



December 1, 2023

Kimberly Kaal, Environmental Manager
Shell Chemical Appalachia LLC
300 Frankfort Road
Monaca, PA 15061

Re: GP1-04-00740A
Shell Polymers Monaca Site
Potter and Center Townships
Beaver County

Dear Kimberly Kaal,

The Department has evaluated your application to use the General Plan Approval and General Operating Permit for Small Gas Fired Combustion Units to allow the installation and subsequent temporary operation after submitting appropriate notification, of the following equipment:

- Three (3) 99.94 MMBtu/hr Indeck OT75 (or equivalent) gas-fired boilers controlled by flue gas recirculation and selective catalytic reduction

The enclosed document shall serve as written approval pursuant to 25 PA Code § 127.621. A copy of the Conditions of the General Permit is enclosed for your reference.

You should read the entire document carefully; you are obligated to comply with all terms and conditions applicable to your facility.

Please also note that any authorization by the Department to construct and/or operate under this General Permit may be suspended or revoked if the Department determines that, at any time, construction and/or operation is not in compliance with the terms and conditions of this General Permit.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board) pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

Please feel free to contact me at 412.442.4028 or asandy@pa.gov if you have any questions or require additional information.

Sincerely,

Alexander Sandy /AS

Alexander Sandy
Air Quality Engineering Specialist
Air Quality Program

Enclosure

cc: File 04-740
Operations (K. Goddard and S. Beaudway)
OnBase

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST REGION – FIELD OPERATIONS
AIR QUALITY
400 WATERFRONT DRIVE
PITTSBURGH, PENNSYLVANIA 15222-4745**

GENERAL PLAN APPROVAL and/or GENERAL OPERATING PERMIT

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the Rules and Regulations of the Department of Environmental Protection, the Department hereby approves the use of this permit for the operation of the air contamination sources(s) described below.

Authorization:	GP1-04-00740A	Sources:	(See Attached Letter)
Owner:	Shell Chemical Appalachia LLC Shell Polymers Monaca Site	Air:	(See Attached Letter)
Address:	300 Frankfort Road Monaca, PA 15061	Cleaning: Devices:	
Attention:	Kimberly Kaal, Environmental Manager	Location:	Potter and Center Townships
		County:	Beaver

This authorization is subject to the following conditions:

1. That the source and any associated air cleaning devices are to be:
 - a. Operated in such a manner as not to cause air pollution, as defined in 25 Pa Code § 121.1
 - b. Operated and maintained in a manner consistent with good operating and maintenance practices; and
 - c. Operated and maintained in accordance with the manufacturer's specifications, the specifications in the Application for Authorization to Use GP-1, and the applicable terms and conditions of the General Plan Approval and General Operating Permit (BAQ-GPA/GP-1).
2. This authorization is valid only for the source(s), air cleaning device(s), location, and owner named above.
3. See attached.

Failure to comply with the conditions placed on this authorization is a violation of Section 127.622. Violation of this or any other provision of Article III of the Rules and Regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Authorized: 12/1/2023

for Kevin Halloran
Mark R. Gorog, P.E.
Regional Manager
Air Quality

AUTHORIZATION TERM: 12/1/2023 – 6/1/2025



GENERAL PLAN APPROVAL AND/OR GENERAL OPERATING PERMIT BAQ-GPA/GP-1

GAS AND NO. 2 OIL FIRED SMALL COMBUSTION UNITS

SECTION A. GENERAL REQUIREMENTS

1. Statutory/Regulatory Authority and General Description

In accordance with Section 6.1(f) of the Pennsylvania Air Pollution Control Act (APCA), 35 P.S. § 4006.1(f) and 25 Pa. Code Chapter 127, Subchapter H, the Department of Environmental Protection (Department or DEP) hereby issues this General Plan Approval and/or General Operating Permit (General Permit or GP-1) for new or modified gas and No. 2 oil fired small combustion units constructed, modified, or operated in this Commonwealth.

2. Definitions

Words and terms that are not otherwise defined in this General Permit shall have the meanings set forth in Section 3 of the APCA (35 P.S. § 4003) and Title 25, Article III including 25 Pa. Code § 121.1 unless the context indicates otherwise. The meanings set forth in applicable definitions codified in the Code of Federal Regulations (CFR), including 40 CFR Part 60, Subpart Dc or 40 CFR Part 63, Subparts DDDDD and JJJJJJ shall also apply to this General Permit.

Combustion unit — A stationary equipment used to burn fuel primarily for the purpose of producing power or heat by indirect heat transfer.

Gas-fired Boiler — Includes any boiler that burns gaseous fuels not combined with any solid fuels and burns fuel oil only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on fuel oil. Periodic testing, maintenance, or operator training on fuel oil shall not exceed a combined total of 48 hours during any calendar year.

Natural Gaseous Fuel —

- (a) Natural gas, a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
- (b) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 63.14); or
- (c) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions (i.e., a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals). Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
- (d) Propane or propane-derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8 .

Small combustion unit — A combustion unit with rated capacity equal to or less than 100 million Btu per hour of heat input fueled by gaseous fuel, or by No. 2 or lighter (viscosity less than or equal to 5.82 cSt) commercial fuel oils

Source — An air contamination source.

