

STATE OF 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: **102013-010**

Project Number: 2013-05-021
Installation Number: 510-0808

Parent Company: Chemisphere

Parent Company Address: 2101 Clifton Ave, St. Louis, MO 63139

Installation Name: Chemisphere

Installation Address: 2101 Clifton Ave, St. Louis, MO 63139

Application for Authority to Construct was made for:

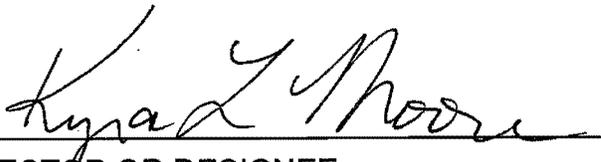
The installation of two 35,000 gallon ethanol storage tanks. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

OCT 15 2013

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

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 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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' 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 sources(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 at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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

Project Number: 2013-05-021
Installation ID Number: 510-0808
Permit Number:

Chemisphere
2101 Clifton Ave
St. Louis, MO 63139

Complete: May 9, 2013

Parent Company:
Chemisphere
2101 Clifton Ave
St. Louis, MO 63139

REVIEW SUMMARY

- Chemisphere has applied for authority to install two 35,000 gallon ethanol storage tanks.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation. Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction or Modification Commenced After July 23, 1984*, does not apply to the storage tanks because the liquid has maximum true vapor pressure less than 15.0 kPa.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- 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.
- This installation is located in the city of St. Louis, a nonattainment area for the 1997 PM_{2.5} standard, the 2008 lead standard, the 1997 8-hour ozone standard and the 2008 8-hour ozone standard, and an attainment area for all other criteria pollutants. The installation's major source level is 100 tons per year for PM_{2.5}, NO_x, and VOC and 250 tons per year for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- A request to modify the facility's Intermediate Operating Permit is required for this installation within 90 days of equipment startup, or the facility may choose to apply for a Part 70 Operating Permit within one (1) year of equipment startup.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

Chemisphere is a chemical distribution facility that receives and ships chemicals for customers. The equipment at the installation includes storage tanks, blending tanks, container filling operations, rail unloading racks, and truck loading/unloading racks. The facility is considered a minor source for construction permits and an intermediate source for operating permits.

Table 2 of the previous permit issued to the installation by the City of St. Louis (No. 10-08-016) gives the emissions summary from the installation. In this table, the new installation conditioned potential emissions for VOC, individual HAP, and combined HAP were listed as less than 50 tpy, 10 tpy, and 25 tpy, respectively, but there were no special conditions in the permit that specifically limited the installation-wide PTE to less than these levels. In the latest intermediate operating permit issued for the installation (No. OP2012-019), it was determined that the intention was to limit the installation-wide VOC and HAP to these levels. Therefore, the operating permit included special conditions for these limits, thereby making them federally enforceable. However, there is no regulatory basis for the 50 tpy VOC limit, either in construction permits or operating permits. For the Intermediate Operating Permit, the facility should have been limited to 100 tpy of VOC. Therefore, the installation should submit a modification request to the Air Pollution Control Program to revise the limit in its Operating Permit.

Furthermore, the facility is considered a minor source for construction permits because of the 50.0 tpy VOC and 10.0/25.0 tpy HAP limit in its operating permit. If the facility ever decides to apply for a Part 70 Operating Permit instead of an Intermediate Operating Permit, it would then be considered a major source for construction permits.

The following New Source Review permits have been issued to Chemisphere from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
95-05-061	Nine Chemical Storage Tanks
97-02-014	Ethanol Storage Tank
97-08-086	Two Chemical Storage Tanks
06-03-005	Three Mixing Tanks and Three Filling Lines
07-12-030	Three Mixing Tanks and Three Filling Lines
SR08.049	Three 17,000 Gallon Storage Tanks
10-08-016	Two Lance Filling Processes and Two Mixing Tanks

PROJECT DESCRIPTION

The installation proposes to install two 35,000 gallon ethanol storage tanks. The ethanol stored may be pumped into trucks for hauling offsite or be mixed with other solvents before shipping. The ethanol will be loaded out using existing filling lines and hauled through a paved lot.

EMISSIONS/CONTROLS EVALUATION

VOC emissions are expected from the working and breathing losses of the storage tanks. There will also be VOC emissions from filling of the tanker trucks for shipping. The TANKS software, version 4.0.9d, was used to calculate the working and breathing losses. The loading loss equation from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 5.2, *Transportation and Marketing of Petroleum Liquids*, (7/08), was used to derive the emission factor used to calculate VOC emissions from ethanol loading into tanker trucks. The tankers are loaded using submerged loading. Particulate emissions are expected from hauling the ethanol offsite. PM_{2.5}, PM₁₀, and PM emissions were calculated using the paved haul road equation from AP-42, 13.2.1, *Paved Roads*, (1/11).

The following table provides an emissions summary for this project. Existing potential emissions were taken from the previous operating permit issued to the facility (OP2012-019). Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the new equipment assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2012 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	0.32	N/A
PM ₁₀	15.0	N/D	N/D	0.06	N/A
PM _{2.5}	10.0	N/D	N/D	0.02	N/A
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	<50.0	9.89	17.22	N/A
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	<10.0/25.0	6.59	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

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.

APPLICABLE REQUIREMENTS

Chemisphere shall comply with the following applicable requirements. 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
- *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

SPECIFIC REQUIREMENTS

- *Control of Emissions from Volatile Organic Liquid Storage*, 10 CSF 10-5.500
 - This rule does not apply to the ethanol storage tanks because the tanks do not have capacity greater than 40,000 gallons.

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*, I recommend this permit be granted without special conditions.

Chia-Wei Young
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 3, 2013, received May 9, 2013, designating Chemisphere as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

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	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Ms. Tiffany Collis
EHS Manager
Chemisphere
2101 Clifton Ave
St. Louis, MO 63139

RE: New Source Review Permit - Project Number: 2013-05-021

Dear Ms. Collis:

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, if any, 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.

If you have any questions regarding this permit, please do not hesitate to contact Young, Chia-Wei, 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:cyl

Enclosures

c: St Louis Regional Office
PAMS File: 2013-05-021

Permit Number: