

**FEDERAL SYNTHETIC MINOR NEW SOURCE REVIEW *DRAFT* PERMIT  
ISSUED PURSUANT TO THE REQUIREMENTS OF 40 CFR § 49.158**

PERMITTING AUTHORITY: United States Environmental Protection Agency, Region 6

PERMITEE: XTO Energy, Inc.  
810 West Houston Street  
Fort Worth, Texas 76102

PERMIT NUMBER: R6NSR-NM-004

FACILITY: Jicarilla Compressor Station  
SIC 1311, NACIS 211111

FACILITY LOCATION: Intersection of US 550N & NM 537  
8.4 miles West of BIA J-6, 2.4 miles north  
Jicarilla Apache Reservation,  
Rio Arriba County, New Mexico  
Latitude 34.43905 N and Longitude 107.34797 W

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part A (42 U.S.C. Section 7410(a)(2)(c)), and the Code of Federal Regulations (CFR) Title 40, Sections 49.151-161, the U.S. Environmental Protection Agency, Region 6 is issuing a *Synthetic Minor New Source Review Permit* for an existing, operating source to XTO Energy, Inc. (XTO). This permit places enforceable restrictions on the potential to emit of the source so that the provisions and requirements for major sources 40 CFR § 71.2 will not apply to the source.

This authorization relates to an existing source consisting of one natural gas-fired compressor, three operating well sites, a 4.5 million standard cubic feet per day (SCFD), triethylene glycol (TEG) dehydrator, and several ancillary pumps, heaters and storage tanks. XTO's Jicarilla Compressor Station is authorized to operate as a synthetic minor source in accordance with the terms and conditions set forth in this permit. Failure to comply with any term or conditions set forth in this permit may result in enforcement action pursuant to Section 113 of the CAA. The permit does not relieve XTO of the responsibility to comply with any other applicable provisions of the CAA or other federal and tribal requirements.

In accordance with 40 CFR § 49.159(a), this synthetic minor new source review permit becomes effective immediately pursuant to 40 CFR § 49.159(a)(3).



Guy Donaldson  
Associate Director for Air  
Multimedia Division

**JUL 13 2017**

Date

## I. PROJECT/PROCESS DESCRIPTION

This synthetic minor NSR permit authorizes the existing operations of the Jicarilla Compressor Station and limits the source's potential to emit (PTE), pursuant to 40 CFR § 49.151(c)(ii)(D), below major source emission thresholds for hazardous air pollutants (HAP) through operational limitations, on the flow to the TEG dehydrator and the use of a flare at all times. It will also memorialize XTO's allowable baseline emissions for future NSR applicability purposes, pursuant to 40 CFR § 49.153(b).

The existing Jicarilla Compressor Station and three aggregated well sites are located on Jicarilla Apache tribal land in New Mexico. The three well production sites (which are aggregated with the compressor station facility) have their own separator and storage tanks [EPN WS-1] to remove the liquids initially from the produced gas. The wellsites each consist of an oil and gas wellhead that flows to an onsite three-phase (gas, water, and oil) separator. The three-phase separator utilizes the wellhead pressure that is either assisted by a wellhead plunger-lift system or a wellhead natural gas-driven pumping unit to move the gas into the separator vessel and separate the produced hydrocarbons into a natural gas stream, produced water, and natural gas condensate. The natural gas component of the production flows through gathering pipelines to the Jicarilla Compressor Station. The liquid components of the well production, which includes the produced water and the associated gas condensate then flows into the onsite condensate and produced water tanks for temporary storage prior to being trucked off-site.