3. Applicability/Scope

- (a) This General Permit authorizes the construction, modification, and/or operation of gas and/or fuel oil fired small combustion units at a facility. The applicability of this General Permit is limited to combustion units with rated capacities equal to or less than 100 million Btu per hour of heat input fueled by gaseous fuel, or by No. 2 or lighter (viscosity less than or equal to 5.82 cSt) commercial fuel oils. A facility owner or operator may use this General Permit as a plan approval to construct qualifying small combustion units. Appropriate provisions of this General Permit will then be incorporated into either a Title V or State-only operating permit if the facility contains regulated sources in addition to the small combustion units covered by this General Permit. If a non-Title V facility consists of only small combustion units qualifying for coverage under this General Permit, the facility may continue to operate so long as authorization to operate is renewed every five years in accordance with Condition 5(d) of this section.
- (b) An Application for Authorization to Use GP-1 may be submitted for the operation of an eligible source if the source is exempted from plan approval requirements under 25 Pa. Code § 127.14.
- (c) If a small combustion unit located at the facility cannot be regulated under this General Permit, a plan approval and/or an operating permit issued in accordance with 25 Pa. Code Chapter 127, Subchapter B, Subchapter F, and/or Subchapter G will be required based on the facility's status as a Title V facility.

4. Prohibited Use of GP-1

- (a) GP-1 shall not be used where waste materials or recycled oils have been added to commercial fuel oils.
- (b) Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D, Subchapter E, or Subchapter G may not operate under this General Permit. Title V facilities may still use this General Permit as a general plan approval when the major new source review and prevention of significant deterioration requirements are not applicable. However, a non-Title V facility may not use this General Permit as a general plan approval if it would result in the facility becoming a Title V facility.
- (c) This General Permit is not intended for use as an operating permit by a Title V facility as defined in 25 Pa. Code § 121.1. A Title V facility includes sources that have actual emissions or a potential to emit (PTE) equal to or greater than the maximum permitted emission levels shown in Condition 9(a) below. If a facility's actual emissions and PTE will be below the maximum permitted emission levels in Condition 9(a), the small combustion units are eligible to operate under this General Permit and are exempted from the permit requirements of 25 Pa. Code § 127.402 unless the facility includes regulated sources in addition to the small combustion units.
- (d) Circumvention.
 - (i) The owner or operator of a facility may not circumvent the new source review requirements of 25 Pa. Code Chapter 127, Subchapter E by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying, or engaging in incremental construction over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.
 - (ii) No person may permit the use of a device, stack height that exceeds good engineering practice, dispersion technique, or other technique that without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants that would otherwise be in violation of this General Permit, the APCA, or the regulations promulgated thereunder, except for those that are used for the control of malodors with the prior written approval of the Department.

5. Authorization to Use GP-1

- (a) *Application for Authorization to Use GP-1.* Pursuant to 25 Pa. Code § 127.621, any person proposing to construct, operate, or modify a small combustion unit shall submit an Application for Authorization to Use GP-1 to the Air Program Manager of the appropriate DEP Regional Office responsible for authorizing the use of general permits in the county in which the facility will be located. This application shall be submitted to DEP either electronically, by hand delivery, courier, or sent to DEP by certified mail, return receipt requested, in accordance with 25 Pa. Code § 127.621(b).

- (b) *Terms of Authorization to Use GP-1.* This General Permit authorizes the construction and/or operation of the specific sources at the specific facility as described in the application for a term of five years from the date of authorization. The authorization to construct a source or facility will expire 18 months from the date of the authorization if the owner or operator fails to commence construction or if there is a lapse in construction of 18 months. The Department may extend the 18-month period upon an owner or operator providing satisfactory justification for an extension up to the original date of the five-year term. All requests for extension shall be submitted to the Department at least 30 days prior to the end of the 18-month period and are only valid upon receipt of written approval by the Department. The expiration of the authorization to construct will require a new Application for Authorization to Use GP-1 if an extension is not requested and granted.
- (c) *General Plan Approval Temporary Operation.* For a facility using this General Permit as a general plan approval, temporary operation of the small combustion unit(s) is authorized to facilitate the shakedown of the sources and air cleaning devices, to permit operation pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) which incorporates the appropriate provisions of this General Permit. This temporary operation period will be valid for 180 days and may be extended for additional limited periods, with the Department's written approval, each not to exceed 180 days.
- (d) *Expiration of and Re-Authorization to Use GP-1.*
- (i) The authorization granted by the Department to construct and/or operate under this General Permit shall terminate on the date of expiration unless a complete Application for Authorization to Use GP-1 is submitted to the Department at least 30 calendar days prior to the expiration date.
- (ii) Upon receipt by the Department of a timely, administratively and technically complete application for re-authorization to operate under this General Permit, the owner or operator may continue to operate the facility subject to final action by the Department provided that the sources and the facility are operated in compliance with the terms and conditions of this General Permit. The Authorization to Use GP-1 shall cease if the owner or operator fails to submit any additional information requested by the Department to process the application by the specified deadline.
- (e) *Transfer of Ownership.* The Authorization to Use GP-1 may be transferred from the owner or operator of a small combustion unit when satisfactory documentation of the change in ownership is provided to the Department and the Department approves the transfer in writing. After a transfer of ownership of the facility, the new owner or operator shall submit an appropriate form or application to the Air Program Manager of the appropriate Regional Office. If the owner or operator is not modifying any existing source or adding a new source, the owner or operator shall submit a Transfer of Ownership form with the appropriate fee. The employer I.D. number (federal EIN) shall be used as a test to determine if a transfer of ownership has occurred. If the owner or operator is modifying any existing source or adding a new source at the facility currently authorized by the General Permit, the owner or operator shall submit an Application for Authorization to Use GP-1 in accordance with Condition 5(a) above.
- (f) *Administrative Amendment.* In the event of a change in the name, address, or telephone number of a person identified in the General Permit Application or a similar minor administrative change at the facility, the Department may authorize an administrative amendment. The owner or operator shall submit a brief description of the change and the date on which the change is to occur in a letter signed by the Responsible Official with the fee specified in Condition 6(e) to the Air Program Manager of the appropriate DEP Regional Office.
- (g) *Modification, Suspension, or Revocation of GP-1 or Authorizations to Use GP-1.*
- (i) The Department may modify, suspend, or revoke and reissue this General Permit if it is determined that GP-1 does not comply with the Clean Air Act, the APCA, or regulations adopted under the acts.
- (ii) This General Permit may be modified, suspended, or revoked if the Department determines that small combustion units cannot be adequately regulated under this General Permit
- (iii) An Authorization to Use GP-1 may be suspended or revoked if the Department determines that, at any time, the owner or operator has failed to construct and/or operate the small combustion unit(s) in

