

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **07 2016 - 004** Project Number: 2016-03-054

Installation Number: 087-0016

Parent Company: Golden Triangle Energy, LLC

Parent Company Address: 15053 Highway 111, Craig, MO 64437

Installation Name: Golden Triangle Energy, LLC

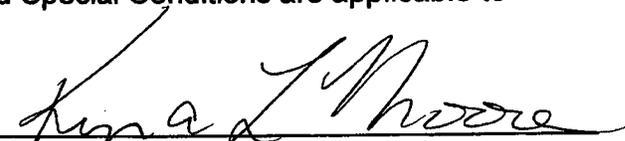
Installation Address: 15053 Highway 111, Craig, MO 64437

Location Information: Holt County, S13, T62N, R40W

Application for Authority to Construct was made for:
Two new fermentation tanks. This review was conducted in accordance with Section (5),
Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.


Prepared by
David Little, PE
Environmental Engineer III
New Source Review Unit


Director or Designee
Department of Natural Resources

JUL 14 2016

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Golden Triangle Energy, LLC
Holt County, S13, T62N, R40W

1. Control Device Requirement – Fermentation Scrubber C003
 - A. Golden Triangle Energy, LLC shall control emissions from fermentation tank (T314) and fermentation tank (T315) using existing fermentation scrubber C003.
 - B. All existing special conditions pertaining to scrubber C003 in permit 072008-001 issued by the Air Pollution Control Program remain in effect.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2016-03-054
Installation ID Number: 087-0016
Permit Number:

Installation Address:

Golden Triangle Energy, LLC
15053 Highway 111
Craig, MO 64437

Parent Company:

Golden Triangle Energy, LLC
15053 Highway 111
Craig, MO 64437

Holt County, S13, T62N, R40W

REVIEW SUMMARY

- Golden Triangle Energy, LLC has applied for authority to install two new fermentation tanks.
- The application was deemed complete as of May 3, 2016.
- HAP emissions are expected from the proposed equipment. However, the HAP emission increase is zero.
- 40 CFR 60 Subpart VVa, *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006*, applies to the two new fermentation tanks. The installation produces beverage, industrial, and fuel ethanol.
- None of the NESHAPs under 40 CFR 61 apply to the two new fermentation tanks.
- None of the MACTs under 40 CFR 63 apply to the two new fermentation tanks.
- The existing permitted fermentation scrubber C003 will be used to control emissions from the two new fermentation tanks and the existing fermentation tanks.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels. A permit is required to make the scrubber operation enforceable as a practical manner for the new fermentation tanks.
- This installation is located in Holt County, an attainment area for all criteria pollutants.

- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is a chemical process plant. The CFR specifically excludes ethanol production from being defined as a chemical process plant. However the SIP has not been updated to reflect the CFR. The installation's major source level is 100 tpy and fugitive emissions are included.
- Ambient air quality modeling was not performed since potential emissions of the project are below de minimis levels.
- Emissions testing is not required as a part of this permit. Testing of the fermentation scrubber is required per the previously issued permit 072008-001.
- Submittal of an update to the intermediate operating permit application under project 2014-05-089 is required for this installation within 90 days of new fermentation tank startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Golden Triangle Energy, LLC is a 21,000,000 gallon per year capacity food grade, industrial, and fuel ethanol plant located in Craig. For construction permits the installation is a major source of GHG and minor source of all other pollutants. The installation holds an intermediate operating permit.

Currently GHG emissions from biogenic sources such as fermentation are subject to review. Potential GHG mass and CO₂e emissions when including fermentation are 125,370 and 125,429 tpy, respectively. Actual GHG mass and CO₂e emissions when including fermentation are also above 100,000 tpy. However, at this time GHG emissions alone cannot subject a source to a part 70 operating permit.

The following New Source Review permits have been issued to Golden Triangle Energy, LLC from the Air Pollution Control Program. In recent years various "no construction permit required" letters have been issued for storage tanks and a loading rack.

Table 1: Permit History

Permit Number	Description
022000-004	18 MM gallon ethanol plant
052003-014	New storage tanks (were not constructed)
072005-033	New storage tanks
122005-004	Industrial alcohol, increase production to 21 MM gallons, incorporate consent decree
072008-001	Storage capacity, denaturants, distillation column, revise emission calculations
072008-001A	Revise acrolein emissions and modeling
072008-001B	Revise SO ₂ testing requirements
092015-013	Centrifuges

PROJECT DESCRIPTION

Golden Triangle Energy, LLC proposes to install two new fermentation tanks T314 and T315. The tanks will be in addition to the three existing permitted fermentation tanks (T301, T302, and T303) and will work in parallel with them to produce existing product types. All five tanks may operate simultaneously. The tanks are being installed to maintain capacity while the existing tanks undergo maintenance. Fermentation is bottlenecked by the downstream distillation column to approximately 257 gallons per minute. The additional tanks will not cause an increase in potential annual production, nor regain lost capacity. The installation has demonstrated the maximum hourly capacity by providing actual production data. The additional tanks should not increase potential emissions. However, the additional tanks may allow a longer fermentation time and allow more alcohol to be produced from the same amount of grain, or conversely allow the same amount of alcohol to be produced from a lesser amount of grain. As the tanks are bottlenecked, it is believed the same amount of alcohol will be produced from a lesser amount of grain. The existing tanks are controlled by fermentation scrubber C003, which will also control the new tanks. The scrubber is subject to continuous compliance demonstrated through subsequent emission tests. Therefore through the existing combination of recording production data and conducting emission tests Golden Triangle Energy, LLC can show that the project will not debottleneck the installation or increase potential emissions.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels. A permit is required to make the scrubber operation enforceable as a practical manner for the new fermentation tanks.

APPLICABLE REQUIREMENTS

Golden Triangle Energy, LLC shall comply with the following applicable requirements for the new fermentation tanks. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 17, 2016, received March 21, 2016, designating Golden Triangle Energy, LLC as the owner and operator of the installation.
- Golden Triangle Energy, LLC beer feed data, received May 2 to May 4, 2016.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Roger Hill
General Manager
Golden Triangle Energy, LLC
15053 Highway 111
Craig, MO 64437

RE: New Source Review Permit - Project Number: 2016-03-054

Dear Mr. Hill:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information

Mr. Roger Hill
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is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ao.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:dj

Enclosures

c: Kansas City Regional Office
PAMS File: 2016-03-054

Permit Number: