New York State Department of Environmental Conservation Permit Review Report

Permit ID: 3-3309-00101/00003 Renewal Number: 1

Facility Identification Data

Name: ORANGE RECYCLING & ETHANOL PROD. FAC.

Address: 159 DOLSON AVENUE MIDDLETOWN, NY 10940

Owner/Firm

Name: PENCOR MASADA OXYNOL LLC

Address: 2124 CHRISTINA COVE BIRMINGHAM, AL 35244, USA

Owner Classification: Corporation/Partnership

Permit Contacts

Division of Environmental Permits: Name: MICHAEL D MERRIMAN

Address: DIVISION OF ENVIRONMENTAL PERMITS

21 SOUTH PUTT CORNERS RD NEW PALTZ, NY 12561-1696

Phone:8452563165

Division of Air Resources: Name: THOMAS M MILLER

Address: 21 SOUTH PUTT CORNERS RD

NEW PALTZ, NY 12561-1696

Phone:8452563149

Air Permitting Contact: Name: DAVID WEBSTER

Address: 1400 URBAN CENTER DR STE 125

BIRMINGHAM, AL 35242

Phone:2059680078

Permit Description Introduction

The Title V operating air permit is intended to be a document containing only enforceable terms and conditions as well as any additional information, such as the identification of emission units, emission points, emission sources and processes, that makes the terms meaningful. 40 CFR Part 70.7(a)(5) requires that each Title V permit have an accompanying "...statement that sets forth the legal and factual basis for the draft permit conditions". The purpose for this permit review report is to satisfy the above requirement by providing pertinent details regarding the permit/application data and permit conditions in a more easily understandable format. This report will also include background narrative and explanations of regulatory decisions made by the reviewer. It should be emphasized that this permit review report, while based on information contained in the permit, is a separate document and is not itself an enforceable term and condition of the permit.

Summary Description of Proposed Project

Application for renewal of Air Title V Facility.



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Attainment Status

ORANGE RECYCLING & ETHANOL PROD. FAC. is located in the town of MIDDLETOWN in the county of ORANGE.

The attainment status for this location is provided below. (Areas classified as attainment are those that meet all ambient air quality standards for a designated criteria air pollutant.)

Criteria Pollutant Attainment Status Particulate Matter (PM) ATTAINMENT Particulate Matter < 10μ in diameter (PM10)</td> ATTAINMENT Sulfur Dioxide (SO2) ATTAINMENT Ozone* MODERATE NON-ATTAINMENT Oxides of Nitrogen (NOx)** ATTAINMENT Carbon Monoxide (CO) ATTAINMENT

Facility Description

THE FACILITY WILL SORT RECYCLABLES FROM MUNICIPAL SOLID WASTE (MSW) AND CONVERT PROCESSED MSW AND SEWAGE SLUDGE TO FUEL-GRADE ETHANOL AND OTHER BY-PRODUCTS THROUGH A CONCENTRATED ACID-HYDROLYSIS-FERMENTATION PROCESS. OTHER BY-PRODUCTS OF THE ETHANOL PRODUCTION PROCESS WILL BE CARBON DIOXIDE AND LIGNIN (FOR ENERGY RECOVERY).

Permit Structure and Description of Operations

The Title V permit for ORANGE RECYCLING & ETHANOL PROD. FAC. is structured in terms of the following hierarchy: facility, emission unit, emission point, emission source and process.

A facility is defined as all emission sources located at one or more adjacent or contiguous properties owned or operated by the same person or persons under common control. The facility is subdivided into one or more emission units (EU). Emission units are defined as any part or activity of a stationary facility that emits or has the potential to emit any federal or state regulated air pollutant. An emission unit is represented as a grouping of processes (defined as any activity involving one or

^{*} Ozone is regulated in terms of the emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NOx) which are ozone precursors.

^{**} NOx has a separate ambient air quality standard in addition to being an ozone precursor



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more emission sources (ES) that emits or has the potential to emit any federal or state regulated air pollutant). An emission source is defined as any apparatus, contrivance or machine capable of causing emissions of any air contaminant to the outdoor atmosphere, including any appurtenant exhaust system or air cleaning device. [NOTE: Indirect sources of air contamination as defined in 6 NYCRR Part 203 (i.e. parking lots) are excluded from this definition]. The applicant is required to identify the principal piece of equipment (i.e., emission source) that directly results in or controls the emission of federal or state regulated air pollutants from an activity (i.e., process). Emission sources are categorized by the following types:

combustion - devices which burn fuel to generate heat, steam or power

incinerator - devices which burn waste material for disposal

control - emission control devices

process - any device or contrivance which may emit air contaminants that

is not included in the above categories.

ORANGE RECYCLING & ETHANOL PROD. FAC. is defined by the following emission unit(s): Emission unit UGASBR - THIS EMISSION UNIT IS COMPRISED OF A 245 MMBTU/hr FLUIDIZED BED GASIFIER AND A 124 MMBTU/hr GAS FIRED PACKAGE BOILER. Emission unit UGASBR is associated with the following emission points (EP):

It is further defined by the following process(es):

Process: BLR is located at Building GASIFBLD - THE 124 MMBTU/hr PACKAGE BOILER PROVIDES THE BALANCE OF STEAM FOR PROCESSES AT THE PROPOSED FACILITY. NATURAL GAS IS THE ONLY FUEL USED IN THE PACKAGE BOILER. Process: GAS is located at Building GASIFBLD - STEAM FOR PROCESSESS AT THE ORANGE RECYCLING & ETHANOL PRODUCTION FACILITY IS PROVIDED BY A 245 MMBTU/hr FLUIDIZED BED GASIFIER AND A 124 MMBTU/hr PACKAGE BOILER, THE PRIMARY SOURCE OF STEAM IS GENERATED FROM THE GASIFIER THROUGH OXIDATION OF RESIDUAL LIGNIN, PROCESSED BIOSOLIDS, AND DIGESTER GAS. THE PACKAGE BOILER IS LISTED AS A SEPARATE PROCESS WHICH PROVIDES THE BALANCE OF THE STEAM. THE GASIFIER UTILIZES ONE 15 MMBTU/hr AND TWO 40 MMBTU/hr (TOTAL 95 mmBTU/hr) NATURAL GAS BURNERS FOR START UP BEFORE INTRODUCING THE LIGNIN TO RAISE THE TEMPERATURE OF THE SYSTEM DURING THE FIRST FIVE HOURS OF STARTUP. FIVE STARTUPS AND SHUTDOWNS PER YEAR ARE PROJECTED WITH EACH STARTUP TAKING EIGHT HOURS AND EACH SHUTDOWN TAKING ONE HOUR. THEREFORE, TOTAL START UP TIME IS APPROXIMATELY 40 HRS PER YEAR AND TOTAL SHUTDOWN TIME APPROXIMATELY 5 HRS PER YEAR.

Emission unit USCRUB - THIS EMISSION UNIT IS COMPRISED OF THE SLUDGE SYSTEMS SCRUBBER AND THE PROCESS BUILDING SCRUBBER.

Emission unit USCRUB is associated with the following emission points (EP): 00002,00003

It is further defined by the following process(es):

Process: PBS is located at Building PROCBLDG - PROCESS BUILDING SCRUBBER CONTROLS POSSIBLE ODOROUS AIR EMISSIONS FROM BELT PRESSES, BELT PRESS FILTRATE



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TANKS. THE LIGNIN WASH TANK AND ASSOCIATED CONVEYORS.

Process: SRS is located at Building PROCBLDG - SLUDGE SYSTEMS SCRUBBER CONTROLS EMISSIONS AND ODORS FROM THE SEWAGE SLUDGE RECEIVING AREA AND THE ENCLOSED BLENDED SLUDGE STORAGE TANK.

Emission unit UTANKS - THIS EMISSION UNIT IS COMPRISED OF A 100,000 GALLON ETHANOL STORAGE TANKS, A 10,000 GALLON ETHANOL DAY STORAGE TANK AND A 10,000 GALLON OFF-SPEC ETHANOL STORAGE TANK.

It is further defined by the following process(es):

Process: TNKETHANOL STORAGE TANKS.

Emission unit UTOWER - THIS EMISSION UNIT IS COMPRISED OF EIGHT IDENTICAL COOLING TOWERS WITH A TOTAL WATER THROUGHPUT OF 18,310 GALLONS PER MINITE

Emission unit UTOWER is associated with the following emission points (EP):

00004,00005,00006,00007,00008,00009,00010,00011

It is further defined by the following process(es):

Process: TOWEIGHT COOLING TOWERS ARE INCLUDED IN A CLOSED LOOP COOLING WATER SYSTEM.

Title V/Major Source Status

ORANGE RECYCLING & ETHANOL PROD. FAC. is subject to Title V requirements. This determination is based on the following information:

THE FACILITY HAS BEEN IDENTIFIED AS A MAJOR SOURCE OF AIR EMISSIONS FOR SULFUR DIOXIDE AND PARTICULATES. HOWEVER, NON-ATTAINMENT AND ATTAINMENT NEW SOURCE REVIEW DOES NOT APPLY TO THIS FACILITY.

Program Applicability

The following chart summarizes the applicability of ORANGE RECYCLING & ETHANOL PROD. FAC. with regards to the principal air pollution regulatory programs:

Regulatory Program	Applicability
PSD	NO
NSR (non-attainment)	NO
NESHAP (40 CFR Part 61)	NO
NESHAP (MACT - 40 CFR Part 63)	NO
NSPS	YES



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TITLE IV	NO
TITLE V	YES
TITLE VI	NO
RACT	YES
SIP	YES

NOTES:

PSD Prevention of Significant Deterioration (40 CFR 52) - requirements which pertain to major stationary sources located in areas which are in attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NSR New Source Review (6 NYCRR Part 231) - requirements which pertain to major stationary sources located in areas which are in non-attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NESHAP National Emission Standards for Hazardous Air Pollutants (40 CFR 61) - contaminant and source specific emission standards established prior to the Clean Air Act Amendments of 1990 (CAAA) which were developed for 9 air contaminants (inorganic arsenic, radon, benzene, vinyl chloride, asbestos, mercury, beryllium, radionuclides, and volatile HAP's)

MACT Maximum Achievable Control Technology (40 CFR 63) - contaminant and source specific emission standards established by the 1990 CAAA. Under Section 112 of the CAAA, the US EPA is required to develop and promulgate emissions standards for new and existing sources. The standards are to be based on the best demonstrated control technology and practices in the regulated industry, otherwise known as MACT. The corresponding regulations apply to specific source types and contaminants.

NSPS New Source Performance Standards (40 CFR 60) - standards of performance for specific stationary source categories developed by the US EPA under Section 111 of the CAAA. The standards apply only to those stationary sources which have been constructed or modified after the regulations have been proposed by publication in the Federal Register and only to the specific contaminant(s) listed in the regulation.

Title IV Acid Rain Control Program (40 CFR 72 thru 78) - regulations which mandate the implementation of the acid rain control program for large stationary combustion facilities.

Title VI Stratospheric Ozone Protection (40 CFR 82, Subparts A thru G) - federal requirements that apply to sources which use a minimum quantity of CFC's (chlorofluorocarbons), HCFC's(hydrofluorocarbons)or other ozone depleting substances or regulated substitute substances in equipment such as air conditioners, refrigeration equipment or motor vehicle air conditioners or appliances.



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RACT Reasonably Available Control Technology (6 NYCRR Parts 212.10, 226, 227-2, 228, 229, 230, 232, 233, 234, 235, 236) - the lowest emission limit that a specific source is capable of meeting by application of control technology that is reasonably available, considering technological and economic feasibility. RACT is a control strategy used to limit emissions of VOC's and NOx for the purpose of attaining the air quality standard for ozone. The term as it is used in the above table refers to those state air pollution control regulations which specifically regulate VOC and NOx emissions.

SIP State Implementation Plan (40 CFR 52, Subpart HH) - as per the CAAA, all states are empowered and required to devise the specific combination of controls that, when implemented, will bring about attainment of ambient air quality standards established by the federal government and the individual state. This specific combination of measures is referred to as the SIP. The term here refers to those state regulations that are approved to be included in the SIP and thus are considered federally enforceable.

Compliance Status

Facility is in compliance with all requirements

SIC Codes

SIC or Standard Industrial Classification code is an industrial code developed by the federal Office of Management and Budget for use, among other things, in the classification of establishments by the type of activity in which they are engaged. Each operating establishment is assigned an industry code on the basis of its primary activity, which is determined by its principal product or group of products produced or distributed, or services rendered. Larger facilities typically have more than one SIC code.

SIC Code Description

4953 REFUSE SYSTEMS

SCC Codes

SCC or Source Classification Code is a code developed and used by the USEPA to categorize processes which result in air emissions for the purpose of assessing emission factor information. Each SCC represents a unique process or function within a source category logically associated with a point of air pollution emissions. Any operation that causes air pollution can be represented by one or more SCC's.

SCC Code	Description
3-85-001-10	COOLING TOWER
	COOLING TOWER - PROCESS COOLING
	OTHER NOT SPECIFIED
1-02-006-01	EXTERNAL COMBUSTION BOILERS - INDUSTRIAL
	INDUSTRIAL BOILER - NATURAL GAS
	Over 100 MBtu/Hr
3-99-999-99	MISCELLANEOUS MANUFACTURING INDUSTRIES



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MISCELLANEOUS INDUSTRIAL PROCESSES

SEE COMMENT **

4-07-158-09 ORGANIC CHEMICAL STORAGE

ORGANIC CHEMICAL STORAGE - FLOATING ROOF TANK -

ALCOHOLS

FLOAT ROOF TANKS: ALCOHOLS: ETHYL ALCOHOL: STANDING LOSS

Facility Emissions Summary

In the following table, the CAS No. or Chemical Abstract Series code is an identifier assigned to every chemical compound. [NOTE: Certain CAS No.'s contain a 'NY' designation within them. These are not true CAS No.'s but rather an identification which has been developed by the department to identify groups of contaminants which ordinary CAS No.'s do not do. As an example, volatile organic compounds or VOC's are identified collectively by the NY CAS No. 0NY998-00-0.1 The PTE refers to the Potential to Emit. This is defined as the maximum capacity of a facility or air contaminant source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or air contamination source to emit any air contaminant, including air pollution control equipment and/or restrictions on the hours of operation, or on the type or amount or material combusted, stored, or processed, shall be treated as part of the design only if the limitation is contained in federally enforceable permit conditions. The PTE Range represents an emission range for a contaminant. Any PTE quantity that is displayed represents a facility-wide emission cap or limitation for that contaminant. If no PTE quantity is displayed, the PTE Range is provided to indicate the approximate magnitude of facility-wide emissions for the specified contaminant in terms of tons per year (tpy). The term 'HAP' refers to any of the hazardous air pollutants listed in section 112(b) of the Clean Air Act Amendments of 1990. Total emissions of all hazardous air pollutants are listed under the special NY CAS No. 0NY100-00-0. In addition, each individual hazardous air pollutant is also listed under its own specific CAS No. and is identified in the list below by the (HAP) designation.

Cas No. Contaminant Name			PTE
	-	lbs/yr	Range
000084-74-2	1,2-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER(HAP)		> 0 but < 10 tpy
001746-01-6	2,3,7,8-TETRACHLORODIBENZO-P-D IOXIN(HAP)		> 0 but < 10 tpy
007664-41-7	AMMONIA		> 0 but < 2.5 tpy
007440-38-2	ARSENIC (HAP)		> 0 but < 10 tpy
000071-43-2	BENZENE (HAP)		> 0 but < 10 tpy
000106-46-7	BENZENE, 1,4-DICHLORO-(HAP)		> 0 but < 10 tpy
000117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE(HAP)		> 0 but < 10 tpy
007440-43-9	CADMIUM (HAP)		> 0 but < 10 tpy
000630-08-0	CARBON MONOXIDE		>= 50 tpy but < 100 tpy
018540-29-9	CHROMIUM(VI)(HAP)		> 0 but < 10 tpy
0NY100-00-0	НАР		>= 2.5 tpy but < 10 tpy
007647-01-0	HYDROGEN CHLORIDE (HAP)		> 0 but < 10 tpy
007439-92-1	LEAD (HAP)		> 0 but < 10 tpy
007439-97-6	MERCURY (HAP)		> 0 but < 10 tpy
000074-87-3	METHYL CHLORIDE (HAP)		> 0 but < 10 tpy
0NY210-00-0	OXIDES OF NITROGEN	19900	
0NY075-00-0	PARTICULATES		>= 100 tpy but < 250 tpy
000127-18-4	PERCHLOROETHYLENE (HAP)		> 0 but < 10 tpy



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000108-95-2	PHENOL (HAP)	> 0 but < 10 tpy
000106-44-5	PHENOL, 4-METHYL(HAP)	> 0 but < 10 tpy
0NY075-00-5	PM-10	>= 100 tpy but < 250 tpy
007782-49-2	SELENIUM (HAP)	> 0 but < 10 tpy
007446-09-5	SULFUR DIOXIDE	492000
000108-88-3	TOLUENE (HAP)	> 0 but < 10 tpy
000079-01-6	TRICHLOROETHYLENE (HAP)	> 0 but < 10 tpy
0NY998-00-0	VOC	>= 10 tpy but < 25 tpy

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Emergency Defense - 6NYCRR Part 201-1.5

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

- (a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;
- (2) The equipment at the permitted facility causing the emergency was at the time being properly operated;
- (3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- (4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- (b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.
- (c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Title V Facilities - 6NYCRR Part 201-1.10(b)

The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.



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Item C: Timely Application for the Renewal of Title V Permits - 6 NYCRR Part 201-6.3(a)(4)

Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item D: Certification by a Responsible Official - 6 NYCRR Part 201-6.3(d)(12)

Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item E: Requirement to Comply With All Conditions - 6 NYCRR Part 201-6.5(a)(2)

The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item F: Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6

NYCRR Part 201-6.5(a)(3)

This permit 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.

Item G: Cessation or Reduction of Permitted Activity Not a Defense - 6NYCRR Part 201-6.5(a)(5)

It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

Item H: Property Rights - 6 NYCRR Part 201-6.5(a)(6)

This permit does not convey any property rights of any sort or any exclusive privilege.



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Item I: Severability - 6 NYCRR Part 201-6.5(a)(9)

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item J: Permit Shield - 6 NYCRR Part 201-6.5(g)

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the major stationary source, and the permit includes the determination or a concise summary thereof. Nothing herein shall preclude the Department from revising or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary abatement authority. Nothing in this permit shall alter or affect the following:

- i. The ability of the Department to seek to bring suit on behalf of the State of New York, or the Administrator to seek to bring suit on behalf of the United States, to immediately restrain any person causing or contributing to pollution presenting an imminent and substantial endangerment to public health, welfare or the environment to stop the emission of air pollutants causing or contributing to such pollution;
- ii. The liability of a permittee of the Title V facility for any violation of applicable requirements prior to or at the time of permit issuance;
- iii. The applicable requirements of Title IV of the Act;
- iv. The ability of the Department or the Administrator to obtain information from the permittee concerning the ability to enter, inspect and monitor the facility.

Item K: Reopening for Cause - 6 NYCRR Part 201-6.5(i)

This Title V permit shall be reopened and revised under any of the following circumstances:



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- i. If additional applicable requirements under the Act become applicable where this permit's remaining term is three or more years, a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended by the Department pursuant to the provisions of Part 201-6.7 and Part 621.
- ii. The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- iii. The Department or the Administrator determines that the Title V permit must be revised or reopened to assure compliance with applicable requirements.
- iv. If the permitted facility is an "affected source" subject to the requirements of Title IV of the Act, and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same procedures as apply to initial permit issuance but shall affect only those parts of the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to the facility by the Department at least thirty days in advance of the date that the permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency.