compliance with the terms and conditions of this General Permit, the specifications in the Application for Authorization to Use GP-1, or the information provided in the supplemental material included with the application used to determine if the proposed sources will comply with the GP-1.

- (iv) Upon suspension or revocation of an Authorization to Use GP-1, the owner or operator shall immediately cease construction and/or operation of the subject small combustion unit(s). The owner or operator of the facility shall not restart construction and/or operation prior to the receipt of written approval from the Department.

6. General Permit Fees

Each applicant seeking Authorization to Use GP-1 shall submit the applicable fees required under this Condition to the appropriate DEP Regional Office. The following fee schedules apply to this General Permit:

- (a) General Plan Approval Application Fee for Sources Subject to and Review of NSPS, payable upon submission of the application: \$1,600
- (b) General Operating Permit Application/Renewal Fee, payable upon submission of the application: \$ 750
- (c) Annual Operating Permit Maintenance Fee, on or before December 31st of each year for the next calendar year: \$ 500
- (d) Transfer of Ownership Fee, payable upon submission of the application: \$ 500
- (e) Administrative Amendment Fee, payable upon submission of the letter in Condition 5(e): \$ 500
- (f) The Department may increase the applicable fees for this General Plan Approval/General Operating Permit in accordance with the applicable fee schedules in 25 Pa. Code Chapter 127, Subchapter I, following notice in the *Pennsylvania Bulletin*.

7. Applicable Laws

- (a) It is the duty of the Responsible Official, as defined in 25 Pa. Code § 121.1, to ensure that the facility is in compliance with all applicable Federal, State, and local laws and regulations, including 25 Pa. Code, Subpart C, Article III. Nothing in this General Permit relieves the Responsible Official from this obligation to comply.
- (b) Applicable Federal regulations may include, but are not limited to, the following New Source Performance Standards (NSPS), codified at 40 CFR Part 60 and incorporated by reference in 25 Pa. Code § 122.3, and National Emission Standards for Hazardous Air Pollutants (NESHAP), codified at 40 CFR Part 63 and incorporated by reference in 25 Pa. Code § 127.35:
 - (i) **40 CFR Part 60, Subpart Dc** – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.
 - (ii) **40 CFR Part 63, Subpart DDDDD** – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.
 - (iii) **40 CFR Part 63, Subpart JJJJJJ** – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.

8. Best Available Technology Requirements

New sources are required to control the emission of air pollutants to the maximum extent, consistent with best available technology (BAT) as determined by the Department as of the date of issuance of the plan approval for the new source as required under 25 Pa. Code § 127.1. Condition 1 (BAT Compliance Requirements) of Section B of this General Permit is determined to meet the BAT requirements.

9. Compliance Requirements and Compliance Certification

- (a) The owner or operator cannot use this General Permit as an operating permit in accordance with Condition 4(c) of this section if the emissions from all sources and associated air pollution control equipment located at a facility and other sources determined by the Department to be a single source equal or exceed any of the following on a 12-month rolling sum basis:

(i) Nitrogen Oxides (NO _x) –	100 tons
(ii) Carbon Monoxide (CO) –	100 tons
(iii) Sulfur Oxides (SO _x) –	100 tons
(iv) Particulate Matter with an aerodynamic diameter less than 10 microns (PM ₁₀) –	100 tons
(v) Particulate Matter with an aerodynamic diameter less than 2.5 microns (PM _{2.5}) –	100 tons
(vi) Volatile Organic Compounds (VOC) –	50 tons
(vii) Any individual Hazardous Air Pollutant (HAP) –	10 tons
(viii) Total Hazardous Air Pollutants (HAP) –	25 tons

- (ix) In addition, the emissions from all sources and associated air pollution control equipment located at a facility in Bucks, Chester, Delaware, Montgomery, or Philadelphia Counties shall not equal or exceed any of the following on a 12-month rolling sum basis:

(A) NO _x –	25 tons
(B) VOC –	25 tons

- (b) A facility using this General Permit as an operating permit shall constrain the throughput, hours of operation, and/or emissions from sources at the facility as necessary to not exceed any facility-wide emissions cap required in (a) above.

- (c) All sources and associated air cleaning devices located at a facility shall be:

- (i) Operated in such a manner as not to cause air pollution, as that term is defined in 25 Pa. Code § 121.1;
- (ii) Operated and maintained in a manner consistent with good operating practices and the specifications of any associated plan approval application submitted to the Department for the construction, modification, or reactivation of that source and/or control device, as well as the conditions of the plan approval issued by the Department, in accordance with 25 Pa. Code § 127.25;
- (iii) Operated and maintained in accordance with the fugitive emission requirements of 25 Pa. Code § 123.1 and § 123.2; **and**
- (iv) Operated and maintained in such a manner that malodors are not detectable outside the property of the owner or operator on whose land the facility is being operated in accordance with 25 Pa. Code § 123.31.

- (d) Any small combustion unit operated under this General Permit may not, at any time, result in the emission of:

- (i) Visible emissions in excess of the limitations specified in 25 Pa. Code § 123.41 (relating to limitations) as follows:
 - (A) Equal to or greater than 20% for a period or periods aggregating more than three minutes in any one hour.
 - (B) Equal to or greater than 60% at any time.
- (ii) Particulate matter in excess of the limitations specified in 25 Pa. Code § 123.11 (relating to combustion units)
- (iii) Sulfur compound emissions in excess of the limitations specified in 25 Pa. Code § 123.22 (relating to combustion units).

- (e) This General Permit cannot be used to relax BAT or other emission limitations, or requirements previously established through the air quality permitting process.

- (f) An owner or operator of a facility may apply to the Department for a plan approval for a small combustion unit in lieu of seeking authorization to use the General Permit.
- (g) The owner or operator authorized to use this General Permit shall comply with the specifications in the application and the terms and conditions of this General Permit.
- (h) The owner or operator of the facility using this General Permit as an operating permit shall submit to the Air Program Manager of the appropriate DEP Regional Office an annual certification of compliance with the terms and conditions in the GP-1 for the previous year, including the emission limitations, standards, or work practices. This Compliance Certification Form must be included in the annual report as outlined in Condition 12(c)(vi).

10. Notification Requirements

- (a) *Municipal Notification.* The owner or operator proposing to use this General Permit shall notify the local municipality and county where the air pollution source is to be located that they have applied for an Authorization to Use GP-1. The notification shall clearly describe the proposed sources and/or modifications.
- (b) The owner or operator shall notify the Air Program Manager of the appropriate DEP Regional Office, in writing, at least five business days prior to the commencement of operation of a source of their intent to do so. The owner or operator shall also include the date of completion of construction of the source in the notice. When multiple sources at the facility are subject to different commencement of operation schedules, written notice shall be submitted to DEP prior to the commencement of operation of each source. The owner or operator may submit a single written notice for multiple sources.
- (c) Malfunctions, Emergencies or Incidents of Excess Emissions.
 - (i) The owner or operator of a facility shall report malfunctions, emergencies or incidents of excess emissions to the Department. A malfunction is any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. An emergency is any situation arising from sudden and reasonably unforeseeable events beyond the control of the owner or operator of a facility which requires immediate corrective action to restore normal operation and which causes the emission source to exceed emissions, due to unavoidable increases in emissions attributable to the situation. An emergency shall not include situations caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
 - (ii) When the malfunction, emergency or incident of excess emissions poses an imminent danger to the public health, safety, welfare, or environment, it shall be reported to the Department and the County Emergency Management Agency by telephone within one (1) hour after the discovery of the malfunction, emergency or incident of excess emissions. The owner or operator shall submit a written or emailed report of instances of such malfunctions, emergencies or incidents of excess emissions to the Department within three (3) business days of the telephone report.
 - (iii) The report shall describe the following:
 - (A) Name, permit or authorization number, and location of the facility;
 - (B) Nature and cause of the malfunction, emergency or incident;
 - (C) Date and time when the malfunction, emergency or incident was first observed;
 - (D) Expected duration of excess emissions;
 - (E) Estimated rate of emissions;
 - (F) Corrective actions or preventative measures taken
 - (iv) Any malfunction, emergency or incident of excess emissions that is not subject to the notice requirements of paragraph (c)(ii) of this condition shall be reported to the Department by telephone within 24 hours (or by 4:00 PM of the next business day, whichever is later) of discovery and in writing or by e-mail within five (5) business days of discovery. The report shall contain the same information required by paragraph (c)(iii).

- (v) During an emergency an owner or operator may continue to operate the source at their discretion provided they submit justification for continued operation of a source during the emergency and follow all the notification and reporting requirements in accordance with paragraphs (c)(ii)-(iv), as applicable.
- (vi) Reports regarding malfunctions, emergencies or incidents of excess emissions shall be submitted to the appropriate DEP Regional Office Air Program Manager.
- (vii) Any emissions which resulted from a malfunction or emergency are to be reported in the annual emissions inventory report, if the annual emissions inventory report is required by permit or authorization.

11. Recordkeeping Requirements

- (a) All required records must be maintained on-site for a minimum of five years and made available to DEP upon request. These records may be maintained in electronic format.
- (b) The owner or operator of a facility using the GP-1 as an operating permit shall generate and maintain records that clearly demonstrate to the Department that the facility is not a Title V facility and that the facility is in compliance with facility-wide emission limitations. At a minimum, the records shall be maintained on a monthly basis, and the actual emissions shall be calculated on a 12-month rolling sum. The Department reserves the right to request additional information necessary to determine compliance with the General Permit.
- (c) The owner or operator of the facility shall keep records of all written notifications required under permit conditions.

