE-005, AE-006, AE-007	Opacity	Using a correlation of NO_x concentration to opacity, continuously monitor NO_x concentration using a CEMS to determine compliance with the opacity limit.	5.B.14	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AE-003, AE-005, AE-006, AE-007	NO_x	Operate a continuous emissions monitoring system (CEMS) to demonstrate compliance with the lb/ton limits and tpy limits in accordance with CEMS Plan contained in Appendix C.	5.B.15	40 CFR 60, Subpart G (§60.73 (a) and (b)); and 2011 negotiated Consent Decree with EPA
	Production rate/hours of operation	Monitor and record the daily production rate and hours of operation	5.B.15	40 CFR 60, Subpart G (§60.73(c))
	NO_x	Compliance Assurance Monitoring requirements, as specified in Appendix C.	5.B.16	40 CFR Part 64 and 2011 negotiated Consent Decree with EPA
AF-001, AF-002, AF-003, AF-004	PM/PM_{10}	Biennial stack testing in accordance with EPA Reference Methods 1-5	5.B.17	September 21, 2004 PSD Permit to Construct and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AF-001, AF-002, AF-003, AF-004	Opacity	Monitor opacity during stack testing for PM in accordance with EPA Reference Method 9.	5.B.18	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AF-001, AF-002, AF-003, AF-004	PM/PM_{10}	Compliance Assurance Monitoring requirements, as specified in Appendix C.	5.B.16	40 CFR Part 64

Emission Point(s)	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013, AW-023	HAP	Install non-resettable hour meter.	5.B.19	40 CFR 63, Subpart ZZZZ (§63.6625(f))
		Oil analysis program	5.B.20, 5.B.21	40 CFR 63, Subpart ZZZZ (§63.6625(i) or (j))
		Recordkeeping – Notifications, maintenance and malfunctions	5.B.22	40 CFR 63, Subpart ZZZZ (§63.6655(a), (d) and (e))
		Recordkeeping – Hours of operation	5.B.23	40 CFR 63, Subpart ZZZZ (§63.6655(f))
		Recordkeeping – General	5.B.24	40 CFR 63, Subpart ZZZZ (§63.6660(a) through (c))
AK-011	NMHC+NOx, PM (filterable only), CO, SO_2	Recordkeeping – Install certified engine	5.B.25	40 CFR 60, Subpart IIII (§60.4211(c)) and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
		Recordkeeping – Operation and Maintenance	5.B.26	40 CFR 60, Subpart IIII (§60.4211(a)) and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
		Recordkeeping – Hours of Operation	5.B.27	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
		Recordkeeping – Fuel Specification	5.B.28	40 CFR 60, Subpart IIII (§60.4207(b)) and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)
AK-012	NOx + HC, CO	Recordkeeping – Install certified engine	5.B.29	40 CFR 60, Subpart JJJJ (§60.4243(b)) and 11 Miss. Admin.

Emission Point(s)	Pollutant/Parameter Monitored	Monitoring/Recordkeeping Requirement	Condition Number	Applicable Requirement
				Code Pt. 2, R. 6.3.A(3)(a)(2)
		Recordkeeping – Operation and Maintenance	5.B.30	40 CFR 60.4243(a)(1), Subpart JJJJ and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).
		Recordkeeping – Hours of Operation	5.B.31	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2)

5.B.1 Facility-wide, regular maintenance shall be performed as necessary to maintain proper operation of the pollution control equipment. The permittee shall maintain a log of control equipment malfunctions and downtime, including the date, time, duration, and cause of the malfunction or downtime and corrective and/or preventive action(s) taken as a result of the malfunction or downtime. These records must be made available for review upon request by DEQ personnel.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(3).)

5.B.2 For Emission Point AB-001, the permittee shall perform biennial stack testing in accordance with EPA Reference Method 7B, 40 CFR Part 60, Appendix A. For the purposes of compliance demonstration, the permittee shall operate the source at its maximum rated capacity. The permittee shall demonstrate compliance by performing a stack test by January 31 of each even-numbered year.

The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to DEQ. If the initial test protocol is acceptable, subsequent protocols may be waived if these protocols contain no significant changes. Also, the DEQ must be notified at least ten (10) days prior to the scheduled test date so than an observer may be present to witness the test(s).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.3 For Emission Points AB-001, AB-002, and AB-003, the permittee shall monitor and record the hourly gas flow in scfh supplied to each emission point referenced above. These records may be maintained in electronic form on the facility's Plant Information (PI) system. These records shall be made available for review upon request by DEQ

personnel.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.4 For Emission Point AB-003, the permittee shall perform biennial stack testing in accordance with EPA Reference Method 20, 40 CFR Part 60, Appendix A, to determine compliance with the permitted emission limitations for nitrogen oxides (NO_x). For the purposes of compliance demonstration, the permittee shall operate the source at its peak load. In lieu of using EPA Reference Method 20, the permittee may use EPA Reference Method 7E and either Method 3 or 3A for determining NO_x and diluent concentrations.

The permittee shall demonstrate compliance by performing a stack test by January 31 of each even-numbered year. The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to DEQ. If the initial test protocol is acceptable, subsequent protocols may be waived if these protocols contain no significant changes. Also, the DEQ must be notified at least ten (10) days prior to the scheduled test date so than an observer may be present to witness the test(s).

(Ref.: 40 CFR 60.334(c), Subpart GG)

5.B.5 For Emission Point AB-003, the permittee shall demonstrate compliance with the sulfur dioxide standard in 40 CFR 60.333 by maintaining documentation that the gaseous fuel meets the definition of "natural gas," as outlined in 40 CFR 60.331(u), Subpart GG.

(Ref.: 40 CFR 60.334(h)(3), Subpart GG)

5.B.6 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003 and AD-005, the permittee shall keep the following records:

(a) A copy of each notification and report that permittee submitted to comply with Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that permittee submitted, according to the requirements in § 63.10(b)(2)(xiv).

(b) Records of compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).

(Ref.: 40 CFR 63.7555(a), Subpart DDDDD)

5.B.7 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003 and AD-

005, the permittee shall maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.

(Ref.: 40 CFR 63.7555(i), Subpart DDDDD)

5.B.8 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003 and AD-005, the permittee shall maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.

(Ref.: 40 CFR 63.7555(j), Subpart DDDDD)

5.B.9 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003 and AD-005, the permittee shall maintain records as outlined in paragraphs (a) through (c) below.

(a) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records off site for the remaining 3 years.

(Ref.: 40 CFR 63.7560, Subpart DDDDD)

5.B.10 For Emission Points AD-001, AD-005 and the Urea Plant, the permittee shall record the following process parameters at the frequency indicated below when the sources are operating. Process parameter data shall be summed for each day and each month.

Parameter	Units	Monitoring Frequency
Natural gas process feedstock to Ammonia Plant Reformer	MMscf	Hourly
Natural gas fuel combusted in the Ammonia Plant Reformer	MMscf	Hourly
Urea Production	Tons	Daily

The permittee shall maintain records of the $\mathbf{(CO_2e)_{NH3/Urea}}$ emissions (in tons CO_2e/year)

for each consecutive 12-month period, along with all raw data and supporting calculations.

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

5.B.11 For Emission Points AD-001, AD-005 and the Urea Plant, the permittee shall demonstrate compliance with the CO_2e emission limit by calculating the **$(CO_2e)_{NH3/Urea}$** emissions (in tons CO_2e/year) for each consecutive 12-month period.

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

5.B.12 For Emission Point AD-005, the permittee shall record the fuel firing rate of each fuel to each of the following burner types at least once each hour when the source is firing fuel. Fuel firing data shall be summed for each day and each month. The heat input for each fuel to each burner types, shall be maintained for each consecutive 12-month period, along with all raw data and supporting calculations.

Primary and Tunnel Burners
- Natural Gas Firing
- Purge Gas Firing

Auxiliary and Superheat Burners (natural gas)

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

5.B.13 For Emission Point AD-005, the permittee shall demonstrate compliance with the fuel firing limits, by calculating the heat input (in MMBtu/year) for each fuel to each of the above burner types for each consecutive 12-month period.

(Ref.: Permit to Construct issued September 27, 2012 (**PSD Avoidance Limit**))

5.B.14 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall demonstrate compliance with the 10% opacity limit by measuring the NO_x concentration using the existing CEMS required by 40 CFR 60, Subpart G. NO_x concentrations averaged over a 3-hour rolling period (calculated hourly) that exceed the values in the following table shall indicate that the permittee is not in compliance with the opacity standard, unless otherwise demonstrated by a visible emissions evaluation, per EPA Test Method 9.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

Emission Point	Nitric Acid Plant	NO_x Concentration

		(ppmvd)
AE-003	AOP-6	354
AE-005	AOP-8	234
AE-006	AOP-9	226
AE-007	AOP-10	242

5.B.15 For Emission Points AE-003, AE-005, AE-006 and AE-007, the permittee shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides (NO_x) in accordance with the CEMS Plan contained in Appendix C of this permit. The permittee shall comply with the requirements of §60.13 and Appendix B of 40 CFR Part 60 for the continuous monitoring system. The permittee shall establish a conversion factor in accordance with §60.73(b) for the purpose of converting monitoring data into units of the applicable standard. The conversion factor shall be re-established during each Relative Accuracy Test Audit (RATA) conducted in accordance with 40 CFR 60, Appendix F. The permittee shall also record the daily production rate and hours of operation.

(Ref.: 40 CFR 60.73 (a), (b) and (c); and 2011 negotiated Consent Decree between U.S. EPA and Terra)

5.B.16 For Emission Points AE-003, AE-005, AE-006, AE-007, AF-001, AF-002, AF-003, and AF-004, the permittee shall comply with the monitoring and recordkeeping requirements of the Compliance Assurance Monitoring (CAM) Plans contained in Appendix C of this permit. The permittee shall also comply with all applicable requirements in 40 CFR 64.7, 64.8, and 64.9.

(Ref.: 40 CFR Part 64 – *Compliance Assurance Monitoring*)

5.B.17 For Emission Points AF-001, AF-002, AF-003, and AF-004, the permittee is required to perform biennial stack testing in accordance with EPA Reference Methods 1-5, 40 CFR Part 60, Appendix A, to demonstrate compliance with the permitted emission limitations for particulate matter (PM). The permittee shall demonstrate compliance by performing a stack test by January 31 of each even-numbered year. For the purpose of compliance demonstration, the permittee shall operate the sources at their maximum capacity of LDAN or HDAN.

The permittee shall submit a test protocol at least thirty (30) days prior to the scheduled test date to ensure that all test methods and procedures are acceptable to DEQ. If the initial test protocol is acceptable, subsequent protocols may be waived if these protocols contain no significant changes. Also, the DEQ must be notified at least ten (10) days prior to the scheduled test date so than an observed may be present to witness the test(s).

(Ref.: PSD Permit to Construct issued September 21, 2004 and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.18 For Emission Points AF-001, AF-002, AF-003, and AF-004, the permittee shall demonstrate compliance with the opacity limit by conducting opacity observations in accordance with EPA Reference Method 9, 40 CFR Part 60, Appendix A. These observations shall be conducted concurrently with the PM/PM_{10} stack testing required in Condition 5.B.8. However, if visibility or other conditions prevent the opacity observations from being performed concurrently with the stack testing, the permittee shall reschedule the opacity observations as soon after the stack testing as possible, but no later than thirty (30) days.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.19 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall install a non-resettable hour meters on each engine if they are not already installed.

(Ref.: 40 CFR 63.6625(f), Subpart ZZZZ)

5.B.20 For Emission Points AB-004, AK-013 and AW-023, the permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil. If any of the limits are exceeded, the permittee must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the permittee must change the oil within 2 business days or before commencing operation, whichever is later. The permittee shall keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(Ref.: 40 CFR 63.6625(j), Subpart ZZZZ)

5.B.21 For Emission Points AJ-004, AJ-005, AK-003, AK-004, and AK-005, the permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil. If any of the limits are exceeded, the permittee must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the permittee must change the oil within 2 business days or before commencing operation, whichever is later. The permittee shall keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(Ref.: 40 CFR 63.6625(i), Subpart ZZZZ)

5.B.22 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall keep the following records:

(a) A copy of each notification and report that the permittee submitted to comply with Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

(b) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

(c) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(d) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

The permittee shall keep the records required in Table 6 of Subpart ZZZZ to show continuous compliance with each emission or operating limitation that applies to you.