Item L: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and



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Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: Federally Enforceable Requirements - 40 CFR 70.6(b)

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Regulatory Analysis

Location Facility/EU/EP/Process/	Regulation ES	Short Description	Condition
FACILITY	ECL 19-0301	Powers and Duties of Department with respe	
FACILITY	40CFR 52-A	to air pollution cont Prevention of Signifi Deterioration	



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FACILITY	40CFR	60-A.13	General provisions -	30
U-GASBR/00001/BLR	40CFR	60-A.7(a)	Monitoring requirements Notification and	79
U-GASBR/00001/GAS	40CFR	60-A.7(a)	Recordkeeping Notification and	80
U-GASBR/-/BLR	40CFR	60-A.7(b)	Recordkeeping Notification and	50
U-GASBR/-/GAS	40CFR	60-A.7(b)	Recordkeeping Notification and	72
U-GASBR/-/BLR	40CFR	60-A.7(c)	Recordkeeping Notification and	51
U-GASBR/-/BLR	40CFR	60-A.7(d)	Recordkeeping Notification and	52
U-GASBR/-/BLR	40CFR	60-A.7(f)	Recordkeeping Notification and	53
			Recordkeeping	
U-GASBR/-/BLR		60-A.8(a)	Performance Tests	54
U-GASBR/-/GAS		60-A.8(a)	Performance Tests	73
U-GASBR/-/BLR		60-A.8(b)	Performance Tests	55
U-GASBR/-/GAS	40CFR	60-A.8(b)	Performance Tests	74
U-GASBR/-/BLR	40CFR	60-A.8(d)	Performance Tests	56
U-GASBR/-/GAS	40CFR	60-A.8(d)	Performance Tests	75
U-GASBR/-/BLR	40CFR	60-Db.44b(a)(1)	Standard for Nitrogen	57
, ,			Oxides Firing Natural Gas and Distillate Oil. (see narrative)	
U-GASBR/-/BLR	40CFR	60-Db.46b	Compliance and	58
			Performance Test Methods	
			and Procedures for	
			Particulate Matter and	
			and Nitrogen Oxides.	
II GAGDD / /DID	40000	60 Dl- 40l- (-) (0)		F 0
U-GASBR/-/BLR	4 UCFR	60-Db.48b(e)(2)	Emission monitoring for	59
			Particulate Matter and	
			Nitrogen Oxides	
U-GASBR/-/BLR	40CFR	60-Db.48b(f)	Emission Monitoring for Particulate Matter and	60
			Nitrogen Oxides.	
U-GASBR/-/GAS	40CFR	60-Db.49b(a)	Reporting and	76
			Recordkeeping	
			Requirements.	
U-GASBR/-/BLR	40000	60-Db.49b(d)	Reporting and	61
U-GASBR/ -/ BLR	4001	60-DD.43D(d)		0.1
			Recordkeeping	
			Requirements.	
U-GASBR/-/GAS	40CFR	60-Db.49b(d)	Reporting and	77
			Recordkeeping	
			Requirements.	
U-GASBR/-/BLR	40CFR	60-Db.49b(g)	Reporting and	62
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Applicability Discussion:

Mandatory Requirements: The following facility-wide regulations are included in all Title V permits:

ECL 19-301.

This section of the Environmental Conservation Law establishes the powers and duties assigned to the Department with regard to administering the air pollution control program for New York State.

6NYCRR Part 200-.6

Acceptable ambient air quality - prohibits contravention of ambient air quality standards without mitigating measures

6NYCRR Part 200-.7

Anyone owning or operating an air contamination source which is equipped with an emission control device must operate the control consistent with ordinary and necessary practices, standards and procedures, as per manufacturer's specifications and keep it in a satisfactory state of maintenance and repair so that it operates effectively

6NYCRR Part 201-1.4

This regulation specifies the actions and recordkeeping and reporting requirements for any violation of an applicable state enforceable emission standard that results from a necessary scheduled equipment maintenance, start-up, shutdown, malfunction or upset in the event that these are unavoidable.

6NYCRR Part 201-1.7

Requires the recycle and salvage of collected air contaminants where practical

6NYCRR Part 201-1.8

Prohibits the reintroduction of collected air contaminants to the outside air

6NYCRR Part 201-3.2(a)

An owner and/or operator of an exempt emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart.



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All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains exempt emission sources or units, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control

6NYCRR Part 201-3.3(a)

requirements, regulations, or law.

The owner and/or operator of a trivial emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains trivial emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6NYCRR Part 201-6

This regulation applies to those terms and conditions which are subject to Title V permitting. It establishes the applicability criteria for Title V permits, the information to be included in all Title V permit applications as well as the permit content and terms of permit issuance. This rule also specifies the compliance, monitoring, recordkeeping, reporting, fee, and procedural requirements that need to be met to obtain a Title V permit, modify the permit and demonstrate conformity with applicable requirements as listed in the Title V permit. For permitting purposes, this rule specifies the need to identify and describe all emission units, processes and products in the permit application as well as providing the Department the authority to include this and any other information that it deems necessary to determine the compliance status of the facility.

6NYCRR 201-6.5(a)(4)

This mandatory requirement applies to all Title V facilities. It requires the permittee to provide information that the Department may request in writing, within a reasonable time, in order to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. The request may include copies of records required to be kept by the permit.

6NYCRR 201-6.5(a)(7)

This is a mandatory condition that requires the owner or operator of a facility subject to Title V requirements to pay all applicable fees associated with the emissions from their facility.

6NYCRR 201-6.5(a)(8)

This is a mandatory condition for all facilities subject to Title V requirements. It allows the Department to inspect the facility to determine compliance with this permit, including copying records, sampling and monitoring, as necessary.



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6NYCRR Part 201-6.5(c)

This requirement specifies, in general terms, what information must be contained in any required compliance monitoring records and reports. This includes the date, time and place of any sampling, measurements and analyses; who performed the analyses; analytical techniques and methods used as well as any required QA/QC procedures; results of the analyses; the operating conditions at the time of sampling or measurement and the identification of any permit deviations. All such reports must also be certified by the designated responsible official of the facility.

6NYCRR Part 201-6.5(c)(2)

This requirement specifies that all compliance monitoring and recordkeeping is to be conducted according to the terms and conditions of the permit and follow all QA requirements found in applicable regulations. It also requires monitoring records and supporting information to be retained for at least 5 years from the time of sampling, measurement, report or application. Support information is defined as including all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

6NYCRR Part 201-6.5(c)(3)(ii)

This regulation specifies any reporting requirements incorporated into the permit must include provisions regarding the notification and reporting of permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken.

6NYCRR 201-6.5(d)(5)

This condition applies to every Title V facility subject to a compliance schedule. It requires that reports, detailing the status of progress on achieving compliance with emission standards, be submitted semiannually.

6NYCRR Part 201-6.5(e)

Sets forth the general requirements for compliance certification content; specifies an annual submittal frequency; and identifies the EPA and appropriate regional office address where the reports are to be sent.

6NYCRR 201-6.5(f)(6)

This condition allows changes to be made at the facility, without modifying the permit, provided the changes do not cause an emission limit contained in this permit to be exceeded. The owner or operator of the facility must notify the Department of the change. It is applicable to all Title V permits which may be subject to an off permit change.

6NYCRR Part 202-1.1

This regulation allows the department the discretion to require an emission test for the purpose of determining compliance. Furthermore, the cost of the test, including



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the preparation of the report are to be borne by the owner/operator of the source.

6NYCRR Part 202-2.1

Requires that emission statements shall be submitted on or before April 15th each year for emissions of the previous calendar year.

6NYCRR Part 202-2.5

This rule specifies that each facility required to submit an emission statement must retain a copy of the statement and supporting documentation for at least 5 years and must make the information available to department representatives.