12. Reporting Requirements

- (a) The owner or operator of a small combustion unit shall submit to the Air Program Manager of the appropriate DEP Regional Office all requests, reports, applications, submittals, and other communications concerning applicable Federal NSPS and NESHAP.
- (b) In accordance with 40 CFR §§ 60.4 and 63.10 copies of all requests, reports, applications, submittals, and other communications concerning applicable Federal NSPS and NESHAP shall also be submitted to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI) accessible at <https://cdx.epa.gov> unless electronic reporting is not available, in which case a copy shall be sent to the address in the instructions.
- (c) The owner or operator of a small combustion unit using this General Permit as an operating permit shall submit an annual report either in electronic format, by hand-delivery, courier, or sent by certified mail, return receipt requested, to the Air Program Manager of the appropriate DEP Regional Office. The reporting period specified by the owner/operator shall be no later than one year from the start of operations of the new or modified small combustion unit(s), unless otherwise approved by the Department. The initial and subsequent annual reports shall be submitted within 60 days of the end of the reporting periods. General information required on all reports includes:
 - (i) Company Name;
 - (ii) Facility Site Name;
 - (iii) The GP-1 authorization number;
 - (iv) Either:
 - (A) The address of the site; or
 - (B) A description of the site and the location using latitude and longitude coordinates of the site in decimal degrees to an accuracy and precision of five decimal degrees using the North American Datum of 1983;
 - (v) The beginning and ending dates of the reporting period;

- (vi) The Certification Form described in Condition 9(h), which must include:
 - (A) The Statement: "Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."; **and**
 - (B) The signature of the certifying Responsible Official;
 - (vii) Identification of each source included in the report;
 - (viii) The identification of each term or condition of the GP-1 that is the basis of the certification, the compliance status, and the methods used for determining the compliance status of the source, currently and over the reporting period as identified in Section B of this General Permit; **and**
 - (ix) The records of the facility's emissions to demonstrate compliance with Condition 11(b).
- (d) Upon request from the Department, in accordance with 25 Pa. Code § 135.3, the owner or operator of a facility using this General Permit as an operating permit shall submit to the Department via AES*Online or AES*XML at www.depgreenport.state.pa.us/ by March 1st of each year, a facility inventory report for the preceding calendar year for all sources regulated under this General Permit. The inventory report shall include all emissions information for all sources operated during the preceding calendar year from the annual report required in (c) above. Emissions data including, but not limited, to the following shall be reported:
- (i) NO_x;
 - (ii) CO;
 - (iii) SO_x;
 - (iv) PM₁₀;
 - (v) PM_{2.5};
 - (vi) VOC
 - (vii) Total HAP;
 - (viii) CO₂
 - (ix) CH₄; **and**
 - (x) N₂O

13. Source Testing Requirements

- (a) The owner or operator of a combustion unit regulated under this General Permit that does not meet the definition of a gas fired boiler and which has a maximum heat input capacity greater than 50 MMBtu/hr shall conduct performance testing for nitrogen oxides and carbon monoxide in accordance with Section B Condition 5 within 180 days, unless otherwise approved in writing by the Department, of initial startup of the new source or re-authorization to use GP-1. In addition to the specific performance testing requirements included in this General Permit, the Department may require the owner or operator to conduct a source test if it is determined that the air contaminant emissions from any source operating under this General Permit are, or may be, in excess of an applicable air contaminant emission limitation.
- (b) A dual-fuel boiler is not required to conduct performance testing to demonstrate compliance with the emissions limitations for fuel oil firing, provided the boiler is operated in accordance with the definition of a gas-fired boiler as specified in Section A Condition 2.
- (c) All testing shall be performed in accordance with any applicable Federal regulations, 25 Pa. Code Chapter 139 and the current version of the Department's Source Testing Manual, or an alternative test method as approved by the Department.

- (d) All submittals shall meet the applicable requirements specified in the most current version of the Department's Source Testing Manual and must conform to the Source Testing FAQs.
- (e) One electronic copy of all protocols and reports, with the exception of periodic monitoring data, shall be submitted to the Pennsylvania Source Test Information Management System (PSIMS) Administrator for the Source Testing Section in DEP's Central Office. Pursuant to 25 Pa. Code §§ 139.53(a)(1) and 139.53(a)(3), all submittals, excluding test notification, shall be accomplished through PSIMS*Online. An electronic copy of all protocols and reports, including periodic monitoring data, shall also be submitted to the Air Program Manager of the appropriate DEP Regional Office.
- (f) At least 90 calendar days prior to commencing performance testing to demonstrate compliance required by this General Permit, a test protocol shall be submitted in accordance with (d) above for review and approval. If the owner or operator has a test protocol, previously approved by the Department, a new test protocol does not need to be submitted for review/approval, provided that there are no changes. In such instances, the owner or operator may submit a notification to the Source Testing Section in Central Office stating that testing will be conducted in accordance with the test protocol (and all conditions of acceptance therein), conditionally approved by [technical reviewer's name] on [approval date on letter], and stating that there have not been any changes (including the tester) since the protocol was approved.
- (g) At least 30 calendar days prior to commencing performance testing to demonstrate compliance required by this General Permit, written notification of the date and time of testing shall be provided to the Department's Division of Source Testing and Monitoring and the appropriate DEP Regional Office so that an observer may be present. The Department is under no obligation to accept the results of any testing that does not meet all of the criteria in 25 Pa. Code § 139.2.
- (h) Within 15 calendar days after completion of the on-site testing portion of an emission test program to demonstrate compliance required by this General Permit, if a complete test report has not yet been submitted, an electronic notification shall be submitted in accordance with (d) above indicating the completion date of the on-site testing.
- (i) A complete test report shall be submitted in accordance with (d) above no later than 60 calendar days after completion of the on-site testing portion of an emission test program required by this General Permit. The complete test report shall include a summary at the beginning of the report which includes:
 - (i) A statement that the owner or operator has reviewed the report from the emissions testing company and agrees with the findings;
 - (ii) The GP-1 authorization number and conditions that are the basis for the evaluation;
 - (iii) A summary of results with respect to each applicable permit condition; **and**
 - (iv) A statement of compliance or non-compliance with each applicable permit condition.

