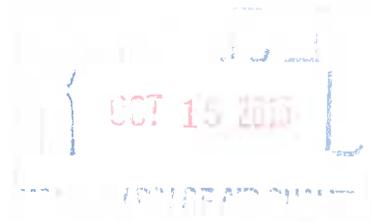




October 13, 2015

Ms. Bev McKeone, Program Manager
NSR Permitting
Division of Air Quality
West Virginia Department of Environmental Protection
601 - 57th Street
Charleston, WV 25304



**Re: Permit Determination Form Application for Fuel Conversion to Propane at the Kingsford Manufacturing Company Beryl, WV Plant
Title V Permit No. R30-05700003-2012
Plant ID No. 057-00003**

Dear Ms. McKeone:

Kingsford Manufacturing Company (KMC) owns and operates a charcoal manufacturing facility located in Beryl, Mineral County, West Virginia that is subject to the above referenced Title V Operating Permit. KMC is submitting the attached Permit Determination Form to convert the Beryl plant ACC burner (C-08) from natural gas to propane. The burner is capable of firing propane without the need for any modifications. A 12,000-gallon propane tank and fuel train system will be installed and the ACC burner will fire propane instead of natural gas. This change has been necessitated by a sudden and unexpected restriction on the natural gas supply to the Beryl plant.

No changes to permitted emission rates are necessary and the fuel change will not violate any existing permit term or condition. KMC is providing air emissions calculations as Attachment J that demonstrate that the switch from natural gas to propane will not result in significant increases. NOx is the only pollutant estimated to increase more than negligible amounts and the NOx increases are projected to be about 3.7 lb/hr and 1.1 tpy.

If you have any questions or require any additional information, please feel free to contact me at (304) 478-5529.

Very truly yours,
KINGSFORD MANUFACTURING COMPANY

A handwritten signature in blue ink that reads "Scott Stephenson".

Scott Stephenson
Plant Engineering Manager

*Highway 219 S.
PO Box 464
Parsons, WV
26287*

(304) 478-2911
FAX: (304) 478-2129



WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

**PERMIT DETERMINATION FORM
(PDF)**

FOR AGENCY USE ONLY: PLANT I.D. # _____
PDF # _____ PERMIT WRITER: _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):

Kingsford Manufacturing Company

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):

Beryl, WV Facility

3. NORTH AMERICAN INDUSTRY
CLASSIFICATION SYSTEM (NAICS)
CODE:

325194

4A. MAILING ADDRESS: P. O. Box 6, Luke, MD 21540

4B. PHYSICAL ADDRESS: Route 219

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A): The facility is located adjacent to Route 46 near the WV-MD border, slightly west of the town of Luke, MD.

5B. NEAREST ROAD:
Route 46

5C. NEAREST CITY OR TOWN:
Beryl

5D. COUNTY:
Mineral

5E. UTM NORTHING (KM):
4,371.0

5F. UTM EASTING (KM):
666.0

5G. UTM ZONE:
17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:
Scott Stephenson

6B. TITLE:
Plant Engineering Manager

6C. TELEPHONE:
304-478-2911

6D. FAX:
304-478-2129

6E. E-MAIL:
scott.stephenson@clorox.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):

057 - 00003

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19
AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED
WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):
R30-05700003-2012

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST:
No

8A. TYPE OF EMISSION SOURCE (CHECK ONE):

- NEW SOURCE ADMINISTRATIVE UPDATE
 MODIFICATION OTHER (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE
APPLICANT'S CONSENT TO UPDATE THE EXISTING
PERMIT WITH THE INFORMATION CONTAINED HEREIN?

YES NO

9. IS DEMOLITION OR PHYSICAL RENOVATION AT AN EXISTING FACILITY INVOLVED? YES NO

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:

10/15/2015

10B. DATE OF ANTICIPATED START-UP:

10/15/2015

11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B.

11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C. Installing a propane storage tank, vaporizer, and fuel train to switch fuel from natural gas to the ACC burner (Emission Unit ID 003). The burner is used primarily during system start ups to maintain minimum afterburner temperatures.

12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D. FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

13A. REGULATED AIR POLLUTANT EMISSIONS:

⇒ **FOR A NEW FACILITY**, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY**, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM		
PM ₁₀		
VOCs		
CO		
NO _x		
SO ₂		
Pb		
HAPs (AGGREGATE AMOUNT)		
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.). No change in PTE. See Attachment E for estimated change in actual emissions for fuel switching from natural gas to propane.

14. CERTIFICATION OF DATA

I, CAREY PRESTON (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A **RESPONSIBLE OFFICIAL**** (PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____

*(Scott Stephenson for
Carey Preston)*

TITLE: PLANT MANAGER

DATE: 10 / 13 / 15

** THE DEFINITION OF THE PHRASE 'RESPONSIBLE OFFICIAL' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS

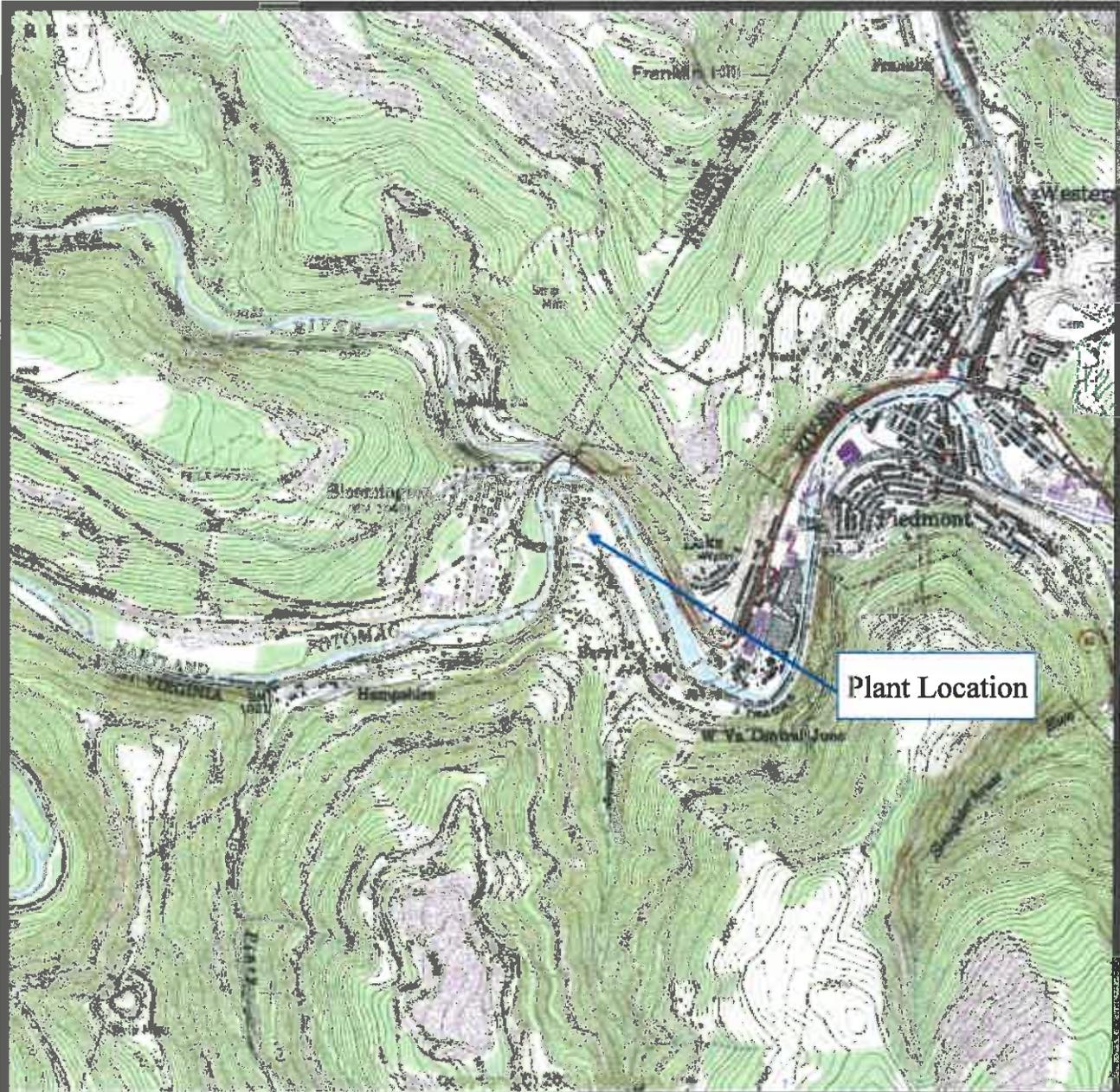
ATTACHMENT A ATTACHMENT B ATTACHMENT C ATTACHMENT D ATTACHMENT E

RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE:

www.dsp.wv.gov/daq

ATTACHMENT A – MAP



50 N. Fifth Street, 5th Floor
 Reading, PA 19601
 Phone: 610-375-9301
 Fax: 610-375-9302



ATTACHMENT A: SITE LOCATION MAP

BERYL PLANT

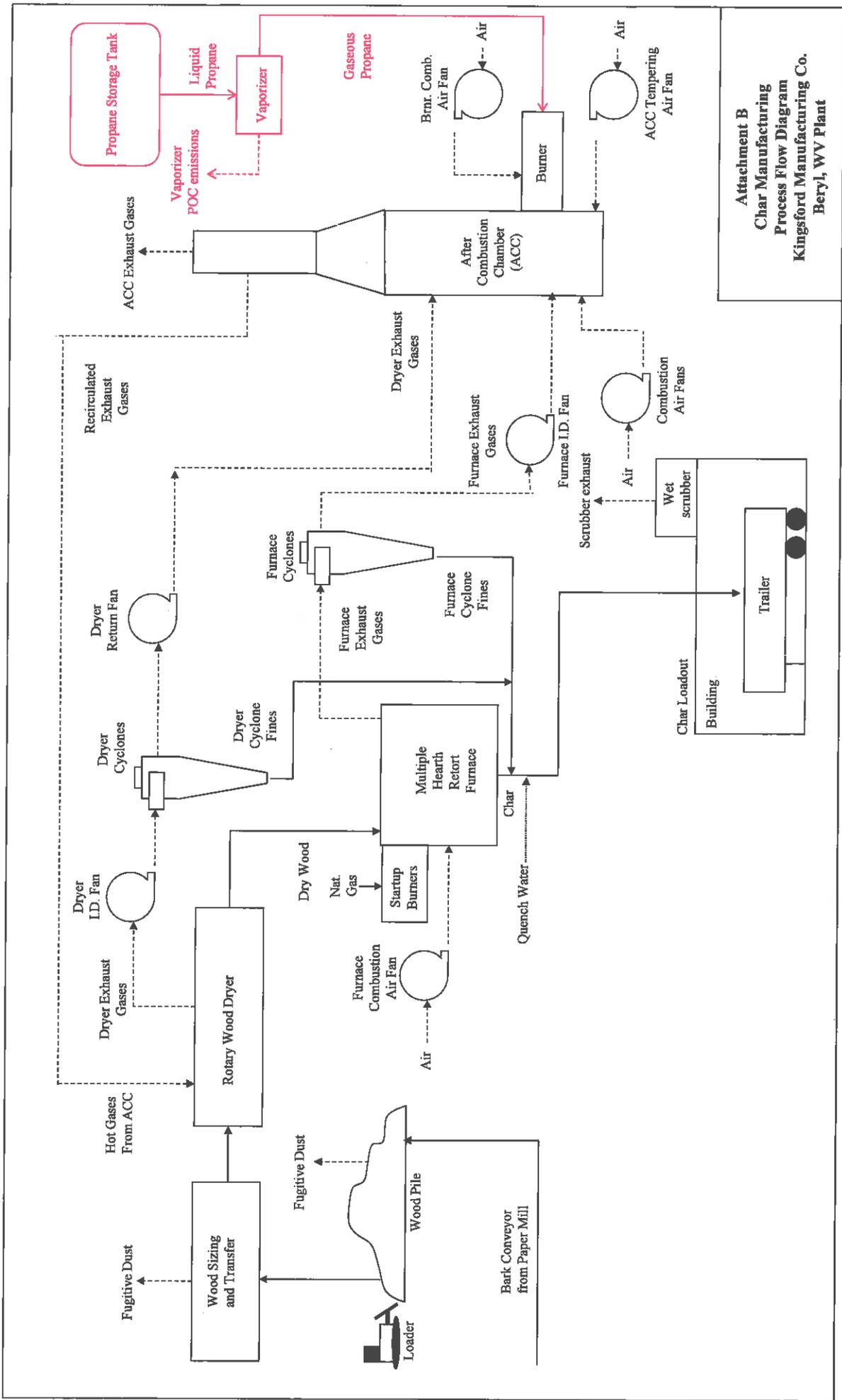
KINGSFORD MANUFACTURING COMPANY

USGS MAP QUADRANGLE: WESTERNPORT, MD

SCALE : 1" = 2000 FEET



ATTACHMENT B – PROCESS FLOW DIAGRAM



Attachment B
Char Manufacturing
Process Flow Diagram
Kingsford Manufacturing Co.
Beryl, WV Plant

ATTACHMENT C – PROCESS DESCRIPTION

PROCESS DESCRIPTION

Kingsford Mfg. Co. (KMC) operates a wood char manufacturing plant in Beryl, Mineral County, West Virginia. The plant uses natural gas to provide heat to the wood dryer, retort furnace and afterburner (ACC) systems (collectively comprising Emission Unit 003), primarily during start up conditions. During normal operations, sufficient heat is provided from the pyrolysis of the dry wood in the furnace to support combustion in the ACC. KMC was notified last week (week of October 5, 2015) that natural gas supply to the plant would be restricted immediately. This restriction allows the plant to operate during normal operating conditions but does not provide sufficient gas for system startups where it is necessary to operate the ACC burner at high fire conditions.

To address this restriction on natural gas supply, KMC proposes to install a 12,000-gallon propane tank and associated propane fuel train to provide propane as a replacement fuel to the ACC burner. The ACC burner is a North American low-NOx burner (Model 4796-18) rated at 40 million Btu/hr of heat input. The burner is capable of firing either natural gas or propane. No physical modifications are required to the burner to accommodate propane firing. KMC will install the propane tank, a vaporizer, and piping to provide gaseous propane to the ACC burner.