The permittee shall keep records of the maintenance conducted on the stationary RICE

in order to demonstrate that it operated and maintained the stationary RICE and after-treatment control device (if any) according to its maintenance plan.

(Ref.: 40 CFR 63.6655(a), (d) and (e), Subpart ZZZZ))

5.B.23 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the permittee must keep records of the notification of the emergency situation, and the time the engine was operated as part of the demand response.

(Ref.: 40 CFR 63.6655 (f), Subpart ZZZZ))

5.B.24 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall maintain records as follows:

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).

(Ref.: 40 CFR 63.6660(a) through (c), Subpart ZZZZ)

5.B.25 For Emission Point AK-011, the permittee shall maintain documentation that the engine is certified to the emission standards in 40 CFR 60.4205(b) for the same model year and maximum engine power. Records shall also be maintained that documents the engine was installed and configured according to the manufacturer's emission-related specifications.

(Ref.: 40 CFR 60.4211(c), Subpart IIII and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.26 For Emission Point AK-011, the permittee shall maintain records documenting that the

engine and control device (if applicable) were operated and maintained according to the manufacturer's emission-related written instructions. Permittee is only allowed to change those emission-related settings that are permitted by the manufacturer.

(Ref.: 40 CFR 60.4211(a), Subpart IIII and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.27 For Emission Point AK-011, the permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.28 For Emission Point AK-011, the permittee shall maintain records, which document that the engine was only fired with diesel fuel meeting the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

(Ref.: 40 CFR 60.4207(b), Subpart IIII and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.29 For Emission Point AK-012, the permittee shall maintain documentation that the engine is certified to the emission standards in Table 1 of Subpart JJJJ, as applicable, for the same model year and maximum engine power. Records shall also be maintained that documents the engine was installed and configured according to the manufacturer's emission-related specifications.

(Ref.: 40 CFR 60.4243(b), Subpart JJJJ and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.30 For Emission Point AK-012, the permittee shall maintain records documenting that the engine and control device (if applicable) were operated and maintained according to the manufacturer's emission-related written instructions. Permittee is only allowed to adjust engine settings according to and consistent with the manufacturer's instructions.

(Ref.: 40 CFR 60.4243(a)(1), Subpart JJJJ and 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

5.B.31 For Emission Point AK-012, the permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including

what classified the operation as emergency and how many hours are spent for non-emergency operation.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(a)(2).)

C. Specific Reporting Requirements

Emission Point(s)	Pollutant/Parameter Monitored	Reporting Requirement	Condition Number	Applicable Requirement
AB-001, AB-002, AD-003, AD-005	HAP	Notifications - Compliance Status	5.C.1	40 CFR 63, Subpart DDDDD, (§63.7530(d) and (e), and 63.7545(e))
		Notifications - General	5.C.2	40 CFR 63, Subpart DDDDD, (§63.7545(a))
		Compliance Reports - Schedule	5.C.3 5.C.4	40 CFR 63, Subpart DDDDD, (§63.7550 (a) and (b), and Table 9)
		Compliance Reports - Content	5.C.5	40 CFR 63, Subpart DDDDD, (§63.7550 (c))
		Compliance Reports – Submissions	5.C.6	11 Miss. Admin. Code Pt. 2, R. 6.3.C(1)and 40 CFR 63, Subpart DDDDD, (§63.7550(h)(3))
AB-001, AB-002	HAP	Notifications – Fuel Switch or Physical Modification	5.C.7	40 CFR 63, Subpart DDDDD, (§63.7545(h))
AE-003, AE-005, AE-006, AE-007	NO_x	CEMS excess emissions reporting	5.C.8	40 CFR 60, Subpart G (§60.73(e))
	NO_x	Report NO_x emissions in tpy for each consecutive 12-month period in the semiannual reporting period.	5.C.9	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1)
	Opacity	Report any 3-hour average NO_x concentrations indicating opacity exceeding the 10% standard	5.C.10	11 Miss. Admin. Code Pt. 2, R.

Emission Point(s)	Pollutant/Parameter Monitored	Reporting Requirement	Condition Number	Applicable Requirement
		during the semiannual period.		6.3.A(3)(c)(1)
AE-003, AE-005, AE-006, AE-007, AF-001, AF-002, AF-003, AF-004	CAM Indicators	Report semiannually any excursions and/or exceedances from the limits, indicator ranges and/or conditions listed in the CAM Plans contained in Appendix C.	5.C.11	40 CFR 64.9
AB-002	Fuel	Report the hourly gas flow to AB-002 exceeding 6,000 scfh and occurring while AB-001 and AB-003 are both operating.	5.C.12	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1)
Facility-wide	Stack Test Results	Stack test results shall be submitted within 45 days of completion of the required stack test.	5.C.13	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1)
AB-004, AJ-004, AJ-005 AK-003, AK-004, AK-005, AK-013, AW-023	HAP	Report all deviations from 40 CFR 63, ZZZZ on Title V semiannual monitoring report.	5.C.14	40 CFR 63, Subpart ZZZZ (§63.6650(f))
		Report any failure to perform the work practice on the schedule required.	5.C.15	40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 1

5.C.1 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall submit a signed statement in the Notification of Compliance Status report that indicates the tune-up of the unit and the energy assessment required in Section 3.D of this permit have been completed. The statement shall include an evaluation stating the energy assessment was completed in accordance with Table 3 of Subpart DDDDD and is an accurate depiction of the facility at the time of the assessment.

The Notification of Compliance Status shall be submitted no later than 60 days after the completion of all the initial compliance demonstration activities for each boiler and process heater at the facility and shall include the required statements from above and all the information specified in 40 CFR 63.7545(e)(1) through (8).

(Ref.: 40 CFR 63.7530(d) and (e), and 63.7545(e), Subpart DDDDD)

5.C.2 For Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee shall submit all applicable notifications in 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b)

through (h) that apply by the dates specified.

(Ref.: 40 CFR 63.7545(a), Subpart DDDDD)

5.C.3 Beginning January 31, 2016, for Emission Points AB-001, AB-002, and AD-005, the permittee must submit compliance reports to MDEQ every five (5) years, postmarked no later than January 31 for the preceding calendar year. The first submission may be for less than a 12-month period.