SECTION B. GAS AND NO. 2 OIL FIRED SMALL COMBUSTION UNITS

1. BAT Compliance Requirements

- (a) For each small combustion unit constructed under and authorized to operate under GP-1 approved by the Department on or after December 2, 1995 and prior to the date of issuance of this General Permit (GP-1), the owner or operator shall:
 - (i) Construct qualifying gas and No. 2 virgin oil fired small combustion units capable of reducing nitrogen oxides (NO_x) and carbon monoxide (CO) emissions to or below:
 - (A) 30 ppmdv NO_x at 3% O₂ when firing gaseous fuel;
 - (B) 90 ppmdv NO_x at 3% O₂ when firing No. 2 fuel oil; **and**
 - (C) 300 ppmdv CO at 3% O₂

- (b) For each small combustion unit constructed under and authorized to operate under GP-1 approved by the Department on or after the date of issuance of this General Permit (GP-1), the owner or operator shall:
 - (i) Construct and operate the small combustion unit such that it does not exceed the following emission standards:
 - (A) 9 ppm_{dv} NO_x at 3% O₂ when firing gaseous fuel;
 - (B) 90 ppm_{dv} NO_x at 3% O₂ when firing No. 2 fuel oil; **and**
 - (C) 130 ppm_{dv} CO at 3% O₂
 - (ii) Ensure that the combustion unit meets the visible emissions standards, as determined by the methods described in 25 Pa. Code § 123.43, by not exceeding the following limitations:
 - (A) Equal to or greater than 10% for a period or periods aggregating more than three minutes in any one hour; **and**
 - (B) Equal to or greater than 30% at any time.

2. Work Practice Standards

- (a) For each small combustion unit constructed under and authorized to operate under GP-1, the owner or operator shall conduct an annual tune-up/inspection on the small combustion unit. At a minimum the tune-up/inspection shall consist of the following:
 - (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary;
 - (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
 - (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly;
 - (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with the NO_x requirement to which the small combustion unit is subject;
- (b) For each small combustion unit constructed under and authorized to operate under GP-1, the owner or operator shall, every three years, measure the concentrations in the effluent stream of NO_x and CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable analyzer as long as it is calibrated and operated according to the manufacturer's recommendations, the procedures specified in ASTM D-6522, and the following requirements:
 - (i) The portable analyzer shall undergo factory laboratory calibration and cleaning every three years.
 - (ii) The portable analyzer shall have on-site calibration checks using certified calibration gases demonstrating the analyzer accuracy requirements specified in ASTM D-6522.
 - (iii) In order to verify emissions, the owner or operator shall conduct three, 20-minute test runs recording emissions data at least once each minute.
 - (iv) Depending on concentrations observed, fresh air purges should be performed according to manufacturer's recommendations.
 - (v) Re-zeroing of the portable analyzer should be performed according to manufacturer's recommendations or at least before every test run.

- (c) Maintain records of the work practice standards which shall, at a minimum, include the following:
 - (i) The concentrations of NO_x and CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the small combustion unit;
 - (ii) A description of any corrective actions taken as part of the tune-up;
 - (iii) The date(s) the annual tune-up/inspection was conducted;
 - (iv) The factory calibration certification sheets for the portable analyzer; **and**
 - (v) The type and amount of fuel used over the 12 months prior to the tune-up.

3. Recordkeeping Requirements

For each small combustion unit regulated under this General Permit, the owner or operator shall maintain the following records in accordance with Section A Condition 11, including information on:

- (a) Fuel certification reports of the percent sulfur by weight of each delivery of No. 2 fuel oil to the facility;
- (b) Fuel consumption records for each small combustion unit on a monthly basis.
- (c) Records of annual tune-ups/inspections; **and**
- (d) The summary for each complete test report described in Section A Condition 13(i)

4. Reporting Requirements

Upon request from the Department, the emissions from each small combustion unit operated during the reporting period must be included in the emissions inventory report of Section A Condition 12(d).

5. Small Combustion Unit Performance Testing Requirements

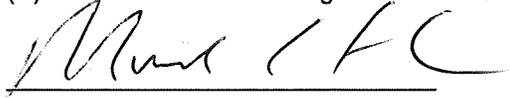
- (a) When conducting a performance test for a small combustion unit, the owner or operator must submit the test protocol described in Section A Condition 13(f) for review and approval
- (b) The owner or operator should conduct the following test procedures:
 - (i) Conduct three test runs each of at least one-hour duration while the source is operating at maximum routine operating conditions.
 - (ii) Select the sampling port location and the number and location of traverse points at the exhaust using 40 CFR Part 60, Appendix A-1, Method 1 or 1A depending on stack diameter, or the sampling points selected according to 40 CFR Part 60, Appendix A-4, Method 7E Section 8.1.2.
 - (iii) Determine the effluent characteristics including by either:
 - (A) Calculating the exhaust flow in accordance with 40 CFR Part 60, Appendix A-7, Method 19 and measuring the O₂ concentration using 40 CFR Part 60, Appendix A-2, Method 3A; **or**
 - (B) By measuring:
 - (1) The flow velocity, stack temperature, static pressure, and barometric pressure using 40 CFR Part 60, Appendix A-1, Method 2 or 2C depending on stack diameter;
 - (2) The gas density using 40 CFR Part 60, Appendix A-2, Method 3A; **and**
 - (3) The moisture content using 40 CFR Part 60, Appendix A-3, Method 4.