6NYCRR Part 211-.2

This regulation prohibits any emissions of air contaminants to the outdoor atmosphere which may be detrimental to human, plant or animal life or to property, or which unreasonably interferes with the comfortable enjoyment of life or property regardless of the existence of any specific air quality standard or emission limit.

6 NYCRR Part 211.3

This condition requires that the opacity (i.e., the degree to which emissions other than water reduce the transmission of light) of the emissions from any air contamination source be less than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent.

6 NYCRR Part 215

Prohibits open fires at industrial and commercial sites.

40 CFR Part 68.

This Part lists the regulated substances and there applicability thresholds and sets the requirements for stationary sources concerning the prevention of accidental releases of these substances.

40 CFR Part 82, Subpart F

Subpart F requires the reduction of emissions of class I and class II refrigerants to the lowest achievable level during the service, maintenance, repair, and disposal of appliances in accordance with section 608 of the Clean Air Act Amendments of 1990. This subpart applies to any person servicing, maintaining, or repairing appliances except for motor vehicle air conditioners. It also applies to persons disposing of appliances, including motor vehicle air conditioners, refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment. Those individuals, operations, or activities affected by this rule, may be required to comply with specified disposal, recycling, or recovery practices, leak repair practices, recordkeeping and/or technician certification requirements.



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Facility Specific Requirements

In addition to Title V, ORANGE RECYCLING & ETHANOL PROD. FAC. has been determined to be subject to the following regulations:

40CFR 52-A

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40CFR 60-A.13

This regulation specifies how monitoring shall be performed and which methods and appendices are used to determine if the monitoring is adequate and in compliance with the regulated standards.

40CFR 60-A.7 (a)

This regulation requires any owner or operator subject to a New Source Performance Standard (NSPS) to furnish the Administrator with notification of the dates of: construction or reconstruction, initial startup, any physical or operational changes, commencement of performance testing for continuous monitors and anticipated date for opacity observations as required.

40CFR 60-A.7 (b)

This regulation requires the owner or operator to maintain records of the occurrence and duration of any startup, shutdown, or malfunction of the source or control equipment or continuous monitoring system.

40CFR 60-A.7 (c)

This requirement details the information to be submitted in excess emissions and monitoring systems performance reports which must be submitted at least semi-annually for sources with compliance monitoring systems.

40CFR 60-A.7 (d)

This condition specifies the required information and format for a summary report form and details when either a summary form and/or excess emissions reports are required.

40CFR 60-A.7 (f)

This condition specifies requirements for maintenance of files of all measurements, including continuous monitoring system (CMS), monitoring device, and performance testing measurements; all CMS performance evaluations; all CMS or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices for at least two years.

40CFR 60-A.8 (a)

This regulation contains the requirements for the completion date and reporting of Performance Testing (stack testing), at the facility. Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, the owner or operator of the facility must conduct performance test(s) and furnish a written report of the test results.

40CFR 60-A.8 (b)

This regulation contains the requirements for Performance test methods and procedures, to be used by the



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owner or operator, of the affected facility.

40CFR 60-A.8 (d)

This regulation contains the requirements for advance notification of Performance (stack) testing.

40CFR 60-Db.44b (a) (1)

These standards apply to all boilers firing natural gas and/or distillate oil except as provided in 40 CFR 60.44b(a)(4) Duct Burners Used in a Comdined Cycle System.

40CFR 60-Db.46b

This section sets the compliance and performance test methods and procedures for emissions of particulate matter and oxides of nitrogen.

40CFR 60-Db.48b (e) (2)

This section defines the span values of the Continuous Emission Monitor System used to determine Nitrogen Oxides emissions.

40CFR 60-Db.48b (f)

This regulation requires that standby methods of obtaining minimum emissions data for oxides of nitrogen be specified by the source owner or operator.

40CFR 60-Db.49b (a)

This subdivision requires reporting and recordkeeping for affected steam generating units - initial notification.

40CFR 60-Db.49b (d)

This subdivision requires reporting and recordkeeping for affected steam generating units - annual fuel capacity factors.

40CFR 60-Db.49b (g)

This subdivision requires reporting and recordkeeping for affected steam generating units - specific oxides of nitrogen requirements.

40CFR 60-Db.49b (h)

This section requires the facility to submit semi-annual excess emission reports for opacity, oxides of nitrogen and sulfur dioxide emissions.

40CFR 60-Kb.112b (a)

This condition defines applicability of the facility to utilize a fixed roof in combination with an internal floating roof for the storage of petroleum liquids.

40CFR 60-Kb.113b (a) (1)

This section requires the facility to inspect components of the storage vessel used to store Volatile Organic Liquid prior to filling and requires repair if defects exist.

40CFR 60-Kb.113b (a) (5)



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This condition requires a 30 day advance notification prior to filling a Volatile Organic liquid storage vessel.

40CFR 60-Kb.115b (a)

This regulation describes the reporting and recordkeeping requirements for fixed roof storage vessels equipped with an internal floating roof having a capacity greater than 40 cubic meters, storing volatile organic liquids for which construction, reconstruction, or modification commenced after 7/23/84.

40CFR 60-Kb.116b (b)

Owners or operators of affected storage tanks with capacities greater than or equal to 10,000 gallons must keep records of the tanks dimensions and an analysis of its capacity for the life of the tank. If the tank's capacity is less than 20,000 gallons, then it is subject to no other provisions of this subpart.

40CFR 60-Kb.116b (c)

This section defines the facility recordkeeping requirements associated with Volatile Organic liquid quantities and properties.

40CFR 60-VV.482-1

Conditions under sections 482-1 through 482-10 of Subpart VV (the federal new source performance standard for equipment leaks of volatile organic compounds in the synthetic organic chemical industry) specify the monitoring schedule, leak definition and repair requirements for the various types of components covered by the rule. The rule applies to facilities constructed or modified after January 5, 1981.

6NYCRR 201-6.5 (c) (3) (ii)

This regulation specifies any reporting requirements incorporated into the permit must include provisions regarding the notification and reporting of permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken.

6NYCRR 201-7

This regulation sets forth an emission cap that cannot be exceeded by the facility.

6NYCRR 212 .11 (a)

This condition specifies initial performance testing of the gasifier to determine emissions of SO2, NOx, PM, PM10, CO, VOCs, Lead, Opacity, Cadmium, Hydrogen Chloride, Dioxans/Furans and Mercury. Methods for each test are also defined.

6NYCRR 212 .4 (c)

This rule requires existing sources (in operation after July 1, 1973) of solid particulates with environmental rating of B or C which are not subject to Table 5 "Processes for which Permissible Emission Rate is Based on Process Weight, to be limited to an particulate emission rate not to exceed 0.05 grains per dry standard cubic foot.

6NYCRR 212 .6 (a)

This rule specifies an opacity limitation of less than 20% for any six consecutive minute period for all



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process emission sources.

6NYCRR 212 .9 (a)

These conditions identify facility specific limits for compounds and elements defined under 6NYCRR 212.11(a).