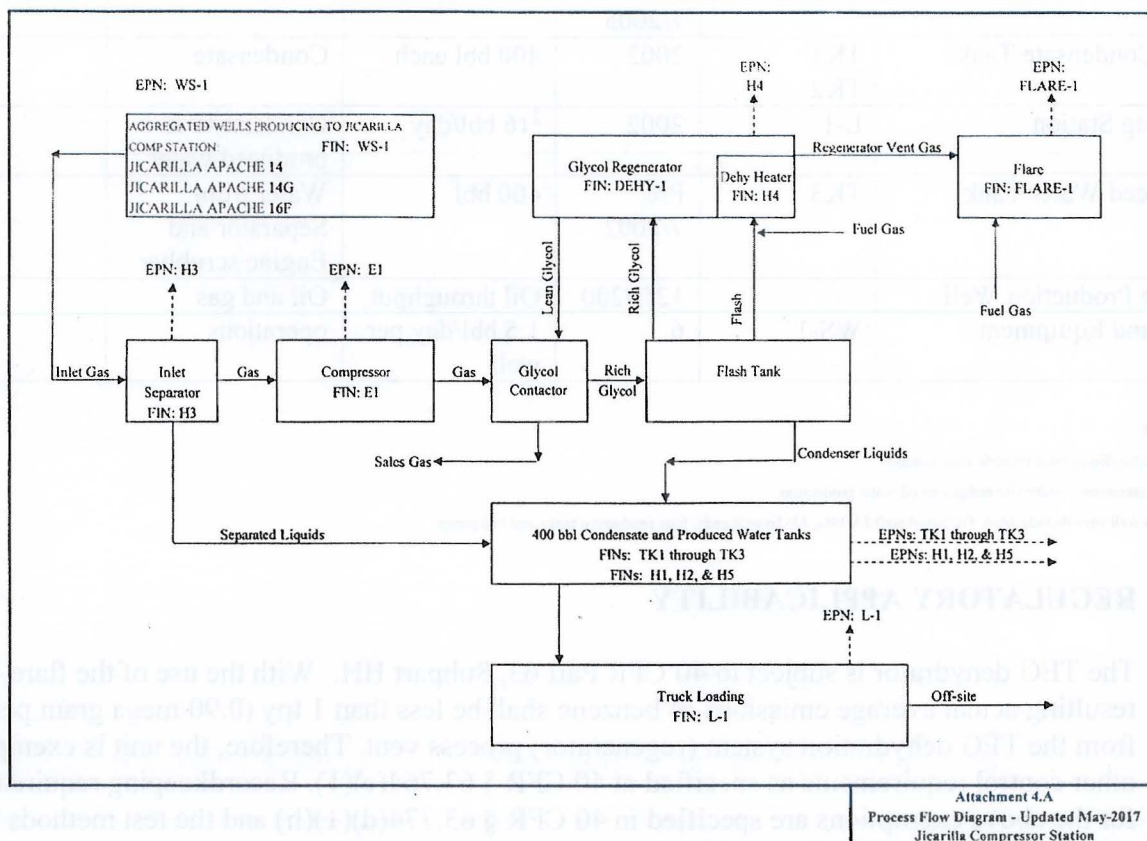
The Jicarilla Apache (JA)14G well was hydraulically re-fractured in March of 2016 and the other two wells, JA 14 and JA16F wells were hydraulically fractured in 2006.

The natural gas from the gathering pipelines enters the compressor station via a pressurized inlet separator [FIN H-3, see process flow diagram, below]. Due to the pressure drop, the liquefiable portion of the stream drops out in the separator and is routed to three atmospheric storage tanks, [two condensate tanks, EPN TK1 & TK2, and one produced water tank TK3]. The produced water tank also receives the scrubber dumps off the engine. Liquids from these tanks are periodically collected by tank truck [EPN L-1] and sent offsite.

The gaseous stream from the inlet separator is routed to the remote Reciprocating Internal Combustion Engine (RICE) (screw compressor) [EPN E1] and compressed prior to entering the TEG dehydrator. After dehydration, the natural gas steam exits the compressor station via pipeline. The rich glycol (saturated with water) enters a flash tank where the flashed vapors are sent to the reboiler as fuel. The remaining rich glycol is routed into the TEG regenerator column where the entrained water and other constituents are removed and the lean glycol is circulated back in the dehydration unit. The regenerator overhead vent is routed to the flare [EPN FLARE-1] having a 98% control efficiency. The dehydrated pipeline quality natural gas exits the compressor station via a pipeline.

Heaters [EPN H1-H5] are used for the separator, tanks and dehydration reboiler. The station operates 8,760 hours per year.

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## II. EQUIPMENT LIST

Table 1 lists the equipment subject to 40 CFR § 49.158.

Table 1

Equipment Type	<sup>1</sup> FIN	Constructi on date	Capacity <sup>3</sup>	Content/Fuel	Serial No.
1004 HP RICE (Screw Compressor) Engine, 4-stroke-lean burn Caterpillar 3512	F1	5/16/2002	1004hp 7.1MMBtu/hr	Fuel gas	SN 7NJ00895
TEG Dehydrator	DEHY-1	Pre 7/2002	4.5 MMSCFD	Fuel Gas	PESCO
Flare	FLARE-1		0.5 MMSCFH	Fuel Gas	
Three Tank Heaters	H1, H2, H5	2002- 2003	0.5 MMBtu/hr each	Fuel gas	
Separator Heater	H3	Pre 7/2004	0.5 MMBtu/hr	Fuel gas	

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Equipment Type	<sup>1</sup> FIN	Constructi on date	Capacity <sup>3</sup>	Content/Fuel	Serial No.
Dehydrator Heater/Reboiler	H4	Pre 7/2005	1.06 MMBtu/hr	Fuel gas	
Two Condensate Tanks	TK1 TK2	2002	400 bbl each	Condensate	
Loading Station	L-1	2002	<sup>2</sup> 16 bbl/day	Condensate & produced water	
Produced Water Tank	TK3	Pre 7/2002	400 bbl	Water from Separator and Engine scrubber	
<sup>3</sup> Three Production Well Sites and Equipment	WS-1	12/1/200 6	Oil throughput 1.5 bbl/day per well	Oil and gas operations	

Table Notes:

1 FIN is Facility/Equipment identification number.

2 Based on maximum condensate and produced water production.

3 Production well sites include JA-4, Fractured well JA-14G, JA-16 well pads, four production tanks and one pump

### III. REGULATORY APPLICABILITY

1. The TEG dehydrator is subject to 40 CFR Part 63, Subpart HH. With the use of the flare, resulting actual average emissions of benzene shall be less than 1 tpy (0.90 mega gram per year) from the TEG dehydration system (regenerator) process vent. Therefore, the unit is exempt from other control requirements as specified at 40 CFR § 63.764(e)(1). Recordkeeping requirements for the above exemptions are specified in 40 CFR § 63.774(d)(1)(ii) and the test methods for compliance are in 40 CFR § 63.772(b)(2).
2. The flare [FLARE-1] is subject to the requirements of 40 CFR § 63.11(b).
3. Compressor Engine [E1] is subject to emission standards, monitoring, testing, recordkeeping and reporting rules as a non-emergency, remote, four stroke lean burn engine (4SLB) in 40 CFR Part 63, Subpart ZZZZ. As an area source of HAP, the compressor engine, EPN E1 is subject to emission standards [40 CFR § 63.6603(a) Table 2d.8], and monitoring, testing, recordkeeping and reporting rules in 40 CFR § 63.6585 (40 CFR Part 63, Subpart ZZZZ). These specifications are in Section V of the permit.
4. If the compressor engine or dehydrator are reconstructed or replaced, and/or changes occur to the equipment at the compressor station, an NSR applicability analysis shall be performed [40 CFR § 49.153(b)].
5. 40 CFR § 60.5365a is applicable to the well site JA-14G, since the well completion operation following the hydraulic fracturing occurred in March 2016. Fugitive emission monitoring of fugitive components is required, pursuant to 40 CFR § 60.5397a and § 60.5430a.
6. The issuance of this permit does not provide relief for any federal applicable regulations that the facility may have been subject to, including 40 CFR Parts 52, 60, 63, or 71, prior to issuance of this permit.

7. Existing emission sources, not specifically identified within this permit, are authorized to continue to operate as demonstrated in the permit application. These emission sources are subject to applicable federal standards.