(iv) Simultaneous to the determination of the O₂ concentration in (iii)(A) or (B) above, determine:

(A) Nitrogen Oxides using 40 CFR Part 60, Appendix A-4. Method 7E; **and**

(B) Carbon Monoxide using 40 CFR Part 60, Appendix A-4, Method 10.

Issued by:



Mark Hammond

Director

Bureau of Air Quality

Date Issued: 1/28/2023

Date Effective: 4/1/2023



pennsylvania

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

SOUTHWEST REGIONAL OFFICE – AIR QUALITY PROGRAM

MEMO

TO Air Quality Permit File GP1-04-00740A

FROM Alexander Sandy/AS
Air Quality Engineering Specialist

THROUGH Sheri L. Guerrieri, P.E./slg
Environmental Engineer Manager

Mark R. Gorog, P.E./ KH for
Regional Manager

DATE November 30, 2023

RE Review of General Permit Application
Shell Chemical Appalachia LLC
Shell Polymers Monaca Site
Potter and Center Townships, Beaver County
APS 1101177 Auth 1462302 PF 104430

Background

On November 15, 2023, the Department received a GP-1, *Gas and No. 2 Oil Fired Small Combustion Units*, application from Shell Chemical Appalachia LLC (Shell) for installation and operation of three (3) temporary boilers at the Shell Polymers Monaca (SPM) Site located in Potter and Center Townships, Beaver County.

- Three (3) 99.94 MMBtu/hr Indeck OT75 (or equivalent) gas-fired boilers controlled by flue gas recirculation and selective catalytic reduction

GP-1 was recently revised with an effective date of April 1, 2023. Shell's application is complete, including the appropriate fee of \$2,350 (\$1,600 General Plan Approval + \$750 General Operating Permit).

Project Description

The proposed temporary boilers are needed to provide additional reliable steam into the SPM site steam system during a temporary period while mechanical and operational deficiencies to the steam turbine generators (STGs) and SPM site steam system can be corrected.

Shell anticipates that this temporary period will be nine (9) months and not to exceed one (1) year to allow time to correct the mechanical and operational issues with the STGs, improve heat distribution and/or replace steam extraction valves as needed, and modify the steam system to make it reliable and sustainable at all levels of steam. These boilers will be staged on trailers near to the permanent STGs and will be removed from site once the above corrections have been made. There is no permanent footprint at the SPM site for these temporary boilers which are not part of the permanent facility design. Operation is scheduled to commence on December 15, 2023.

The proposed temporary boilers will fire pipeline quality natural gas already supplied to SPM and have a design heat input of 99.94 million British Thermal Units per hour (MM Btu/hr) and producing capabilities of 75,000 pounds per hour (lbs/hr), each. Two (2) of the boilers will be operated at one time, while the third boiler will be used for stand-by purposes only. Alternately, all three (3) boilers may be operated at one time at two-third capacity to enable quicker load shifting in case the third boiler were to trip offline or need maintenance. Each boiler will be equipped with Selective Catalytic Reduction (SCR) for NO_x reduction and operate at 0-5% flue gas recirculation (FGR) for CO control. SCR controls are expected to be supplied with anhydrous ammonia contained in 150 lb bottles and eight (8) bottles per boiler with one spare rack of bottles on site.

Regulatory Analysis

State

Per **GP-1 Section A Condition 3(a)** *Application for Authorization to Use GP-1*, this General Permit authorizes the construction, modification, and/or operation of gas and/or fuel oil fired small combustion units at a facility. The applicability of this General Permit is limited to combustion units with rated capacities equal to or less than 100 million Btu per hour of heat input fueled by gaseous fuel, or by No. 2 or lighter (viscosity less than or equal to 5.82 cSt) commercial fuel oils.

Per **GP-1 Section A Condition 5(b)** *Terms of Authorization to use GP-1*, The authorization to construct a source or facility will expire 18 months from the date of the authorization if the owner or operator fails to commence construction or if there is a lapse in construction of 18 months.

Per **GP-1 Section A Condition 5(c)** *General Plan Approval Temporary Operation*, "For a facility using this General Permit as a general plan approval, temporary operation of the small combustion unit(s) is authorized to facilitate the shakedown of the sources and air cleaning devices, to permit operation pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) which incorporates the appropriate provisions of this General Permit. This temporary operation period will be valid for 180 days and may be extended for additional limited periods, with the Department's written approval, each not to exceed 180 days."

In summary, upon authorization, the applicant will have 18 months to commence construction (which is much greater than the schedule detailed above). In accordance with GP-1 Section Condition 10(b), notification to the Department is required, in writing, at least five business days prior to the commencement of operation.

Per **GP-1 Section A Condition 9(c)**, All sources and associated air cleaning devices located at a facility shall be:

- (i) Operated in such a manner as not to cause air pollution, as that term is defined in 25 Pa. Code § 121.1;
- (ii) Operated and maintained in a manner consistent with good operating practices and the specifications of any associated plan approval application submitted to the Department for the construction, modification, or reactivation of that source and/or control device, as well as the conditions of the plan approval issued by the Department, in accordance with 25 Pa. Code § 127.25;
- (iii) Operated and maintained in accordance with the fugitive emission requirements of 25 Pa. Code § 123.1 and § 123.2; **and**
- (iv) Operated and maintained in such a manner that malodors are not detectable outside the property of the owner or operator on whose land the facility is being operated in accordance with 25 Pa. Code § 123.31.