(Ref.: 40 CFR 63.7550(a) and (b), and Table 9 of Subpart DDDDD)

5.C.4 Beginning January 31, 2016, for Emission Point AD-003, the permittee must submit compliance reports to MDEQ annually, postmarked no later than January 31 for the preceding calendar year. The first submission may be for less than a 12-month period.

(Ref.: 40 CFR 63.7550(a) and (b), and Table 9 of Subpart DDDDD)

5.C.5 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee must prepare compliance reports containing the information outlined in the following paragraphs.

(a) Company and Facility name and address.

(b) Process unit information, emissions limitations, and operating parameter limitations.

(c) Date of report and beginning and ending dates of the reporting period.

(d) The total operating time during the reporting period.

(e) Include the date of the most recent tune-up for each emission point. Include the date of the most recent burner inspection if it was not performed at the required frequency and was delayed until the next scheduled or unscheduled unit shutdown.

(f) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(Ref.: 40 CFR 63.7550(c), Subpart DDDDD)

5.C.6 Beginning January 31, 2016, for Emission Points AB-001, AB-002, AD-003, and AD-005, the permittee must submit compliance reports as outlined below.

(a) Written Reports shall be submitted to MDEQ at the following address:

Chief, Environmental Compliance and Enforcement Division
Mississippi Department of Environmental Quality
Office of Pollution Control
P.O. Box 2261
Jackson, Mississippi 39225

(b) Electronic reports shall be submitted using CEDRI that is accessed through EPA's Central Data Exchange (CDX) at www.epa.gov/cdx.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C(1). and 40 CFR 63.7550(h)(3), Subpart DDDDD)

5.C.7 Beginning January 31, 2016, for Emission Points AB-001, AB-002, if the permittee switches fuels or makes a physical change to the boiler and the fuel switch or physical change results in the applicability of a different subcategory, the permittee shall provide notice of the date upon which the permittee switched fuels or made the physical change within 30 days of the switch/change. The notification must identify the information specified in 40 CFR 63.7545(h)(1) through (3).

(Ref.: 40 CFR 63.7545(h), Subpart DDDDD)

5.C.8 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit excess emission reports semiannually. These reports shall contain the information required in §60.7(c) and (d). All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. If there are no excess emissions during the semiannual period, the permittee shall submit a report stating such. Excess emissions are defined as any 3-hour period during which the average nitrogen oxides emissions (arithmetic average or three contiguous 1-hour periods) exceed the NO_x standard.

(Ref.: 40 CFR 60.73(e), Subpart G)

5.C.9 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit a summary of the NO_x emissions in tons per year from each emission point for each consecutive 12-month period in the semiannual reporting period specified in Condition 5.A.4.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.C.10 For Emission Points AE-003, AE-005, AE-006, and AE-007, the permittee shall submit a report of any 3-hour average NO_x concentrations exceeding the values in Section 5.B, which were established to demonstrate compliance with the 10% opacity limit. The

permittee shall also submit the results of any visible emissions evaluations conducted per EPA Test Method 9 as a result of NO_x concentrations indicating exceedances of the opacity standard. Semiannual reports shall be submitted in accordance with Condition 5.A.4.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.C.11 For Emission Points AE-003, AE-005, AE-006, AE-007, AF-001, AF-002, AF-003, and AF-004, the permittee shall comply with the reporting requirements expressed in §64.9. In particular, the permittee shall submit summary information on the number, duration, and cause of excursions or exceedances and the corrective actions taken, as well as a summary on the number, duration, and cause of monitor downtime incidents. This information shall be submitted with the semiannual reports required by Condition 5.A.4 and shall be retained at the facility as required by Condition 5.A.3.

(Ref.: 40 CFR 64.9)

5.C.12 For Emission Point AB-002, the permittee shall report any hourly gas flow to AB-002 exceeding 6,000 scfh and occurring while both the Auxiliary Boiler No. 1 (AB-001) and Cogeneration Facility (AB-003) are in operation. The day and hour of each such occurrence shall also be recorded and reported in the semiannual reports required by Condition 5.A.4.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.C.13 The permittee shall submit stack test results to the DEQ within forty-five (45) days of completion of any stack test required by this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).)

5.C.14 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee shall report all deviations as defined in Subpart ZZZZ in the Title V semiannual monitoring report.

(Ref.: 40 CFR 63.6650(f), Subpart ZZZZ)

5.C.15 For Emission Points AB-004, AJ-004, AJ-005, AK-003, AK-004, AK-005, AK-013 and AW-023, the permittee must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

(Ref.: 40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 1)

SECTION 6. ALTERNATIVE OPERATING SCENARIOS

6.1 None permitted.

SECTION 7. TITLE VI REQUIREMENTS

The following are applicable or potentially applicable requirements originating from Title VI of the Clean Air Act – Stratospheric Ozone Protection. The full text of the referenced regulations may be found on-line at **http://ecfr.gpoaccess.gov** under Title 40, or DEQ shall provide a copy upon request from the permittee.

7.1 If the permittee produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart A – Production and Consumption Controls.

7.2 If the permittee performs service on a motor vehicle for consideration when this service involves the refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart B – Servicing of Motor Vehicle Air Conditioners.

7.3 The permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart E – The Labeling of Products Using Ozone-Depleting Substances, for the following containers and products:

(a) All containers in which a class I or class II substance is stored or transported;

(b) All products containing a class I substance; and

(c) All products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless EPA determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available. If the EPA makes such a determination for a particular product, then the requirements of this subpart are effective for such product no later than January 1, 2015.

7.4 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart F – Recycling and Emissions Reduction:

(a) Servicing, maintaining, or repairing appliances;

(b) Disposing of appliances, including small appliances and motor vehicle air conditioners; or

(c) Refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing organizations, persons selling class I or class II refrigerants or offering class I or class II refrigerants for sale, and persons purchasing class I or class II refrigerants.

7.5 The permittee shall be allowed to switch from any ozone-depleting substance to any acceptable alternative that is listed in the Significant New Alternatives Policy (SNAP) program promulgated pursuant to 40 CFR Part 82, Subpart G – Significant New Alternatives Policy Program. The permittee shall also comply with any use conditions for the acceptable alternative substance.

7.6 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart H – Halon Emissions Reduction:

(a) Any person testing, servicing, maintaining, repairing, or disposing of equipment that contains halons or using such equipment during technician training;

(b) Any person disposing of halons;

(c) Manufacturers of halon blends; or

(d) Organizations that employ technicians who service halon-containing equipment.

APPENDIX A

List of Abbreviations Used In this Permit

11 Miss. Admin. Code Pt. 2, Ch. 1.	Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants
11 Miss. Admin. Code Pt. 2, Ch. 2.	Permit Regulations for the Construction and/or Operation of Air Emissions Equipment
11 Miss. Admin. Code Pt. 2, Ch. 3.	Regulations for the Prevention of Air Pollution Emergency Episodes
11 Miss. Admin. Code Pt. 2, Ch. 4.	Ambient Air Quality Standards
11 Miss. Admin. Code Pt. 2, Ch. 5.	Regulations for the Prevention of Significant Deterioration of Air Quality
11 Miss. Admin. Code Pt. 2, Ch. 6.	Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act
11 Miss. Admin. Code Pt. 2, Ch. 7.	Acid Rain Program Permit Regulations for Purposes of Title IV of the Federal Clean Air Act
BACT	Best Available Control Technology
CEM	Continuous Emission Monitor
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
COMS	Continuous Opacity Monitoring System
DEQ	Mississippi Department of Environmental Quality
EPA	United States Environmental Protection Agency
gr/dscf	Grains Per Dry Standard Cubic Foot
HP	Horsepower
HAP	Hazardous Air Pollutant
lbs/hr	Pounds per Hour
M or K	Thousand
MACT	Maximum Achievable Control Technology
MM	Million
MMBTUH	Million British Thermal Units per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards For Hazardous Air Pollutants, 40 CFR 61 or National Emission Standards For Hazardous Air Pollutants for Source Categories, 40 CFR 63
NMVOC	Non-Methane Volatile Organic Compounds
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards, 40 CFR 60
O&M	Operation and Maintenance
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 μm in diameter
ppm	Parts per Million
PSD	Prevention of Significant Deterioration, 40 CFR 52
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TPY	Tons per Year
TRS	Total Reduced Sulfur
VEE	Visible Emissions Evaluation
VHAP	Volatile Hazardous Air Pollutant
VOC	Volatile Organic Compound

APPENDIX B

COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

CAM PLAN FOR AE-003, AE-005, AE-006 AND AE-007

(Per the provisions of the 2011 negotiated Consent Decree between EPA and Terra, the following CEMS Plan, which was contained in Attachment C of the Consent Decree, will serve as the CAM Plan for AE-003, AE-005, AE-006 and AE-007.)

TERRA NITRIC ACID PLANT CEMS PLAN
U.S. et. al. v. Terra Industries, Inc., et. al.

CEMS Plan for NO_x Emissions
Terra Industries Inc., Terra Nitrogen, Limited Partnership, Terra International (Oklahoma) Inc., Port Neal Corporation, and Terra Mississippi Nitrogen, Inc.
Covered Nitric Acid Plants

Principle

This CEMS Plan is the mechanism for determining compliance with the Short-Term NO_x Limit and Long-Term NO_x Limit applicable to each Covered Nitric Acid Plant as specified in the Consent Decree and is used to evaluate the compliance status with the NSPS NO_x limits. The methodology described in this CEMS Plan will provide a continuous indication of compliance with the above-referenced NO_x emission limits established in the Consent Decree by accurately determining the emission rate in terms of pounds of NO_x emitted per ton of 100% Nitric Acid Produced (lb/ton) as a rolling 3-hour average and a rolling 365-day average. The CEMS will utilize equipment to measure stack NO_x concentration and the stack volumetric flow rate. From this data, real-time, accurate, and quality controlled measurements of the mass NO_x emission rate can be obtained.

Definitions

Terms used in this CEMS Plan that are defined in the Clean Air Act ("CAA") or in Federal or state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein. The following definitions specifically apply for purposes of this CEMS Plan.

- "CEMS" or "Continuous Emission Monitoring System" shall mean the total equipment, required under this CEMS Plan, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.
- "Day," "day," or "calendar day" shall mean a calendar day.
- "Long-Term NO_x Limit" shall mean a 365-day rolling average NO_x emission limit (rolled daily) expressed as pounds of NO_x emitted per ton of 100% Nitric Acid Produced ("lb/ton"); compliance with the Long-Term NO_x Limit shall be calculated in accordance with this CEMS Plan. The Long-Term NO_x Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction.

- "Malfunction" shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in whole or in part by poor maintenance or careless operation.
- "NSPS NO_x Limit" shall mean the NO_x emission limit expressed as 1.5 kg of NO_x per metric ton of 100% Nitric Acid Produced (3 lb per ton) specified at 40 C.F.R. § 60.72(a)(1).
- "NO_x" shall mean the pollutant nitrogen oxides. For the purposes of calculating mass emission rates, NO_x has a molecular weight of 46.0055 lb/lb-mol.
- "NO_x stack analyzer" shall mean that portion of the CEMS that senses NO_x and generates an output proportional to the NO_x concentration.
- "100% Nitric Acid Produced" shall mean the quantity of a nitric acid product manufactured by a Nitric Acid Plant multiplied by the concentration of actual nitric acid in the product. For example, if a Nitric Acid Plant produces 100 tons of a 54% nitric acid product, this equals 54 tons of 100% Nitric Acid Produced.
- "One-hour period" and "1-hour period" shall mean any 60-minute period commencing on the hour.
- "One-minute measurement" shall mean any single measurement or the arithmetic average of multiple measurements of a parameter during a one-minute period on-the-clock.
- "Operating Periods" shall mean periods during which a Covered Nitric Acid Plant is producing nitric acid and NO_x is emitted, including periods of Startup, Shutdown and Malfunction.
- "Short-Term NO_x Limit" shall mean a 3-hour rolling average NO_x emission limit (rolled hourly) expressed in terms of pounds of NO_x emitted per ton of 100% Nitric Acid Produced ("lb/ton"); compliance with the Short-Term NO_x Limit shall be calculated in accordance with this CEMS Plan. The Short-Term NO_x Limit does not apply during periods of Startup, Shutdown, or Malfunction.
- "Shutdown" shall mean the cessation of nitric acid production operations of a Covered Nitric Acid Plant for any reason. Shutdown begins at the time the feed of ammonia to the Covered Nitric Acid Plant ceases and ends 3 hours later.
- "Stack flowmeter" shall mean that portion of the CEMS that senses the volumetric flow rate and generates an output proportional to that flow rate.
- "Startup" shall mean the process of initiating nitric acid production operations of a Covered Nitric Acid Plant. Startup begins 1 hour prior to the initiation of the feed of ammonia to the Covered Nitric Acid Plant and ends no more than 5 hours after such initiation of the feed of ammonia.
- "Ton" or "tons" shall mean short ton or short tons. One Ton equals 2,000 pounds.