#### IV. GENERAL CONDITIONS

1. This permit and any required attachments shall be retained and made available for inspection upon request at the site.
2. The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified ten (10) days in advance of any significant deviation from the permit application as well as any plans, specifications or supporting data furnished.
3. The Permittee, shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted source. Noncompliance with any permit term or condition is a violation of the permit and may constitute a violation of the CAA, and may be grounds for an enforcement action or a permit termination or revocation.
4. The permitted source must not cause or contribute to a National Ambient Air Quality Standard (NAAQS) violation; or in an attainment area, must not cause or contribute to a Prevention of Significant Deterioration (PSD) increment violation as in 40 CFR § 49.155(a)(7).
5. Issuance of this permit does not relieve the Permittee, the owner, and/or the operator of the responsibility to comply fully with all other applicable Federal and Tribal rules, regulations, and orders now or hereafter in effect.
6. It is not a defense for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
7. For proposed modifications, as defined at 40 CFR § 49.152(d), that would increase an emissions unit's allowable emissions of a regulated NSR pollutant above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to 40 CFR §§ 49.154 and 49.155 approving the emission increase. For a proposed modification that is not otherwise subject to review under major NSR or minor NSR, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at 40 CFR § 49.159(f)(1)(v).
8. At such time that a new or modified source at the permitted facility or modification of the permitted facility becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of 40 CFR § 52.21 shall apply to the source or modification as though construction had not yet commenced on the source or modification.

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9. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to 40 CFR § 49.155(a)(7)(iv). The filing of a request by the Permittee for a permit revision, revocation and re-issuance or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen a permit for a cause on its own initiative, e.g., if the permit contains a material mistake or the facility fails to assure compliance with the applicable requirements.
10. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.
11. *Property Rights:* The permit does not convey any property rights of any sort or any exclusive privilege.
12. *Information Requests:* The Permittee shall furnish to the EPA, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. For any such information claimed to be confidential, the Permittee shall also submit a claim of confidentiality in accordance with Part 2, Subpart B of Title 40 CFR.
13. *Inspection and Entry:* The EPA or its authorized representatives may inspect the permitted facility during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:
  - a. Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
  - b. Have access to and copy, at reasonable times, any records that are required to be kept as in the conditions of the permit;
  - c. Inspect, during normal business hours or while the source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
  - d. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
  - e. Record any inspection by use of written, electronic, magnetic and photographic media.
14. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the draft permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within thirty days of receipt of the permit and should include the reason or reasons for rejection.
15. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR § 49.159(f). The Air Program Associate Director shall be notified in writing/electronically at the address shown below if the company is sold or changes its name.

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U.S. Environmental Protection Agency  
Region 6 Air Permitting, Multimedia Division  
Tribal Air Permitting, 6MM-AP  
1445 Ross Ave, Dallas TX 75202  
[R6AirPermits@epa.gov](mailto:R6AirPermits@epa.gov)

## V. SPECIAL CONDITIONS

- The emissions identified in Table 2, establish XTO's baseline allowable emissions for future NSR applicability purposes.

**Table 2**

Equipment Type	<sup>1</sup> EPN	PTE Emissions in TPY				
		NO <sub>x</sub>	SO <sub>2</sub>	<sup>3</sup> VOC	CO	PM <sub>10/2.5</sub>
1004 HP Compressor 4-stroke-lean burn Maximum firing rate is 7.2 MMBtu/hr	E1	17.9	<0.1	6.4	23.5	<0.1
<sup>2</sup> Five auxiliary heaters. Maximum firing rate is 3.0 MMBtu/hr for all heaters	H1-H5	1.3	<0.1	0.1	1.1	0.3
TEG Dehydrator Controlled by Flare	FLARE-1	0.3	<0.1	2.2	1.3	0.1
Two 400 bbl Condensate Tanks	TK1 TK2			24.2		
<sup>2</sup> One 400 bbl Produced Water Tank	TK3			0.24		
<sup>2</sup> Production Well Sites, JA-4, JA-14G, JA-16F, 4-Tanks and Pump	WS-1	5.2	0.02	12.63	3.28	0.21
Truck Loading Emissions	L-1			0.7		
Fugitives for Facility	FUG			14.7		
Maintenance Operations	M-Fac.			3.7		
Total Facility Emissions (estimated)		24.7	< 0.5	64.9	29.2	<0.8

Table Notes:

- Emission Point Number*
  - These are insignificant emission units that do not require monitoring for individual operations.*
  - Total estimated HAP emissions from the facility is 3.255 tpy, which includes 0.8 tpy from the dehydrator/regenerator vent system.*
- The maximum TEG dehydrator capacity shall not exceed 4.5 MMSCFD of natural gas on a 24-hour rolling average. Capacity shall be continuously monitored at the outlet sales gas meter for the facility.
  - The TEG dehydrator/regenerator shall vent to the flare [EPN FLARE-1] at all times during operation. The actual average emissions of benzene from the TEG dehydrator to the atmosphere shall be determined by the procedures specified in 40 CFR § 63.772(b)(2). The TEG dehydrator is exempted from monitoring throughput requirements since the benzene emissions shall be less than 1 tpy [40 CFR § 63.765(e)(1)(i) and (ii)].

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4. The flare [EPN FLARE-1] shall be operated and maintained as required by 40 CFR § 63.11(b). Monitoring of the flare flame by thermocouple, ultra violet beam sensor or infrared sensor is required prior to operation of the dehydrator [40 CFR § 63.987(c)]. The minimum net heating value of the gases to the flare shall meet the requirements of 40 CFR § 63.11(b)(ii). The flare efficiency as determined by compliance tests should be at least 98%, 40 CFR § 63.771(d)(1).
5. There shall be no visible emissions from the flare when operated. Monitor the flare using 40 CFR Part 60, Method 22, Appendix A whenever in operation.
6. The minimum efficiency of the flare shall be 98% and determined by compliance tests as in VI 2.
7. The annual rates to the condensate tanks shall be determined by the truck loading operations and records to determine the emissions from these tanks.
8. The tanks shall be maintained for integrity and the loading operations be conducted without any spills.
9. Evaluate the remote status of the engine [4SLB] EPN E1, every 12 months in compliance with 40 CFR § 63.6675.
10. EPN E1 shall comply with the maintenance requirements of 40 CFR §§ 63.6603(a) Table 2d.8, 63.6605(a) and (b); 63.6625 (e) and (j); and 63.6640(a) and (b). This includes maintenance operations to change oil/filter, inspect spark plugs, and inspect hoses/belts every 2,160 hours of operation or annually.
11. Startup time for [EPN E1] shall meet the requirements of 40 CFR § 63.6625(h).
12. Fuel gas will be used for all heaters and the compressor engine with an estimated Btu content of 1080/SCF. Fuel gas is production gas from the facility's dehydrator prior to contract sales.
13. Maintenance operations for flare and other equipment shall be done to minimize VOC emissions using good operating and maintenance practices.
14. Fugitive emission monitoring for well site JA-14G shall meet the requirements in 40 CFR § 63.5397a using an optical gas imaging or 40 CFR Part 60, Method 21, Appendix A-7.

## **VI. COMPLIANCE TESTS**

1. The Permittee shall prepare a test plan to verify that the dehydrator meets the requirement of 40 CFR § 63.772(b)(2) with the use of the flare. The flare tests shall also meet the requirements of 40 CFR § 63.11(b). Tests should be conducted within 180 days of the effective date of this permit, and be conducted to determine the dehydrator's maximum natural gas capacity rate does not exceed 4.5 MMSCFD on a 24-hour rolling average.
2. The Permittee shall test and verify compliance at a minimum of every 60 months that the flare [FL1] meets the requirements of 40 CFR § 63.11(b).

3. The Permittee shall comply with any applicable performance or compliance test for the Compressor Engine [E1] as required by 40 CFR §§ 63.6612, 63.6615, and 63.6620, if applicable.