Per **GP-1 Section A Condition 9(d)**, Any small combustion unit operated under this General Permit may not, at any time, result in the emission of:

- (i) Visible emissions in excess of the limitations specified in 25 Pa. Code §123.41 (relating to limitations) as follows:
 - (A) Equal to or greater than 20% for a period or periods aggregating more than three minutes in any one hour.
 - (B) Equal to or greater than 60% at any time.
- (ii) Particulate matter in excess of the limitations specified in 25 Pa. Code § 123.11 (relating to combustion units)
- (iii) Sulfur compound emissions in excess of the limitations specified in 25 Pa. Code § 123.22 (relating to combustion units).

Per **GP-1 Section B BAT Compliance Requirements Condition 1(b)**, For each small combustion unit constructed under and authorized to operate under GP-1 approved by the Department on or after the date of issuance of this General Permit (GP-1), the owner or operator shall:

- (i) Construct and operate the small combustion unit such that it does not exceed the following emission standards:
 - (A) 9 ppm_{dv} NOX at 3% O₂ when firing gaseous fuel;
 - (B) 90 ppm_{dv} NOX at 3% O₂ when firing No. 2 fuel oil; and
 - (C) 130 ppm_{dv} CO at 3% O₂
- (ii) Ensure that the combustion unit meets the visible emissions standards, as determined by the methods described in 25 Pa. Code § 123.43, by not exceeding the following limitations:
 - (A) Equal to or greater than 10% for a period or periods aggregating more than three minutes in any one hour; **and**

(B) Equal to or greater than 30% at any time.

Federal

40 CFR Part 60, Subpart Dc - Standards of performance for Small Industrial, Commercial, Institutional Steam Generating Units will apply to the proposed units. This rule applies to owners/operators of steam generating units with a maximum design heat input capacity greater than or equal to 10 MM Btu/hr and less than 100 MMBtu/hr. Since the boilers will be on-site for more than 180 consecutive days, the boilers cannot be classified as temporary boilers and therefore, must meet the requirements. Requirements include:

- Submit notification of construction and actual startup [§60.48c(a)]
- Keep records of natural gas combusted each calendar month [§60.48c(g)(2)]

40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters will potentially apply to the proposed units. This rule applies to owners/operators of industrial, commercial, or institutional boilers/process heaters that are part of a major source of hazardous air pollutants (HAPs). Temporary boilers/process heaters (on-site less than 12 consecutive months) are exempt. SPM is a major source of HAPS but does not anticipate that the boilers will be on-site for more than 12-consecutive months. Therefore, this rule does not apply. If this rule does become applicable, Shell will comply with the applicable requirements.

40 CFR Part 63, Subpart JJJJJJ - National Emission Standards for Industrial, Commercial, and Institutional Boilers Area Sources will not apply. This rule applies to owners/operators of industrial, commercial, or institutional boilers that are located at, or is part of, an area source (minor source) of HAPs. SPM is a major source of HAPs and is therefore, not applicable to this rule.

Sources, Control Devices, and Emissions

According to the manufacturer’s specifications, the proposed boilers are rated at the following emission rates:

COMPONENT	PPM	#/MMBTU
NOx at SCR inlet	30	0.036
NOx at SCR outlet	9	0.0108
CO (note 1)	50	0.0375
VOC (as propane)	n/a	0.004
PM 2.5 (note 2)	n/a	0.005
SOx	n/a	n/a

NOTES:

1. There should be no changes with SCR use.
2. The PM is a combination filterable plus condensable.
3. The predicted boiler emissions with SCR use (30% to 100% boiler load) are based on minimum temperature at reagent injection point of 450 F and maximum temperature at reagent injection point of 750 F.
4. 99.99% Pure Reagent Grade Anhydrous Liquid NH3 (not diluted).
5. Maximum Anticipated Ammonia Slip (ppm): 10 PPMVD @ 3% O2.

The proposed 99.94 MMBtu/hr combustion units will utilize FGR and SCR to reduce NOx emissions. Emissions for NOx, CO, VOC, PM, PM₁₀, PM_{2.5}, and NH₃ are based on manufacturer’s information, AP-42 emission factors from Tables 1.4-1 and 2 for all other pollutants, and an operation time of 8,760 hours per year. As shown in the table above, the manufacturer guarantees the units are capable of meeting the BAT requirements of GP-1 Section B Condition 1(b)(I) of 9 ppmdv NOx and 130 ppmdv CO. Compliance will be required to be demonstrated through the Work Practice Standards, Recordkeeping Requirements, and Reporting Requirements of GP1-Section B Conditions 2, 3, and 4 respectively. Project emissions are shown in Table 1 below.

Table 1: Project Emissions

Pollutant	Emissions	
	lb/hr	tpy
NOx	2.16	9.45
CO	7.49	32.83
PM (Total)	1.00	4.38
PM _{2.5}	1.00	4.38
PM ₁₀	1.00	4.38
VOC	0.80	3.50
Total HAPs	0.0186	0.081
SO ₂	0.12	0.52

Conclusions and Recommendations

After review, I recommend authorization to use GP-1 for installation of the following sources at this facility for a period of 18 months from the date of authorization. The authorization to construct a source or facility will expire 18 months from the date of the authorization if the owner or operator fails to commence construction or if there is a lapse in construction of 18 months. Per GP-1 Section A Condition 5(c), temporary operation will be valid for 180 days and may be extended for additional limited periods, with the Department's written approval, each not to exceed 180 days. Notification is required at least five business days prior to the commencement of operation.

- Three (3) 99.94 MMBtu/hr Indeck OT75 (or equivalent) gas-fired boilers controlled by flue gas recirculation and selective catalytic reduction