6NYCRR 212 .9 (b)

This section refers to Table 2 which specifies the degree of control required for Gases and Liquid Particulate Emissions (Environmental Rating of A, B, C or D) and Solid Particulate Emissions (Environmental Rating A or D) but excluding Volatile Organic Compound Emissions in the New York City Metropolitan Area.

6NYCRR 225-1.2 (a) (2)

This regulation prohibits any person from selling, offering for sale, purchasing or using any fuel which contains sulfur in a quantity exceeding the limitations set forth in Table 1, Table 2, or Table 3 of this section.

6NYCRR 225-1.8

This regulation requires an owner or operator of a facility which purchases and fires coal and/or oil to s ubmit reports to the commissioner containing fuel analysis data, information on the quantity of the fuel received, burned, and results of any stack sampling, stack monitoring and any other procedures to ensure compliance with the provisions of 6 NYCRR Part 225-1.

6NYCRR 227-1.3 (a)

This regulation prohibits any person from operating a stationary combustion installation which emits smoke equal to or greater than 20% opacity except for one six-minute period per hour of not more than 27% opacity.

6NYCRR 229 .1 (d) (2) (v)

This requires the owners or operators of specific types of sources located at facilities in areas other than the New York City metropolitan area or the Lower Orange County metropolitan area, which were designated as nonattainment areas for ozone on or after August 23, 1979, to comply with this Part according to a specific date or compliance schedule (subdivision(g)) and specified control requirements of section 229.3 of this Part.

6NYCRR 229 .3 (e) (1)

This regulation requires fixed roof storage tanks subject to Part 229 to be equipped with an internal floating roof with a liquid-mounted primary seal and gasketed fittings, or equivalent control. Furthermore, replacement of other than liquid mounted seals is to be performed only when the tank is cleaned and gas-freed for other purposes.

6NYCRR 229 .5 (d)

This section requires facilities subject to the requirements under Part 229.3, to maintain a record of the capacity of the volatile organic liquid storage tanks, in gallons, for a period of 5 years.

6NYCRR 231-2



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The provisions of Subpart 231-2 apply to new or modified major facilities. The contaminants of concern state-wide are nitrogen oxides and volatile organic compounds since New York State is located in the ozone transport region and because there are ozone non-attainment areas within the state. In the New York City metropolitan area, carbon monoxide is also a non-attainment contaminant. In addition, particulate matter less than 10 microns in size (PM-10) is a non-attainment contaminant in Manhattan County.

6NYCRR 236 .3 (c)

This condition outlines variations from the typical quarterly leak detection and repair schedule for certain types of synthetic organic chemical manufacturing components.

6NYCRR 236 .4 (a)

This condition requires repairs to be performed on leaking components at synthetic organic chemical mfg. facilities. This section of the regulation also limits the time in which the repairs must be completed and the circumstances for delaying the repairs.

6NYCRR 236 .5 (a)

Section 236.5 requires recordkeeping and reporting of the process unit component leak detection and repair program. This includes an maintaining an onsite inspection log for two years and submitting quarterly reports.

Compliance Certification

Summary of monitoring activities at ORANGE RECYCLING & ETHANOL PROD. FAC.:

Location	Type of Monitoring	Cond No.
Facility/EU/EP/Process/ES		
U-GASBR/-/BLR	record keeping/maintenance procedures	51
U-GASBR/-/BLR	continuous emission monitoring (cem)	57
U-GASBR/-/BLR	record keeping/maintenance procedures	59
U-GASBR/-/GAS	record keeping/maintenance procedures	76
U-GASBR/-/BLR	record keeping/maintenance procedures	61
U-GASBR/-/GAS	record keeping/maintenance procedures	77
U-GASBR/-/BLR	record keeping/maintenance procedures	62
U-GASBR/-/BLR	record keeping/maintenance procedures	63
U-TANKS/-/TNK/TANK1	record keeping/maintenance procedures	91
U-TANKS/-/TNK/TANK1	record keeping/maintenance procedures	92
U-TANKS/-/TNK/TANK1	record keeping/maintenance procedures	93
U-TANKS/-/TNK/TANK1	record keeping/maintenance procedures	94
U-TANKS/-/TNK/TANK1	record keeping/maintenance procedures	95
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FACILITY	monitoring of process or control device	40
	parameters as surrogate	
FACILITY	monitoring of process or control device	41
	parameters as surrogate	
FACILITY	monitoring of process or control device	42
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D2 GTT TWY	parameters as surrogate	
FACILITY	monitoring of process or control device	44
	parameters as surrogate	
FACILITY	monitoring of process or control device	45



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	parameters as surrogate	
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	parameters as surrogate	
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U-SCRUB	record keeping/maintenance procedures	107
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U-GASBR/-/GAS	record keeping/maintenance procedures	66
U-TOWER/-/TOW	record keeping/maintenance procedures	96
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	parameters as surrogate	
U-TANKS	record keeping/maintenance procedures	88
FACILITY	record keeping/maintenance procedures	27

Basis for Monitoring

The Orange Recycling and Ethanol Production Facility will be built in the city of Middletown in Orange County, New York. The Facility will convert municipal solid waste (MSW) and sewage sludge to fuel grade ethanol and carbon dioxide (CO2) through a concentrated acid hydrolysis- fermentation process. The primary Standard Industrial Classification (SIC) for this facility is refuse systems (4953). The plant will accept up to 230,000 wet tons/year of MSW, 32,000 tons/year of waste paper, up to 364 tons/year of septage and leachate and would produce approximately 7.1 million gallons/year of ethanol. This facility is required to obtain and comply with a separate Solid Waste Management Permit issued in accordance with 6NYCRR Part 360. Carbon Dioxide (CO2), which is a by-product of fermentation and sludge acidification, will be collected, cleaned and sold as a product. Lignin, a by-product of the cellulose to sugar conversion, and processed biosolids are gasified on-site to produce process steam. Recyclables from the MSW are recovered and sent to appropriate recyclers for additional processing. Digester gas will be used to generate steam.

The overall process consists of a series of simple unit operations. The processing steps are:

- 1) Materials Recovery Facility sorts the incoming MSW.
- 2) Sewage Sludge Receiving and Storage.
- 3) Sewage Sludge Acidification produces CO2, drops out metals, and kills pathogens.
- 4) Acid Hydrolysis converts the feed streams to sugar.



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- 5) Filtration separates the acid/sugar stream from residual solids.
- 6) Acid Evaporators concentrates the recovered acid and recycles it back into the hydrolysis process.
- 7) Neutralization and Metals Removal neutralizes the sugar prior to fermentation and removes dissolved metals such as chromium and aluminum.
- 8) Sugar Concentration concentrates the sugar stream prior to fermentation.
- 9) Alcohol Plant converts the sugar to ethanol.
- 10) Wastewater Treatment treats the wastewater prior to sending it to the Middletown Wastewater Treatment Plant.
- 11) Carbon Dioxide Plant cleans and compresses the CO2 produced.
- 12) Gasifier gasifies the lignin and residual solids to produce process steam.
- 13) Package Boiler combusts natural gas to produce the balance of process steam needed by the facility.