The Beryl plant will continue to use natural gas in other plant combustion sources. Propane usage and impacts on actual emissions have been estimated conservatively assuming the ACC burner operates at rated capacity during system startups for 100 hours per year and that propane usage during normal operations will be equivalent to the current average facility-wide gas usage average daily rate of 50 Mcf. KMC estimates that “hot startups” occur approximately once every 2 weeks – these are startups following process upsets or scheduled maintenance that require the ACC to operate at high fire for no more than 2 hours following each event. Following the annual plant shutdown, a “cold startup” occurs requiring the ACC to operate at high fire for up to 48 hours. To calculate the net impacts on air emissions associated with firing propane instead of natural gas, KMC assumes that the ACC will operate at its maximum rated capacity (40 MMBtu/hr) for 100 hours per year and will operate at a normal rate equivalent to 50 Mcf/day of gas usage for the remainder of the time.

As shown in Attachment E, the emissions associated with natural gas or with propane firing in the ACC burner are considerably lower than the permitted emissions for Emission Point S-02 (ACC) in Condition 6.1.1 of the Beryl facility Title V operating permit and the underlying R13 permit.

ATTACHMENT D – MSDS

SAFETY DATA SHEET

EFFECTIVE August 2015

Llame 1-800-776-7263 para la informacion de la seguridad en el espanol

Suburban Propane

SECTION 1 – PRODUCT & COMPANY IDENTIFICATION

Product Name: Commercial Odorized Propane
Chemical Name: **Propane** (C₃H₈)
Chemical Family: Petroleum Hydrocarbon
Common Names: Liquefied Petroleum Gas, LP-Gas, LPG, Bottle Gas
Intended Use: Propane is a liquid fuel
Distributor: Suburban Propane, L.P. PO Box 206 Whippany, NJ 07981
Emergency Response: CHEMTREC (800) 424-9300
Additional Safety Information: Safety Engineering & Environmental (315) 385-4442
Customer Service (24-Hr Phone): (800) PROPANE or (800) 776-7263

SECTION 2 – CHEMICAL HAZARD CLASSIFICATION & WARNING INFORMATION

NFPA CLASSES:

1-Slight
2-Moderate
3-Serious
4-Severe



Physical hazards

Flammable gases

Category 1

Health hazards

Gases under pressure
Acute toxicity, inhalation
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity, repeated exposure
Not classified.

Liquefied gas
Category 4
Category 1B
Category 1A
Category 1A
Category 2

OSHA defined hazards

Label Elements



Signal Word

Danger

Hazard Statement	Propane (also called LPG-Liquefied Petroleum Gas or LP-Gas) is a liquid fuel stored under pressure. In most systems, propane is vaporized to a gas before it leaves the tank. Propane is highly flammable when mixed with air (oxygen) and can be ignited by many sources, including open flames, smoking materials, electrical sparks, and static electricity. Severe "freeze burn" or frostbite can result if propane liquid comes in contact with your skin. Extremely flammable gas. Harmful if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to Blood through prolonged or repeated exposure. May cause cryogenic burns or injury. Propane is a simple asphyxiant.
Precautionary statement	
General	Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear cold insulating gloves/face shield/eye protection. Do not breathe gas. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If inhaled: Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice/attention. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
Storage	Store in a well-ventilated place.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated places.

SECTION 3 – COMPOSITION/INGREDIENT INFORMATION

COMPONENTS	CAS NO.	CONCENTRATION
PROPANE	74-98-6	*
PROPYLENE	115-07-1	*
BUTANES	106-97-8	2.5%
SULPHUR	7704-34-9	185 ppm with no discoloration of Lead Acetate paper**
RESIDUAL MATTER		0.05 ml after boil off of 100 ml liquid sample **
ODORANT(S)	Various	Odor concentration detectable in air of not less than one-fifth of the lower limit of flammability per NFPA 58.
CORROSIVES		Not to exceed #1 grade copper strip test**

* Combined constituents comprise a minimum 97.45 % of the total weight under Gas Processors Association (GPA) Standard 2140-97.