Emissions Monitoring

Emissions monitoring under this CEMS Plan will be done using a NO_x stack analyzer and a stack flowmeter on each Covered Nitric Acid Plant. Except for periods of CEMS breakdowns, analyzer malfunctions, repairs, and required quality assurance or quality control activities (including calibration checks and required zero and span adjustments), Terra will conduct

continuous monitoring pursuant to this CEMS Plan at each Covered Nitric Acid Plant during all Operating Periods as follows:

- Once every minute, the NO_x stack analyzer will measure the stack NO_x concentration, in parts per million by volume, dry basis (ppmvd) and the stack flowmeter will measure the volumetric flow rate in dry standard cubic feet per minute (DSCFM)[4].

- For every 1-hour period (60-minute period commencing on the hour), the CEMS will reduce the 60 one-minute measurements generated by each analyzer by taking the arithmetic average of the previous 60 measurements during the 1-hour period. This data will be used to calculate the 3-hour average NO_x emission rate.

Backup Monitoring Procedure for Long-Term NO_x Limit

In the event that the NO_x stack analyzer and/or stack flowmeter is/are not available or is/are out-of-control, Terra will implement the following backup monitoring procedure. The resulting data will be used to calculate the 365-day average NO_x emission rate.

- Other than as specified below for a CEMS outage or out-of-control period less than 24 consecutive hours, Terra will comply with the following requirements to fill in data gaps in the array:

    - Exit stack gas will be sampled and analyzed for NO_x at least once every three (3) hours, during all Operating Periods. Sampling will be conducted by making physical measurements of the NO_x concentration in the gas stream to the main stack using alternative/non-CEMS methods (*e.g.*, through the use of a portable analyzer or non-certified NO_x stack analyzer). The reading obtained will be substituted for the 180 (or less) one-minute measurements that would otherwise be utilized if the CEMS were operating normally. Alternatively, Terra may conduct the required sampling and analysis using a redundant certified NO_x analyzer.

    - Stack volumetric flow rate will be estimated using engineering judgment.

- During required quality assurance or quality control activities (including calibration checks and required zero and span adjustments) of the CEMS and stack flowmeter, Terra may utilize the previous calendar day average value to fill in the data gaps.

- If any one or more than one of the CEMS or stack flowmeter is/are not operating for a period of less than 24 consecutive hours due to breakdowns, malfunctions, repairs, or out-of-control period of the same, Terra may utilize the previous calendar day average value recorded for each to fill in the data gaps.

4 For the purposes of the calculations under this CEMS Plan, as-is volumetric flow rate measurements will be assumed to be dry. However, Terra may adjust for any moisture contained in the stack gas if the Covered Nitric Acid Plant is equipped with a continuous moisture analyzer.

Production Data

Following each calendar day at each Covered Nitric Acid Plant, Terra will record the quantity of nitric acid produced during that day and the average strength of the nitric acid produced during that day. From this information, Terra will calculate the 100% Nitric Acid Produced for that day, in units of tons per day.

Conversion Factor

During each performance test for each Covered Nitric Acid Plant required under Paragraph 15 of the Consent Decree, Terra will develop a conversion factor, in units of lb/ton of 100% Nitric Acid Produced per ppmvd consistent with 40 C.F.R. § 60.73(b).

Emissions Calculations

Rolling 3-Hour Average

Compliance with the Short-Term NO_x Limit shall be based on a rolling 3-hour average (rolled hourly). For purposes of calculating a rolling 3-hour average NO_x emission rate, the CEMS will maintain an array of the 3 most recent and contiguous 1-hour period average measurements of stack NO_x concentration. Every hour, it will add the most recent 1-hour period average measurement to the array and exclude the oldest 1-hour period average measurement. Data generated using the backup monitoring procedure, specified above, need not be included in this calculation.

The rolling 3-hour average lb/ton NO_x emission rate (E_{3hravg}) will then be calculated every hour using Equation 1.

Equation 1:

$$E_{3hravg} = \frac{K \cdot \sum_{i=1}^{3} \cdot C_{NOx\,i}}{3}$$

Where:

$C_{NOx\,i}$ = Arithmetic average of 60 one-minute measurements of stack NO_x concentration, parts per million by volume, dry basis (ppmvd) in a 1-hour period.

K = Conversion factor determined during most recent NO_x performance test (lb/ton of 100% Nitric Acid Produced per ppm)

E_{3hravg} = 3-hour average lb NO_x per ton 100% Nitric Acid Produced

Rolling 365-Day Average

Compliance with the Long-Term NO_x Limit shall be based on a rolling 365-day average (rolled daily). For the purposes of calculating the 365-day average NO_x emission rate each calendar day at each Covered Nitric Acid Plant, Terra will maintain an array of the mass emissions (lb/day) of NO_x (calculated using Equation 2) and the 100% Nitric Acid Produced for that day (tons/day) and the preceding 364 days. Each subsequent day, the data from that day will be added to the array, and the data from the oldest day will be excluded.

For the purposes of calculating daily mass emission rate, the CEMS will maintain an array of each one-minute measurement of the NO_x concentration (ppmvd) at the exit stack and each one-minute measurement of volumetric flow rate (DSCFM) of the exit stack over each day. In the event that one or more of the CEMS and stack flowmeter is/are not available, Terra will use the backup monitoring procedure, specified above, to fill in the data gaps.

Following each calendar day, the daily NO_x mass emissions will be calculated using Equation 2.

Equation 2:

$$M_{NO_x Day} = 1.193 \times 10^{-7} \cdot \sum_{i=1}^{n} Q_{Stack\ i} \cdot C_{NOx\ i}$$

Where:

$C_{NOx\ i}$ = One-minute measurement of stack NO_x concentration, ppmvd, at interval "*i*"

$Q_{Stack\ i}$ = One-minute measurement of stack volumetric flow rate, DSCFM, at interval "*i*"

1.193×10^{-7} = Conversion factor in units of pounds per standard cubic foot (lb/SCF) NO_x per ppm

$M_{NO_x Day}$ = Mass emissions of NO_x during a calendar day, lb

n = Number of minutes of Operating Period in a calendar day

Following each calendar day, the NO_x emission rate as lb/ton, averaged over a rolling 365-day period ($E_{365-Day\ Avg}$) will be calculated using Equation 3.

Equation 3:

$$E_{365-Day\ Avg} = \frac{\sum_{d=1}^{365} M_{NO_x Day\ d}}{\sum_{d=1}^{365} P_d}$$

Where:

$M_{NO_x Day\ d}$ = Mass emissions of NO_x during a calendar day "*d*", lb

P_d = 100% Nitric Acid Produced during a calendar day "*d*", tons

$E_{365-Day\ Avg}$ = 365-day rolling average lb NO_x per ton of 100% Nitric Acid Produced

Rounding of Numbers resulting from Calculations

Upon completion of the calculations, the final numbers shall be rounded as follows:

E_{3hravg} : Rounded to the nearest tenth.

$E_{365-Day\ Avg}$: Rounded to the nearest hundredth.

The numbers "5"-"9" shall be rounded up, and the numbers "1"-"4" shall be rounded down. Thus, "1.05" shall be rounded to "1.1", and "1.04" shall be rounded to "1.0".

Compliance with Consent Decree NO_x Limits

Short-Term NO_x Limits

The Short-Term NO_x Limits do not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at a Covered Nitric Acid Plant, Terra will be in compliance with the Short-Term NO_x Limit specified in the Consent Decree if E_{3hravg} does not exceed 1.0 lb of NO_x per ton of 100% Nitric Acid Produced. If Terra contends that any 3-hour rolling average emission rate is in excess of 1.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period, Terra shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a Covered Nitric Acid Plant would have been in compliance with the Short-Term Limit if the appropriate performance test or compliance procedure had been performed.

NSPS NO_x Limits

The NSPS NO_x Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods at a Covered Nitric Acid Plant, Terra will be in compliance with the NSPS Limit if E_{3hravg} does not exceed 3.0 lb of NO_x per ton of 100% Nitric Acid Produced. If Terra contends that any 3-hour rolling average emission rate is in excess of 3.0 lb/ton due to the inclusion of hours of Startup, Shutdown or Malfunction in the 3-hour period, Terra shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Startup, Shutdown or Malfunction(s). Nothing in this CEMS Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a Covered Nitric Acid Plant would have been in compliance with the NSPS NO_x Limit if the appropriate performance test or compliance procedure had been performed.

Long-Term NO_x Limits

Terra will be in compliance with the Long-Term NO_x Limit specified in the Consent Decree if $E_{365-Day\ Avg}$ does not exceed 0.60 lb of NO_x per ton of 100% Nitric Acid Produced. The Long-Term NO_x Limit applies at all times, including during periods of Startup, Shutdown, or Malfunction.

Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction

Terra will retain all data generated by the NO_x analyzer and stack flowmeter, including all data generated during Startup, Shutdown, and/or Malfunction ("SSM") at each Covered Nitric Acid Plant in accordance with Section XI of the Consent Decree.

Analyzer Specifications

The NO_x stack analyzers and the stack flowmeter required under this CEMS Plan at each Covered Nitric Acid Plant will meet the following specifications:

Table 1

Analyzer	**Parameter**	**Location**	**Range/Span Value**
NO_x Stack Analyzers	NO_x, ppm by volume, dry basis	Stack	Dual range: Normal: 0 – 200 ppm NO_x SSM: 0 – 5000 ppm NO_x
Stack Flowmeter	Volumetric flow rate, SCFM	Stack	0 to 125% of the maximum expected volumetric flow rate

The NO_x stack analyzers will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, 40 C.F.R. Part 60, Appendix B, Performance Specification 2, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1. It should be noted, however, that the daily drift test requirement at 40 C.F.R. § 60.13(d) and the requirements of Appendix F apply only to the normal range of the NO_x stack analyzers. The SSM range of the NO_x stack analyzers will be evaluated once each calendar quarter to verify accuracy.

The stack flowmeters will meet 40 C.F.R. Part 60, Appendix B, Performance Specification 6 and will be evaluated once each calendar quarter and during the RATA of the NO_x stack analyzers to verify accuracy.

Compliance with the NSPS: 40 C.F.R. Part 60, Subpart G

In addition to the requirements in this CEMS Plan, Terra also will comply with all of the requirements of the NSPS relating to monitoring at each Covered Nitric Acid Plant except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart G:

- The requirement at 40 C.F.R. § 60.73(a) that the NO_x stack analyzers have a span value of 500 ppm. In lieu of this, Terra will utilize the span values specified in Table 1 of this CEMS Plan; and

The requirement at 40 C.F.R. § 60.73(a) that pollutant gas mixtures under Performance Specification 2 and for calibration checks under 40 C.F.R. § 60.13(d) be nitrogen dioxide (NO_2). Terra will use calibration gases containing NO and/or NO_2 as appropriate to assure accuracy of the NO_x stack analyzers except where verified reference cells are used in accordance with Performance Specification 2.

CAM PLAN FOR EMISSION POINT AF-001

	Indicator No. 1	Indicator No. 2	Indicator No. 3
Indicator	Amperage on the noncondensibles blower to the packed tower scrubber.	Amperage on the cooling air blowers to the packed tower scrubber.	Amperage on the recirculation pumps of the scrubber.
Measurement Approach	Fan amperage of the noncon-densibles blower will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.	Fan amperage of the cooling air blowers will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure that the scrubber is performing as designed. An alarm will sound when a low amperage level is indicated.
Monitoring Methods and Location	The amperage meter is physically connected to the blower electrical system and data is electronically recorded.	The amperage meter is physically connected to the blower electrical system and data is electronically recorded.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
Indicator Range	An excursion is defined as any 3-hour average amperage value below 5 amps. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of all three blowers are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when there are not at least two pumps on line with amperage values of 5 or above. Excursions trigger an inspection, corrective action, and reporting.
Data Collection Frequency	Amperage is monitored and recorded continuously.	Amperage is monitored and recorded continuously.	Amperage is monitored and recorded continuously.
Averaging Period	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
Recordkeeping	Records of the amperage value and corrective action taken are generated whenever an alarm sounds. Electronic records of all the data collected are also available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that there are no blowers online. Electronic records of all the data collected are also available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that less than two pumps are online. Electronic records of all the data collected are also available.
QA/QC	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of ± 0.5% of the full scale.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of ±0.5% of the full scale.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of ± 0.5% of the full scale.