The facility air permit contains four specific emission units including U-GASBR, U-SCRUB, U-TANKS, and U-TOWER.

U-GASBR is comprised of a 245 MMBTU/hr fluidized bed gasifier and a 124 MMBTU/hr natural gas fired package boiler. The fluidized bed gasifier is a general process subject to the air contaminant restrictions defined in 6NYCRR part 212 when combusting lignin, processed biosolids, and digester gas. In addition, the gasifier design includes auxiliary natural gas fired burners used during startup with a maximum rated capacity 95 mmBTU/hr. Therefore, the gasifier is also subject to 40 CFR 60-Dc when burning natural gas. The package boiler is subject to 40 CFR 60 Db, Standards of performance for Industrial-Commercial-Institutional Steam Generating Units when burning fossil fuels.

U-SCRUB consists of the sludge systems scrubber and the process building scrubber. Both scrubber systems are subject to air contaminant restrictions including particulates and air toxics under 6NYCRR Part 212, General Process Emission Sources.

U-TANKS is comprised of a 100,000 gallon ethanol storage tank, a 10,000 gallon ethanol day storage tank and a 10,000 gallon off-spec ethanol storage tank. The three ethanol storage tanks are subject to the requirements of 6NYCRR Part 229, Petroleum and Volatile Organic Liquid Storage Vessels. The 100,000 gallon ethanol storage tank is also subject to the requirements of 40 CFR Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels.

U-TOWER consists of eight identical cooling towers with a total water throughput of 18,310 gallons per minute. The eight cooling towers are considered general processes which are subject to the air contaminant restrictions including particulate and air toxics under 6 NYCRR Part 212.

Additional on-site storage tanks supporting facility operations include a 38,100 gallon sulfuric acid storage tank, a 22,000 gallon ammonia storage tank, a 285 and 2,000 gallon No. 2 fuel oil storage tank and a 7,500 gallon gasoline storage tank.

The facility's emissions for sulfur dioxide exceeds the major source pollutant threshold listed in 6NYCRR Subpart 201-6. Therefore, the facility is subject to the provisions of Title V.

The facility is capping the annual nitrogen oxides (NOx) and sulfur dioxide (SO2) emissions to be below the threshold for 6NYCRR Part 231-2, Nonattainment New Source Review (NSR) and 40 CFR 52,



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Prevention of Significant Deterioration (PSD). Annual NOx emissions will be limited to less than 99.5 tons per year. Annual SO2 emissions will be limited to less than 246 tons per year. The annual SO2 and NOx emissions will be calculated daily using a "Rolling Cumulative Total". The facility will be equipped with two Continuous Emissions Monitoring Systems (CEMSs) to verify facility emission limits for Nitrogen Oxide and Sulfur Dioxide emissions. One CEMS will be installed to monitor exhaust gas from the package boiler for nitrogen oxides and oxygen. The second CEMS will be installed to monitor exhaust gas from the gasifier for nitrogen oxides and sulfur dioxide. In addition, the gasifier outlet will have continuous monitoring devices to measure stack gas flow and moisture. The continuous monitoring devices that are used to demonstrate capping out of NSR and PSD regulations will comply with 40 CFR 75-Continuous Emission Monitoring.

General Requirements

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air emissions.

The facility shall install and maintain continuous emissions monitors (CEMs) for NOx, SO2,O2 and CO and a continuous opacity monitor (COM) for the gasifier. In addition, the facility shall install gas flow meter and moisture analyzer at the gasifier outlet. The facility shall also install and maintain a CEM for NOx and O2 for the package boiler.

The facility shall conduct initial performance tests for SO2, NOx , PM, PM10, CO, VOCs, lead, opacity, cadmium, HCL, dioxin/flurans, and mercury emissions. All performance tests shall be conducted at the maximum design and operating capacity of the unit(s) being tested and/or other loads specified by NYSDEC and EPA. These performance tests shall also be subsequently conducted at least once per permit term and as required by the NYSDEC and EPA.

Gasifier

The maximum heat input design value of the gasifier shall not exceed 245 MMBTU/hr.

The gasifier shall only combust natural gas, lignin residue (derived from municipal solid waste), processed biosolids (derived from sewage sludge), and digester gas.

SO2 emissions from the gasifier and gas-fired boiler shall not exceed the short term limit of 61.2 lbs/hr based on a 30-day rolling average on a daily basis. The gasifier shall also meet a minimum of 97% SO2 removal efficiency. Facility-wide SOx emissions shall not exceed 246 tons/year.

The gasifier shall utilize a selective non-catalytic reduction (SNCR) system to control NOx emissions. NOx emissions from the gasifier shall not exceed the short term limit of 22.2 lbs/hr based on a 30-day rolling average on a daily basis. Facility wide NOx emissions shall not exceed 99.5 tons/year.

Carbon monoxide emissions from the gasifier shall not exceed 100 ppm based on a 30-day rolling average on a daily basis.



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The gasifier shall utilize a dry lime injection into the gasifier unit to control SO2 and acid gases. Lime will hydrate when mixed with the wet lignin fuel and neutralize and buffer the pH of the residual acid in the fuel. The addition of lime will be based on the quantity of lignin supplied to the unit. Operating parameters such as, but not limited to, auger speed and temperature determined during the performance tests shall become part of this permit.

The gasifier shall also utilize a spray dryer absorber system to control SO2 and acid gases. The spray dryer absorber will receive hydrated lime slurry from metering skid upon a feedback signal from the SO2 analyzer. A part per million (ppm) concentration setpoint in the data control system (DCS) will control the metering pump to provide slaked lime slurry in a volume sufficient to maintain SO2 concentrations below the setpoint at the stack outlet. Operating parameters such as, but not limited to, pressure drop and temperature determined during the performance tests shall become part of this permit.

The gasifier shall utilize a baghouse to control particulates from the flue gas stream and provide the final polish of acid gas and ammonia capture. The PM10 emission rate shall not exceed 0.01 grains/dscf. Pressure drop across the fabric filter will monitor the condition of the baghouse and used to indicate the necessity of a pulse cycle to clean rows of bags. Temperatures at the inlet and outlet to the baghouse will be monitored to determine the amount of moisture in the baghouse, which relates to the amount of lime slurry provided to the spray dryer. The temperatures will be used to indicate the amount of ammonia slip and excess HCl concentrations in the exhaust gas. The optimum pressure drop and temperature ranges for the baghouse shall be determined during the performance test and shall be part of this permit. The facility shall ensure that this optimum pressure drop and temperature ranges are maintained at all times and recorded on an hourly basis during the operation of the gasifier.

Cadmium emissions from the gasifier shall not exceed 0.02 mg/dscm, corrected to 7% oxygen.

Dioxin/Furan emissions from the gasifier shall not exceed 13ng/dscm, corrected to 7% oxygen.

Lead emissions from the gasifier shall not exceed 0.20mg/dscm, total mass, corrected to 7% oxygen.

