

PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY

33 North Stone Avenue, Suite 700 • Tucson, AZ 85701 • Phone: (520) 243-7400

AIR QUALITY OPERATING PERMIT

(As required by Title 17.12, Article II, Pima County Code)

ISSUED TO

**UNIVERSITY OF ARIZONA
(Bio5 INSTITUTE - ORO VALLEY)**

**1580 E HANLEY BOULEVARD
ORO VALLEY, ARIZONA 85737**

This air quality operating permit does not relieve applicant of responsibility for meeting all air pollution regulations

THIS PERMIT ISSUED SUBJECT TO THE SPECIFIC CONDITIONS AND ATTACHMENTS IDENTIFIED IN THIS PERMIT.

PERMIT NUMBER **6130**

PERMIT CLASS **III**

ISSUED: **MAY 09, 2012**

EXPIRES: **MAY 08, 2017**



SIGNATURE

Mukonde Chama, P.E., Air Permits Supervisor, PDEQ

TITLE

TABLE OF CONTENTS

Permit Summary	3
Emission Sources	4
Category A: New and Existing Stationary Source Performance Standards for Stationary Rotating Machinery	
I. Emission Limitations and Standards	4
II. Monitoring Requirements	4
III. Recordkeeping Requirements	4
IV. Reporting Requirements	4
V. Testing Requirements	5
VI. Facility Changes	5
Category B: New and Existing Stationary Source Performance Standards for Fossil-Fuel Fired Industrial and Commercial Equipment	
I. Emission Limitations and Standards	6
II. Monitoring Requirements	6
III. Recordkeeping Requirements	6
IV. Reporting Requirements	6
V. Testing Requirements	7
VI. Facility Changes	7
Additional Permit Requirements	8
I. Compliance with Permit Conditions	8
II. Permit Revision, Reopening, Revocation and Reissuance, or Termination for Cause	8
III. Duty to Provide Information	8
IV. Severability Clause	8
Attachment 1: Applicable Regulations	9
Attachment 2: Equipment List	10

PERMIT SUMMARY

The University of Arizona (UA) Bio5 Institute-Oro Valley facility is located at 1580 E Hanley Blvd, Oro Valley, Arizona. The Bio5 Institute - Oro Valley performs medicinal chemistry, pharmacy and cancer therapy research. The Bio5 Institute-Oro Valley laboratory and office space will house three major components: the Arizona Drug Discovery Center, an incubator space that will allow common initiatives between private enterprise and University researchers, and a cancer prevention research group.

The facility operates under Standard Industrial Classification code 8731 (Commercial, Physical and Biological Research) and North American Industry Classification System (NAICS) code 851711 (Research and Development in Biotechnology).

The Bio5 Institute - Oro Valley facility is subject to air permitting due to emissions of regulated air pollutants generated primarily from fuel-fired equipment. The emission sources at the facility include:

- one natural gas emergency generator and
- two natural gas boilers

The boiler is used to supply steam and heating hot water. The generator is used for backup electrical power in the case of an emergency or power outage.

This operating permit is the facility's first 5-year permit. The facility is a true minor and area source for all regulated pollutants.

The potential to emit without controls from all Bio5 Institute - Oro Valley facility operations is given in the Table below. These numbers are for reference purposes only and are not intended for direct enforcement unless specified in the conditions of this permit as an enforceable emissions limitation by rule or as a voluntary accepted condition(s) by the Permittee.

The potential combustion emissions from the natural gas fired generator were calculated using Manufacturers Emission Data (NO_x and CO only) and EPA AP-42 emission factors for all other regulated pollutants. Potential combustion emissions from the two natural gas fired boilers were calculated using EPA AP-42 emission factors for all regulated pollutants. Additionally, the generator is subject to a general operational hour limitation to avoid major source status. The operational hourly limitation is thus the maximum capacity of the generator to emit pollutants. The operational capacities of the boilers are unrestricted.

Pollutant	Potential Emissions (Tons per Year)
Nitrogen Oxides (NO _x)	6.33
Carbon Monoxide (CO)	2.98
Volatile Organic Compounds (VOC)	0.18
Particulate Matter (as PM ₁₀)	0.25
Sulfur Oxides (SO _x)	0.02
Hazardous Air Pollutants (HAPs – total)	0.06

CATEGORY A

New and Existing Stationary Source Performance Standards for Stationary Rotating Machinery

(Locally Enforceable Conditions, unless otherwise stated)

Unless otherwise stated, the provisions of this Category apply to the equipment identified in, Table 1, Attachment 2 of this permit.