CAM PLAN FOR EMISSION POINT AF-002

	Indicator No. 1	Indicator No. 2
Indicator	Differential pressure across the scrubber.	Amperage on the recirculation pumps of the scrubber.
Measurement Approach	Differential pressure will be continuously measured with a differential pressure gauge to ensure adequate water flow and proper operation of the scrubber. An alarm will sound when differential pressure approaches the indicator value.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure proper circulation of the scrubber solution. An alarm will sound when a low amperage level is indicated.
Monitoring Methods and Location	Pressure taps are located upstream and downstream of the scrubber's packing material.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
Indicator Range	An excursion is defined as any 3-hour average differential pressure value lass than 5.5 inches of water. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of both pumps are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.
Data Collection Frequency	Pressure differential is monitored and recorded continuously.	Amperage is monitored and recorded continuously.
Averaging Period	Readings are taken every 15 minutes and averaged for the hour. A subsequent 3-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
Recordkeeping	Pressure differential is electronically recorded on a continuous basis and hourly data shall be made available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that there are no pumps online. Electronic records of all the data collected are also available.
QA/QC	The pressure gauges are calibrated quarterly. Pressure taps are checked for plugging daily. The alarm is tested quarterly. The gauges shall have a minimum accuracy of 0.5 inches of water.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of ± 0.5% of the full scale.

CAM PLAN FOR EMISSION POINT AF-003

	Indicator No. 1	Indicator No. 2
Indicator	Differential pressure across the scrubber.	Amperage on the recirculation pumps of the scrubber.
Measurement Approach	Differential pressure will be continuously measured with a differential pressure gauge to ensure adequate water flow and proper operation of the scrubber. An alarm will sound when differential pressure approaches the indicator value.	Amperage of the recirculation pumps will be continuously measured by an amperage meter to ensure proper circulation of the scrubber solution. An alarm will sound when a low amperage level is indicated.
Monitoring Methods and Location	Pressure taps are located upstream and downstream of the scrubber's packing material.	The amperage meter is physically connected to the recirculation pumps' electrical system and data is electronically recorded.
Indicator Range	An excursion is defined as any 3-hour average differential pressure value lass than 5.5 inches of water. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as any consecutive 3-hour period during plant operation when the amperage values of both pumps are below 5 amps at one time. Excursions trigger an inspection, corrective action, and reporting.
Data Collection Frequency	Pressure differential is monitored and recorded continuously in the DCS system.	Amperage is monitored and recorded continuously in the DCS system.
Averaging Period	Readings are taken at least every minute and averaged over 15 minutes. Then, four 15-minute readings are averages to get a 1-hour reading. A subsequent 3-hour average is then used for determining an excursion.	Readings are taken every 15 minutes and averaged for the hour. The three-hour average is then used for determining an excursion.
Recordkeeping	Pressure differential is electronically recorded on a continuous basis and hourly data shall be made available.	Records of the amperage value and corrective action taken are generated whenever an alarm sounds indicating that the amperage is below 5 amps. Electronic records of all the data collected are also available.
QA/QC	The pressure gauges are calibrated quarterly. Pressure taps are checked for plugging daily. The alarm is tested quarterly. The gauges shall have a minimum accuracy of 0.5 inches of water.	The amperage meter shall be calibrated quarterly and shall have a minimum accuracy of ± 0.5% of the full scale.

CAM PLAN FOR EMISSION POINT AF-004

(No. 2 Finishing Train Pre-Dryer, No. 2 Finishing Train Dryer, No. 2 ANF Finishing Train Cooler, No. 3 ANF Finishing Train Pre-Cooler, No. 3 ANF Finishing Train Cooler, No. 4 ANF Finishing Train Pre-Cooler, No. 4 ANF Finishing Train Cooler, No. 4 ANF Finishing Train Pre-Dryer, No. 4 ANF Finishing Train Dryer)

	BUELL SCRUBBERS		FLY ASH SCRUBBERS
	Indicator No. 1	**Indicator No. 2**	**Indicator No. 1**
Indicator	Flowrate of scrubber solution out of each pair of Buell scrubbers.	Condition of the scrubber spray nozzles for the Buell scrubbers.	Water level of each fly ash scrubber sump.
Measurement Approach	Manually measure the flowrate out of each pair of Buell Scrubbers to ensure adequate PM removal.	Inspection of the condition of the spray nozzles.	Manually measure the water level using the staff gauge located in each sump to ensure adequate water is entrapped with the entering air for PM removal.
Monitoring Methods and Location	Manual flow measurements are made of the scrubbing solution as it exits out of the seal legs of each wet cyclonic scrubber.	Inspection of nozzles for signs of corrosion or deterioration.	A graduated staff gauge is located in the sump of each scrubber.
Indicator Range	An excursion is defined as a flowrate (combined flow of parallel units) less than 3.5 gpm. Excursions trigger an inspection, corrective action, and reporting.	An excursion is defined as a failure to inspect the nozzles every six months. Signs of deterioration shall trigger corrective action.	An excursion is defined as a water level less than 10.5 inches on the staff gauge. Excursions trigger an inspection, corrective action, and reporting.
Data Collection Frequency	Flowrate is manually measured once per day.	Inspect spray nozzles at least once every six months.	Water level is manually measured once per day.
Averaging Period	Not Applicable. (Instantaneous measurement)	Not Applicable.	Not Applicable. (Instantaneous measurement)
Recordkeeping	Records of the flowrate measured once per day.	A log of inspections, including a record of any corrective action taken.	Water level height recorded manually once per day.
QA/QC	The manual measurement procedure is calibrated quarterly and should be ± 0.5 gpm.	Deterioration of the spray nozzles indicates improper operation of the scrubber due to poor contact of exhaust air and scrubber liquor. Personnel are trained in proper inspection and maintenance procedures.	The staff gauge is checked for accuracy, cleaned as required, and repaired/replaced if necessary on a quarterly basis. Measurements should be accurate within ± 0.5 inches.