Hydrogen chloride (HCl) percent reduction shall be a minimum of 95%.

Mercury emissions shall not exceed 0.080mg/dscm, corrected to 7% oxygen.

Gas-fired Boiler

The maximum heat input design value of the package boiler shall not exceed 124 MMBTU/hr.

The package boiler shall burn natural gas.

The package boiler shall be equipped with low NOx burners. NOx emissions from the package boiler alone shall not exceed 0.10 lbs/MMBTU when firing natural gas.

The package boiler shall meet the requirements of 40CFR Part 60, General Provisions, the Appendices,



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as well as Subpart Db.

As required by Subpart Db 60.49b(d), the facility shall calculate the annual capacity factor of the package boiler.

Continuous Emission Monitoring (CEM) / Continuous Opacity Monitoring

Prior to the date of startup and thereafter, the facility shall install, calibrate, maintain, and operate the following continuous monitoring systems in the gasifier and the boiler system.

The facility shall install continuous emission monitoring (CEM) systems to measure stack gas NOx (gasifier and boiler) and SO2 concentrations (gasifier only), CO concentration (gasifier only) and a continuous opacity monitoring system (gasifier only). The systems shall meet EPA monitoring performance specifications (40CFR Part 60.13 and 40CFR Part 60, Appendix B, Performance Specifications 1,2 and 3 and Appendix F).

The continuous monitoring system to measure stack gas volumetric flow rates shall meet EPA monitoring performance specifications, 40CFR Part 52. Appendix E.

CEM systems to measure CO, at a minimum, shall meet EPA monitoring performance specifications of 40CFR Part 60, Appendix B, Performance Specifications 3 and 4, and 40CFR Part 60, Appendix F.

Not less than 60 days prior to the date of startup of the boiler(s), the facility shall submit to the NYSDEC and EPA a Quality Assurance Project Plan for the certification of the CEM systems. CEM performance testing may not begin until the Quality Assurance Project Plan has been approved by NYSDEC and EPA. Upon receipt of the Quality Assurance Project Plan, the NYSDEC and EPA will provide comments to the plan within 30 days.

The facility shall notify NYSDEC and EPA 15 days in advance of the date upon which demonstration of the CEM system performance will commence (40CFR Part 60.13(c)). The CEM system performance date shall be no later than the date of the initial performance testing.

The facility shall submit a written report to NYSDEC and EPA of the results of all monitor performance specification tests conducted on the monitoring system(s) within 45 days of the completion of the tests. The continuous emission monitors must meet all the requirements of the applicable performance specification test in order for the monitors to be certified.

The facility shall submit a written report to NYSDEC and EPA identifying all non-compliance periods for every 6-month period. All semi-annual reports shall be postmarked by the 30th day following the end of each 6 month period and shall include the information specified below:

The magnitude of the non-compliance periods computed in accordance with 40CFR Part 60.13(h), any conversion factors(s) used, and the date and time of commencement and completion of each time period of non-compliance emissions.



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Specific identification of each period of non-compliance emissions that occurs during startups, shutdowns, and malfunctions for the gasifier and package boiler. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported.

The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

When no non-compliance periods have occurred or the CEM system has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

The facility shall summarize the results of quarterly monitor performance audits, as required in 40CFR Part 60, Appendix F.

The facility shall maintain a file of all measurements, including CEM system performance evaluations; all CEM systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurement, maintenance, reports and records.

At all times, including periods of startup, shutdown, and malfunction, the facility shall, to the extent practicable, maintain and operate the gasifier/package boiler system including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions . Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to EPA and/or NYSDEC which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the facility.

Performance Test Requirements

Within 60 days after achieving the maximum production rate of the gasifier/boiler, but no later than 180 days after initial startup as defined in 40CFR Part 60.2, and at such other times as specified by the NYSDEC or EPA, the facility shall conduct performance tests for SO2, NOx, PM, PM10, CO, VOCs, lead, opacity, cadmium. HCl, dioxin/furans, and mercury emissions. All performance tests shall be conducted at the maximum design operating capacity of the unit(s) being tested and on the loads specified by NYSDEC and EPA. In addition to the initial performance tests specified above, all of the above performance tests shall be subsequently conducted at least once per permit term.

At least 60 days prior to actual testing, the facility shall submit to the NYSDEC and EPA a Quality Assurance Project Plan detailing methods and procedures to be used during the performance stack testing. A Quality Assurance Project Plan that does not have NYSDEC and EPA approval may be grounds to invalidate any test and require a re-test.

The facility shall use the following test methods, or a test method which would be applicable at the time of the test and detailed in a test protocol approved by NYSDEC and EPA.



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Performance tests to determine the stack gas velocity, sample area, volumetric flowrate, molecular composition, excess air of flue gases, and moisture content of flue gas shall be conducted using 40CFR Part 60, Appendix A, Methods 1,2 3, and 4.

Performance tests for the emissions of NOx shall be conducted using 40CFR Part 60, Appendix A, Method 7E.

Performance tests for the emissions of SO2 shall be conducted using 40CFR Part 60, Appendix A, Method 6.

Performance tests for the emissions and control efficiency of PM shall be conducted using 40CFR Part 60, Appendix A, Method 5.

Performance tests for the emissions of PM10 shall be conducted using 40CFR Part 51, Appendix M, Method 201 (exhaust gas recycle procedure) or Method 201A (constant flow rate procedure) and Method 202.

Performance tests for the emissions of CO shall be conducted using 40CFR Part 60, Appendix A, Method 10.

Performance tests for the emissions of volatile organic compounds shall be conducted using 40CFR Part 60, Appendix A, Method 25A.

Performance tests for the emissions of cadmium shall be conducted using 40CFR Part 60, Appendix A, Method 29.

Performance tests for the emissions of mercury shall be conducted using 40CFR Part 60, Appendix A, Method 29.

Performance tests for the emissions of lead shall be conducted using 40CFR Part 60, Appendix A, Method 29.

Performance tests for the emissions of HCl shall be conducted using 40CFR Part 60, Appendix A, Method 26 or Method 26A, as applicable.

Performance tests for the visual determination of the opacity of emissions from the stack shall be conducted using 40CFR Part 60, Appendix A, Method 9 and the procedures stated in 40CFR Part 60.11.

Additional performance tests may be required at the discretion of the NYSDEC or EPA for any or all of the above pollutants.

For performance test purposes, sampling ports, platforms and access shall be provided by the facility on the combustion exhaust system in accordance with 40CFR Part 60.8(e).

Results of emission testing must be submitted to NYSDEC and EPA within 60 days after completion of



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performance tests.

Operation during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

Storage Tanks

The facility shall have the following storage tanks:

38,100 gallon - H2SO4 storage tank
7,500 gallon - gasoline storage tank
100,000 gallon - ethanol storage tank
10,000 gallon - ethanol day storage tank
10,000 gallon - off-spec ethanol storage tank
285 gallon - No. 2 fuel oil - fuel tank
2,000 gallon - No. 2 fuel oil - storage tank
22,000 gallon - ammonia