** Based on American Society of Testing and Materials (ASTM) Standard D1835-91.

SECTION 4 – FIRST AID MEASURES

Inhalation	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. If breathing or heartbeat cease, artificial respiration or cardiopulmonary resuscitation should be started immediately. Get medical attention.
Skin Contact	Contact with liquid propane can cause freeze burns similar to frostbite. Remove saturated clothing, shoes and jewelry immediately. Do not remove clothing that adheres

Item No. 1519278 SAF 5152 0715

Eye Contact	due to freezing. Affected body parts should be gently flushed with or immersed in lukewarm water for 15 minutes. Seek medical attention. Although propane vapor is generally non-irritating, pressurized gas may inflict mechanical injury to the eye. Direct contact with liquid propane can cause freeze burns and resultant swelling of the eye. In case of contact with eyes, remove contact lenses if present and easy to do so, immediately flush with clean, low-pressure water, for a minimum of (15) minutes.
Ingestion	Deemed unlikely. Contact with liquid form may cause frostbite. Get medical attention immediately.
Most important symptoms/effects, acute, and delayed	Frostbite, burns. Due to oxygen deficiency inhalation of gas may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the materials(s) involved, and take precautions to protect themselves.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media	Class B fire-extinguishing media such as HALON, CO ₂ , or dry chemical can be used. Water spray or fog is appropriate for surrounding areas. Do not extinguish flame until source of gas is shut off. Only those with specialized training should attempt firefighting. For further information, refer to NPGA "Propane Emergencies" Text #7220. Do not use water jet as an extinguisher, as this will spread the fire.
Unsuitable extinguishing media	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Clear and evacuate the area - only properly trained and protected emergency response personnel shall be permitted in the area. For fires involving tanks: <ul style="list-style-type: none"> • Fight fire from maximum distance or use unattended hose • Cool containers with flooding quantities until well after fire is out • Do not direct water source at source of leak or safety devices; icing may occur • Withdraw immediately in case of rising sound from venting safety devices or tank discoloration • ALWAYS stay away from tanks engulfed in fire • For massive fire, use unattended hose holders or monitor nozzles; if this is possible withdraw from area and allow fire to burn
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	PROPANE IS EXTREMELY FLAMMABLE. Propane will be easily ignited by heat, sparks, or flame. Propane will form explosive mixtures with air. Propane will form explosive mixtures with air. Vapors from liquefied gas are heavier than air and will

spread at low levels (along the ground). Vapors may travel to source of ignition and flash back. Containers may explode when heated. Ruptured cylinders may propel/rocket.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment, and emergency procedures

In the event of an accidental release or spill out of doors, these actions should be taken: Evacuate immediate area. Eliminate all possible sources of ignition including heat, sparks and open flame. Provide maximum ventilation and shut off source(s) of leak if possible to do so safely. If cylinder or container is leaking, contact the local fire department or the nearest Suburban Propane supplier. Never enter a vapor (white) cloud.

Methods and materials For containment and cleaning up

In the event of an accidental release of propane:

- Eliminate all sources of ignition (no smoking, flares, sparks or flames in immediate area)
- Ground all equipment used for handling product
- Do not touch or walk through the spilled material
- Stop leak source if this can be done without risk
- If possible, position leaking containers so that gas escapes rather than liquid
- Use water spray to reduce vapors or divert vapor cloud and avoid allowing water runoff to contact spilled material
- Do not direct water at spill or source of leak
- Prevent spreading of vapors through sewers, ventilation systems and confined areas
- Isolate area until gas has dispersed

Environmental

Prevent further leakage or spillage if safe to do so. Avoid discharge into precautions drains, water courses or onto the ground.

SECTION 7 – HANDLING & STORAGE

Precautions for safe handling

Propane systems must be tested and proven leak free prior to use. Refer to National Fire Protection Association (NFPA) 54 National Fuel Gas Code for further instructions. Keep away from all sources of ignition, including heat, sparks and open flames. Never check for leaks with a lit match or flame. Use an approved leak detector solution or electronic leak detector.

All piping and equipment used for the handling, storage and use of propane must be specifically designed for that purpose. Refer to NFPA 54 National Fuel Gas Code and NFPA 58 Liquefied Petroleum Gas Code.

OSHA 29 CFR 1910.110, DOT 49 CFR 172.700 and NFPA 58 all require that persons handling LP gases be specially trained in proper handling and operating procedures, which must be documented by the employer. Only qualified persons should transport, operate, service and/or install propane systems and containers. Propane vapor is heavier than air and can collect in low-lying areas, especially in the absence of wind or ventilation. Propane is a simple asphyxiant. Liquid propane can cause freeze burns, and appropriate personal protective equipment should be used whenever handling this product.

Conditions for safe storage, including any incompatibilities

DO NOT STORE PROPANE CYLINDERS OR CONTAINERS INSIDE BUILDINGS.

Make sure regulator remains protected so operation will not be affected by the elements (rain, sleet, snow, ice, mud, debris). Regulator vent should be pointed down and be checked regularly. Customer to make sure building openings are not created and sources of ignition are not installed within the area of propane tanks, regulators, meters or propane equipment.

Empty propane containers retain residue and should be treated as if full. Never drop or damage containers. Damaged or corroded and leaking containers should not be utilized. Contact your local Suburban Propane supplier immediately to report any problems. If container service valve fails to operate properly, discontinue use. Never insert any object into the pressure relief valve. Return unused propane to supplier for proper disposal.