## **VII. RECORDKEEPING AND MONITORING REQUIREMENTS**

1. All records shall be kept for a minimum of 5 years from the date of creation.
2. Monitor the fuel to the Compressor Engine [EPN E1] and the number of startup and shutdown events. Record the time of startup in compliance with 40 CFR § 63.6625(h).
3. Compressor engine EPN E1 shall meet the monitoring and recordkeeping requirements in 40 CFR §§ 63.6625(j) and 63.6640(a), Table 6.9. Maintenance records of these units must be kept.
4. Monitor and record the flow rate to the dehydrator on a daily basis and keep records of the total flow to the unit. Monitor the dehydrator emissions using the method specified in 40 CFR § 63.772(b)(2)(i). Keep records of the dehydrator operations pursuant to 40 CFR § 63.774(d)(1).
5. Record the type of maintenance operations of the compressor, dehydrator and flare and other pieces of equipment to include the time and date for such an event.
6. Monitor and record the results of the monitoring of the semiannual fugitive emissions and any maintenance of leaking equipment at the JA-14G wellsite as required by 40 CFR §§ 60.5397a(f)(1), 60.5397a(g)(1), 60.5397a(h), 60.5397a(j), and 60.5420a(c)(15).
7. Monitor and maintain records on the flare operation as required by 40 CFR § 63.11(b).
8. Maintain all records of tests and testing protocol as required by Section VI for any initial and periodic tests on the dehydrator and flare [40 CFR Part 63, Subpart HH], and for the compressor engine [40 CFR Part 63, Subpart ZZZZ].
9. Monitor the volume of produced water and condensate on an annual basis to calculate emissions from the tanks and loading operations. The volumes of produced water and condensate are monitored by the sales/load tickets of the facility.

## **VIII. REPORTING REQUIREMENTS**

Reports should be sent electronically to EPA Compliance Assurance and Enforcement Division at: [R6TribalNSRCompliance@epa.gov](mailto:R6TribalNSRCompliance@epa.gov), and a copy to [R6AirPermits@epa.gov](mailto:R6AirPermits@epa.gov)

1. The Permittee shall promptly submit to EPA a written report of any deviations of emission or operational limits and a description of any corrective actions or preventative measures taken. A "prompt" deviation report is one that is emailed to [R6TribalNSRCompliance@epa.gov](mailto:R6TribalNSRCompliance@epa.gov)
  - a. Thirty (30) days from the discovery of a deviation that would cause the Permittee to exceed the facility-wide emission limits if left un-corrected for more than five (5) days after discovering the deviation; and

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- b. Twelve (12) months from the discovery of a deviation of recordkeeping or other permit conditions that do not affect the permittee's ability to meet the facility-wide emission limits.
2. Reports for the compressor engine E1 should comply with 40 CFR 63.6640(b).
3. Reports for the dehydrator and flare shall meet the requirements as in 40 CFR 63.774(d)(1).
4. An annual report documenting the twelve (12) month annual emissions for each previous calendar year no later than April 1<sup>st</sup> is to be submitted to EPA to the electronic addresses as indicated above. For the first calendar year the Permittee shall submit the cumulative facility wide limits. The report shall also document that no operational restriction established in the special conditions section of this permit has been exceeded.
5. The Permittee shall submit any record or report required by this permit upon EPA request.

## Table of Acronyms

4SLB	4 Stroke Lean Burn
4SRB	4 Stroke Rich Burn
BACT	Best Available Control Technology
Barrells	bbl
bhp	Brake Horse Power
Btu/hr	British Thermal Units per Hour
CFR	Code of Federal Register
CH <sub>4</sub>	Methane
CAA	Clean Air Act
CO	Carbon Monoxide
dscf	Dry Standard Cubic Feet
FIP	Federal Implementation Plan
FR	Federal Register
GHG	Greenhouse Gases
HHV	High Heating Value
HAP	Hazardous Air Pollutants
hr	Hour
kW	Kilowatt
lb	Pound(s)
lb/yr	Pounds per year
MACT	Maximum Achievable Control Technology
MMBtu/hr	Million British Thermal Units per hour
MMSCFD	Million Standard Cubic Feet per day
NESHAP	National Emission Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standard
NO <sub>x</sub>	Oxides of Nitrogen
NSR	New Source Review
PTE	Potential to Emit
RICE	Reciprocating Internal Combustion Engine
tpy	Tons per year
VOC	Volatile Organic Compounds
%	Percent