I. Emission Limitations and Standards

A. Opacity Limitation

The Permittee shall not cause, allow, or permit smoke to be emitted into the atmosphere from any generator for any period greater than ten consecutive seconds that exceeds 40 percent opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[PCC 17.16.340.E]

B. Fuel Limitation

The Permittee shall burn only natural gas fuel for the generator in Table 1 of Attachment 2 of this Permit.

[PCC 17.12.190.B]

[Material Permit Condition]

C. Operational Limitation

[PCC 17.12.190.B]

[Material Permit Condition]

The Permittee shall not operate the generator for more than the number of hours per year allowed in Attachment 2 of this permit. The total hours per year of operation shall be calculated as a rolling twelve (12) month total.

II. Monitoring Requirements

[PCC 17.12.185.A.3]

A. Opacity

A demonstration to show compliance with the emission limitation for opacity in I.A of this Category shall not be required since the percent of opacity of visible emissions whilst combusting natural gas is inherently low. The Permittee shall operate and maintain the generator at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines.

B. Fuel Consumption

The Permittee shall be considered in compliance with the fuel limitation in I.B of this Category by actual inspection of the equipment showing that the specified fuel is the only fuel supply plumbed to the equipment for firing.

III. Recordkeeping Requirement

[PCC 17.12.185.A.4]

- A. The Permittee shall maintain records of any emissions in excess of the limits established by this permit. All records shall be maintained for five years.
- B. For the identified generator having an operational limitation in Attachment 2 of this permit, the Permittee shall record the monthly operating hours at the close of each month and recalculate a combined rolling twelve (12) month total of the generator. Recording and recalculation of operating hours shall be completed within 5 business days of the close of each month. All records shall be maintained for five years.

IV. Reporting Requirements

[PCC 17.12.185.A.5]

The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit according to the additional permit conditions of this permit. [PCC 17.12.040]

V. Testing Requirements

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed. [PCC 17.12.050 & PCC 17.20.010]

A. Opacity

When requested by the Control Officer, the Permittee shall perform EPA Method 9 visible emissions observations on the facility operations to demonstrate compliance with the opacity standard in I.A of this Category. [PCC 17.12.040.B & PCC 17.20.010]

B. Fuel Limitation

When required the Permittee need only demonstrate that pipeline quality natural gas was fired exclusively in the generator. [PCC 17.12.185.A.3 & PCC 17.20.010]

C. Alternative Test Method

The Permittee may submit an alternate and equivalent test method(s) that is listed in 40 CFR Subpart 60, Appendix A, to the Control Officer in a test plan, for approval by the Control Officer. [PCC 17.12.045.D]

VI. Facility Changes

Should the Permittee desire to change the facility or operations in any way (including, but not limited to, addition of new equipment, modification of current equipment or usage of fuels not specified within this Permit,) the Permittee will first submit the proper notification and follow the required permit revision procedure pursuant PCC 17.12.240, PCC 17.12.255, and PCC 17.12.260.

CATEGORY B

**New and Existing Stationary Source Performance Standards for
Fossil-Fuel Fired Industrial and Commercial Equipment**

(Locally Enforceable Conditions, unless otherwise stated)

Unless otherwise stated, the provisions of this Category apply to the equipment identified in, Table 2, Attachment 2 of this permit.

I. Emission Limitations and Standards

A. Opacity Limitation

The Permittee shall not cause, allow or permit the effluent from any boiler to have an average optical density equal to or greater than 20 percent. [PCC 17.16.040]

B. Fuel Limitation

The Permittee shall burn natural gas fuel for the boilers in Table 2 of Attachment 2 of this Permit. [PCC 17.12.190.B]
[Material Permit Condition]

II. Monitoring Requirements

[PCC 17.12.185.A.3]

A. Opacity

A demonstration to show compliance with the emission limitation for opacity in I.A of this Category shall not be required since the percent of opacity of visible emissions whilst combusting natural gas is inherently low. The Permittee shall operate and maintain the boilers at all times - including periods of startup, shutdown, and malfunction - in a manner consistent with good air pollution control practices and consistent with manufacturer's guidelines.

B. Fuel

The Permittee shall be considered in compliance with the fuel limitation in I.B of this Category by actual inspection of the equipment showing that the specified fuel is the only fuel supply plumbed to the equipment for firing.

III. Recordkeeping Requirement

[PCC 17.12.185.A.4]

The Permittee shall maintain records of any emissions in excess of the limits established by this permit. All records shall be maintained for five years.

IV. Reporting Requirements

[PCC 17.12.185.A.5]

The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit according to the additional permit conditions of this permit. [PCC 17.12.040]

V. Testing Requirements

For purposes of demonstrating compliance, these test methods shall be used, provided that for the purpose of establishing whether or not the facility has violated or is in violation of any provision of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable federal requirements if the appropriate performance or compliance procedures or methods had been performed.

[PCC 17.12.050 & PCC 17.20.010]

A. Opacity

When requested, the Permittee shall perform EPA Method 9 visible emissions observations on the facility operations to demonstrate compliance with the opacity standard in I.A of this Category.

[PCC 17.12.040.B & PCC 17.20.010]

B. Fuel Limitation

When requested, the Permittee need only demonstrate that pipeline quality natural gas was fired exclusively in the boilers.

[PCC 17.12.185.A.3 & PCC 17.20.010]

C. Alternative Test Method

The Permittee may submit an alternate and equivalent test method(s) that is listed in 40 CFR Subpart 60, Appendix A, to the Control Officer in a test plan, for approval by the Control Officer.

[PCC 17.12.045.D]

VI. Facility Changes

Should the Permittee desire to change the facility or operations in any way (including, but not limited to, addition of new equipment, modification of current equipment or usage of fuels not specified within this Permit,) the Permittee will first submit the proper notification and follow the required permit revision procedure pursuant PCC 17.12.240, PCC 17.12.255, and PCC 17.12.260.

ADDITIONAL PERMIT REQUIREMENTS

I. COMPLIANCE WITH PERMIT CONDITIONS

[PCC 17.12.185.A.7.a & b]

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. The report shall be in 2 parts as specified below: [PCC 17.12.185.A.5 & PCC 17.12.040]
1. Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emission that includes all available information pursuant to PCC 17.12.040.B. To report excess emissions call **520-243-7400** or fax to **520-838-7432**.
 2. Detailed written notification by submission of an excess emissions report within 72 hours of the notification in I.B.1 above. Send to **PDEQ 33 N. Stone Ave, Ste 700, Tucson, Arizona 85701**.
- C. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. The permit does not convey any property rights of any sort, or any exclusive privilege to the permit holder.
- E. The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.520. [PCC 17.12.185.A.9 & PCC 17.12.520]

II. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE

[PCC 17.12.185.A.7.c]

The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to PCC 17.12.270. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination; or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

III. DUTY TO PROVIDE INFORMATION

[PCC 17.12.165.G & PCC 17.12.185.A.7.e]

- A. The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer 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. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records to the Control Officer along with a claim of confidentiality.
- B. If the Permittee has failed to submit any relevant facts or if the Permittee has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

IV. SEVERABILITY CLAUSE

[PCC 17.12.185.A.6]

The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected thereby.

ATTACHMENT 1

Applicable Regulations

Requirements Specifically Identified as Applicable:

Code of Federal Regulations Title 40:

40 CFR Part 63 Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines

Applicable to the natural gas fired emergency generator. Bio5 Institute is an affected facility under 40 CFR Part 63 Subpart ZZZZ, but the requirements are that the facility comply with 40 CFR Part 60 Subpart JJJJ.

40 CFR Part 60 Subpart JJJJ: New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines

The spark ignition internal combustion engine is **not** subject to 40 CFR Part 60 Subpart JJJJ requirements since it was built prior to any of the applicability dates of in 40 CFR 60.4230.

Pima County Code (PCC) Title 17:

This is not meant to be an exhaustive list of every regulation to which the Permittee is subject, but represents those cited in the permit. It is the responsibility of the Permittee to comply with all applicable regulations.

- PCC 17.16.040 Visible Emission Standards – Standards and Applicability (includes NESHAP).
- PCC 17.16.165 Standards of Performance for Fossil Fuel Fired Industrial and Commercial Equipment.
- PCC 17.16.340 Standards of Performance for Stationary Rotating Machinery.
- PCC 17.20.010 Emission Source Testing and Monitoring.

ATTACHMENT 2

EQUIPMENT LIST

TABLE 1
Stationary Rotating Machinery (Generator not subject to NSPS or NESHAP)

Type of Equipment	Manufacture	Model	Serial Number/ ID number	Maximum Rated Capacity	Allowable Hours of Operation (as a rolling 12 month total)	Model year/ Applicability Date ¹	Allowable Fuel(s)
Emergency Generator	ONAN	215GFBB	EM07C204695	336 HP	500	4/2007	Natural Gas

¹The most recent date of order, manufacture, reconstruction, or modification.

TABLE 2
Fossil-Fuel Fired Industrial and Commercial Equipment (Boilers, not subject to NSPS, Category B)

Type of Equipment	Manufacturer	Model	Serial Number	Maximum Rated Capacity	Primary Fuel	Date of Manufacture	Date of Installation
Boiler	Cleaver-Brooks	M4W-5000 Series 700MB	4G029389	5,000,000 BTU/hr	Natural Gas	1995	Unknown
Boiler	Bryant	HECL270-W-FDG	91015	2,700,000 BTU/hr	Natural Gas	2003	Unknown