Propane cylinders should always be stored in an approved location with relief valves in direct communication with the vapor space, and with service valves closed and plugged when not in use. Refer to NFPA 58 for details of specific storage requirements.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTIVE EQUIPMENT

Component	Threshold Limit Value (TLV)	Permissible Exposure Limit (PEL)
Propane	NE	1000ppm
Propylene	NE	NE
Butanes	NE	800ppm

Appropriate Engineering Controls:

Provide ventilation in enclosed areas where accumulation of vapors may provide a flammable mixture. Where flammable mixtures may be present, specially designed electrical systems must be used in accordance with NFPA 70 National Electric Code.

Individual protection measures, such as personal protective equipment

Respiratory Protection: For general use no protection is required. Under emergency conditions, concentrations may be high enough to warrant supplied-air or self-contained breathing apparatus. Under these conditions, a flammable atmosphere is likely and precautions should be taken to avoid ignition.

Eye Protection: Approved safety glasses, goggles, or face shields should be used whenever filling and handling propane containers.

Protective Clothing: To avoid skin contact with liquid propane, approved gloves that are impervious to propane should be worn along with clothing that will provide protection from liquid propane for the expected duration- of exposure.

Other Protective Equipment: Safety shoes are recommended when handling cylinders.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9 – CHEMICAL & PHYSICAL PROPERTIES

Appearance

Physical State	Gas
Form	Liquefied gas
Color	Colorless
Odor	Odorless (Unless Odorized – See Below)
Odor threshold	5000-20000ppm
pH	NA
Melting point/freezing point	-309.46 °F (-189.7 °C)
Initial boiling point and boiling range	-44 °F (-42.22 °C)
Flash Point	-156.0 °F (-104.4 °C)
Evaporation rate	Not available.
Flammability (solid,gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit-lower(%)	2.2 %
Flammability limit-upper(%)	9.5 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.58
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	842 °F (450 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	100%
Specific Gravity(Liquid)	0.504
Specific Gravity(Vapor)	1.50
Expansion ratio of liquid to gas @ 14.7psia	1 to 270

An added odorant gives propane a strong unpleasant smell. Information regarding the effectiveness or intensity of odorants is set forth below.

Propane is Odorized: Propane smells like rotten eggs, a skunk's spray, or a dead animal. Some people may have difficulty smelling propane due to their age (older people have a less sensitive sense of smell); a medical condition; or the effects of medication, alcohol, tobacco, or drugs. Consider purchasing a propane gas detector as an additional measure of security.

Odor Fade: Odor fade is an unintended reduction in the concentration of the odor of propane, making it more difficult to smell. Although rare, several situations can cause odor fade:

- The presence of air, water, or rust in a propane tank or cylinder
- The passage of leaking propane through soil
- The exposure to building materials, masonry or fabrics

Since there is a possibility of odor fade or problems with your sense of smell, you should respond immediately to even a faint odor of gas.

To learn what propane smells like, Customers unfamiliar with that smell should call Suburban's Safety Information Request Center at 1-888-223-0029 and order the pamphlets called "Important Propane Safety Information for You and Your Family" and/or an expansive "Propane Safety" booklet to obtain a Scratch and Sniff Test, free of charge. Pamphlets can also be purchased through Propane Education & Research Council (PERC) at 1-866-905-1075 or www.propanecatalog.com.

SECTION 10 – STABILITY & REACTIVITY

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical Stability

Propane is very stable at normal temperature and storage conditions

Possible Hazardous Reactions

Polymerization reported not to occur

Conditions to Avoid

Keep away from heat, fire, flames, sparks, and other sources of ignition

Incompatible Materials

Strong oxidizing agents, acids, bases, ignition sources and heat

Hazardous Decomposition Products

Normal combustion products of propane are carbon dioxide, nitrogen and water vapor. Incomplete combustion of propane can produce carbon monoxide (CO), a toxic gas, and various aldehydes; an eye and nose irritant. These can be produced both by gas appliances and internal combustion engines. Propane fired equipment may emit carbon monoxide in its flue gasses.

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Eye contact
Ingestion

Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.

Contact with liquefied gas may cause frostbite.

Contact with liquefied gas may cause frostbite.

Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Frostbite, burns. Due to oxygen deficiency inhalation of gas may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

Information on toxicological effects

Acute toxicity
Skin corrosion/irritation
Serious eye damage/eye irritation

Harmful if inhaled.

Contact with liquefied gas may cause frostbite.

Contact with liquefied gas may cause frostbite.

Respiratory or skin sensitization

Respiratory sensitization
Skin sensitization

Not a respiratory sensitizer.

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

OSHA Specifically Regulated Substances

Not listed.

(29 CFR 1910.1001-1050)

Reproductive toxicity

May damage fertility or the unborn child.

Specific target organ toxicity single exposure

Not classified.

Specific target organ toxicity repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Not likely, due to the form of the product.

Chronic effects

May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

Mobility in soil

No data available.

Other adverse effects

No data available.

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14 – TRANSPORT INFORMATION

DOT

UN number	UN1075
UN proper shipping name	Liquefied petroleum gas
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Liquefied petroleum gas
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1075
UN proper shipping name	LIQUEFIED PETROLEUM GAS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not Applicable.
Environmental hazards	
Marine Pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code	Not applicable.
Emergency Contact for Shipping	CHEMTREC (800) 424-9300

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety & Health Administration (OSHA)

- 29 CFR 1910.1200 Hazard Communication Standard
- 29 CFR 1910.110 Storage and Handling of Liquefied Petroleum Gas
- 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals

Environmental Protection Agency (EPA)

CLA Reportable Quantity (RQ): None

Toxic Substance Control Act (TSCA)

Propane is listed on the TSCA inventory

California Proposition 65

This material does not contain any chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

Warning: Chemicals known to the state of California to cause cancer, birth defects or other reproductive harm are created by the combustion of propane.

SECTION 16 – OTHER INFORMATION

This Safety Data Sheet, issued July 2015, was prepared by Safety Engineering & Environmental Services of Suburban Propane and supersedes all earlier versions.

For further information write to:
SUBURBAN PROPANE, L.P.
Safety Engineering & Environmental Services
PO Box 4833
Syracuse, NY 13221
(315) 385-4442

FURTHER DISCLAIMER: The information contained in this document is believed to be correct at the time of writing. NO WARRANTY OF MERCHANTABILITY, SUITABILITY FOR ANY SPECIFIC PURPOSE, OR ANY ASPECT REGARDING ITS INTENDED USE OR THE EXPECTED RESULTS TO BE OBTAINED ARE EXPRESSED OR IMPLIED. This information and the propane furnished is done so on condition that the person(s) receiving them shall make their own determination as to the suitability of the product for any specific purpose, and that they assume any and all risks associated with that use.

CONSUMER SAFETY INFORMATION

We urge you to visit www.suburbanpropane.com for Consumer Safety Information prepared by the Propane Education & Research Council (PERC). Pamphlets called "Important Propane Safety information for You and Your Family," "Important Propane Safety Information for Users of Small Cylinders" (including cylinder transportation, storage and inspection procedures), an expansive "Propane Safety" booklet, weather/natural disaster information, and Suburban's Safety Data Sheet (SDS) may be read and downloaded online. These documents are also available free of charge by calling Suburban at 1-888-223-0029 and PERC pamphlets containing a Scratch and Sniff Test of propane odor can be purchased at 1-866-905-1075 or www.propanecatalog.com.

ATTACHMENT E – EMISSIONS CALCULATIONS

EMISSIONS CALCULATIONS

Table E-1 provides emissions calculations comparing natural gas and propane combustion emissions from the ACC burner. Emissions during system startups are estimated based on the burner firing at rated capacity (40 MMBtu/hr) and the estimated maximum annual number of startups (one cold startup and 26 hot startups), which is equivalent to operating the ACC burner at high fire for 100 hours/year. Emissions during normal operations are estimated based on the Beryl plant's natural gas purchase records and average daily fuel usage rates (50 Mcf) and conversion to propane using relative heating values of natural gas and propane.

Emissions are estimated using EPA AP-42 emissions factors for fuel combustion. The AP-42 Section 1.4 (2/98) natural gas combustion factors for small boilers (< 100 MMBtu/hr) equipped with low-NOx burners are used to calculate emissions from gas firing. The AP-42 Section 1.5 (7/08) LPG combustion factors are used to calculate emissions from propane firing. Note that Section 1.5 of AP-42 does not provide data for low-NOx propane-fired burners and therefore the comparison is conservatively high with regard to NOx emissions increases.

Table E-1 shows that emissions of all pollutants with the exception of NOx will be essentially unchanged. NOx emissions are conservatively estimated to increase by about 3.7 lb/hr and 1.1 tons/year, significantly below the R13 permit modification thresholds of 6 lb/hr and 10 tons/year. It should be noted that the maximum hourly emission rates associated with either gas or propane firing in the ACC burner are significantly less than the permit limits for Emission Point E-02 (ACC stack) which reflect normal operations during which wood is being dried and pyrolyzed. KMC is not requesting any revisions to the permitted emissions limits for the source.

TABLE F-1
ACC BURNER COMBUSTION EMISSIONS
KINGSFORD MANUFACTURING CO. - BERYL, WEST VIRGINIA

Source	Rated Capacity (MMBtu/hr)	Natural Gas Btu Content (Btu/hr)	Natural Gas Throughput (10 ⁶ ft ³ /hr)		Pollutant	Natural Gas Emission Factor ^b (lb/10 ⁶ scf)	Hours of Operation ^c (hours/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
			(10 ⁶ ft ³ /hr)	(10 ⁶ gal/yr)					
40 MMBtu/hr Natural Gas-Fired ACC Burner	40	1,020	0.039	3.92	NOx	50	100	1.361	0.098
	40	1,020	0.039	3.92	CO	84	100	3.294	0.165
	40	1,020	0.039	3.92	VOC	5.5	100	0.216	0.011
	40	1,020	0.039	3.92	SO ₂	0.6	100	0.024	0.001
40 MMBtu/hr Propane-Fired ACC Burner	40	1,020	0.039	3.92	PM ₁₀ /PM _{2.5}	7.6	100	0.298	0.015
	40	91,500	0.44	43.72	NOx	13	100	5.683	0.284
	40	91,500	0.44	43.72	CO	7.5	100	3.279	0.164
	40	91,500	0.44	43.72	VOC	0.8	100	0.350	0.017
40 MMBtu/hr Propane-Fired ACC Burner	40	91,500	0.44	43.72	SO ₂	0.054	100	0.024	0.001
	40	91,500	0.44	43.72	PM ₁₀ /PM _{2.5}	0.7	100	0.306	0.015

Btu content per EPA AP-42, Table 2.1, based upon EPA AP-42 emission factors for natural gas and propane-fired boilers - Section 1.4, (200), and Section 1.5, (708).
^a Sulfur content of propane assumed to be 0.54 g/100 ft³.
^b Emission factors for pollutants are based on one 40-MMBtu/hr boiler.
^c Maximum annual hours of operation on propane at high-fire of 100 hrs based on one 40-MMBtu/hr boiler and 26.2-hr cold start per year.

Net Change in Emissions - Startups

Pollutant	(lb/hr)	Emission Rate (ton/yr)
NOx	3.722	0.187
CO	-0.015	-0.001
VOC	0.134	0.007
SO ₂	0.000	0.000
PM ₁₀ /PM _{2.5}	0.008	0.000

Normal Operations

Source	Rated Capacity (MMBtu/hr)	Natural Gas Btu Content (Btu/hr)	Natural Gas Throughput ^d (10 ⁶ ft ³ /hr)		Pollutant	Natural Gas Emission Factor ^b (lb/10 ⁶ scf)	Hours of Operation ^c (hours/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
			(10 ⁶ ft ³ /hr)	(10 ⁶ gal/yr)					
40 MMBtu/hr Natural Gas-Fired ACC Burner	40	1,020	0.039	18.25	NOx	50	8,760	1.961	0.456
	40	1,020	0.039	18.25	CO	84	8,760	7.384	0.787
	40	1,020	0.039	18.25	VOC	5.5	8,760	0.216	0.030
	40	1,020	0.039	18.25	SO ₂	0.6	8,760	0.024	0.005
40 MMBtu/hr Propane-Fired ACC Burner	40	1,020	0.039	18.25	PM ₁₀ /PM _{2.5}	7.6	8,760	0.298	0.069
	40	91,500	0.44	203.44	NOx	13	8,760	5.683	1.122
	40	91,500	0.44	203.44	CO	7.5	8,760	3.279	0.763
	40	91,500	0.44	203.44	VOC	0.8	8,760	0.350	0.081
40 MMBtu/hr Propane-Fired ACC Burner	40	91,500	0.44	203.44	SO ₂	0.054	8,760	0.024	0.005
	40	91,500	0.44	203.44	PM ₁₀ /PM _{2.5}	0.7	8,760	0.306	0.071

Btu content per EPA AP-42, Table 2.1, based upon EPA AP-42 emission factors for natural gas and propane-fired boilers - Section 1.4, (200), and Section 1.5, (708).
^a Sulfur content of propane assumed to be 0.54 g/100 ft³.
^b Emission factors for pollutants are based on one 40-MMBtu/hr boiler.
^c Maximum annual hours of operation on propane at high-fire of 100 hrs based on one 40-MMBtu/hr boiler and 26.2-hr cold start per year.
^d Annual fuel throughput for normal operations based on 40-MMBtu/hr boiler and average daily natural gas usage of 40 MMBtu/day.

Net Change in Emissions - Normal Operations

Pollutant	(lb/hr)	Emission Rate (ton/yr)
NOx	3.722	0.866
CO	-0.015	-0.004
VOC	0.134	0.031
SO ₂	0.000	0.000
PM ₁₀ /PM _{2.5}	0.008	0.002

Total Net Change in Emissions

Pollutant	(lb/hr)	Emission Rate (ton/yr)
NOx	3.722	1.052
CO	-0.015	-0.004
VOC	0.134	0.038
SO ₂	0.000	0.000
PM ₁₀ /PM _{2.5}	0.008	0.002